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SATURS CONTENTS

SPORTS UN VESELĪBA SPORTS AND HEALTH

- Deklava Liāna, Apsīte Monta, Millere Inga, Fokina Olga**
DZĪVES KVALITĀTE UN TĀS SAISTĪBA AR STRESORIEM
PANSIONĀTA IEDZĪVOTĀJIEM LATVIJĀ
*Quality of Life and its Relation to Stressors Elderly Nursing Home
Residents in Latvia* 15
- Fokina Olga, Vasiļjeva Ērika, Millere Inga, Deklava Liāna**
TRAUKSMES UN DEPRESIJAS RĀDĪTĀJU NOTEIKŠANA
BEZDARBNIEKIEM LATGALES REĢIONĀ
*Anxiety and Depression Rates Among the UnempFloyed Citizens of
Latgale Region* 24
- Gabrys Tomasz, Stanula Arkadiusz, Szmatlan-Gabryś Urszula**
A COMPARISON OF METHODS FOR CALCULATING LACTATE
ANAEROBIC THRESHOLDS IN JUDO AND MIXED MARTIAL
ARTS ATHLETES 35
- Gora Tomasz, Spalek Renata**
SELECTED ASPECTS OF MARTIAL ARTS FOR HEALTH
UNDERLYING THEIR PRO-ACTIVE INFLUENCE IN THE CONTEXT
OF CENTRAL NERVOUS SYSTEM PLASTICITY 46
- Harju Sintija, Akermane Ruta, Saulīte Mārīte**
PĒDU APRŪPES PODOLOĢISKIE ASPEKTI SOCIĀLĀS APRŪPES
CENTROS
Podological Aspects of Foot Care in Social Care Centers 54
- Kalnina Inta, Deklava Liana**
PARENT SATISFACTION WITH TREATMENT AND CARE
SERVICES WITHIN THE FRAMEWORK OF PEDIATRIC
PALLIATIVE CARE IN LATVIA 65
- Kardeliene Laimute, Razbadauskas Arturas**
САМООЦЕНКА СВОЕГО ЗДОРОВЬЯ УЧИТЕЛЯ ФИЗИЧЕСКОЙ
КУЛЬТУРЫ КАК ФАКТОР, ОПРЕДЕЛЯЮЩИЙ КАЧЕСТВО ЕГО
ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ
*Self-Evaluation of Physical Education Teachers' Health as a Factor
for Quality of Professional Activities* 75

Kaupužs Aivars, Liepiņa Inga FIZISKO AKTIVITĀTI IETEKMĒJOŠIE VIDES FAKTORI IZGLĪTĪBAS IESTĀDĒS <i>Factors Affecting Levels of Physical Activity in School Environment</i>	85
Kinderis Remigijus, Danielienė Jūratė HEALTHY LIFESTYLE IN LITHUANIA AND LATVIA STUDENT POPULATION IN THE CONTEXT OF INDIVIDUAL VALUES	99
Koriakovtseva Olga, Tarkhanova Irina, Upeniece Irena, Arnis Voldemars, Fedorova Polina HEALTH SAVING STRATEGY AS A FACTOR OF “SOCIETY WELLNESS”	110
Krawczyk Marcin, Ozimek Mariusz, Rokowski Robert, Pociecha Mariusz, Draga Pawel ANTHROPOMETRIC CHARACTERISTICS AND ANAEROBIC POWER OF LOWER LIMBS AND THEIR RELATIONSHIPS WITH RACE TIME IN FEMALE SPEED CLIMBERS	118
Kuzņecova Jeļena, Šverina Vija MĀSZINĪBU STUDENTU KARJERAS IZVĒLES IETEKMĒJOŠIE FAKTORI <i>Factors Influencing Career Choice among Nursing Students</i>	127
Marzec Arkadiusz, Pekarcik Lubomir, Woźniak Waldemar RECREATIONAL ACTIVITY OF WOMEN AGED 50+ IN THE LARGE CITY ENVIRONMENT	135
Millere Anna, Kalnberza-Ribule Zaiga, Nulle Anda, Deklava Liana, Millere Inga STRESS COPING AS A PSYCHOLOGICAL FACTOR FOR CHRONIFICATION OF LOW BACK PAIN	144
Millere Inga, Deklava Liana, Skutele Ineta, Millere Elīna, Fokina Olga SHIFT WORK IMPACT TO SYMPTOMS OF ANXIETY, DEPRESSION AND SLEEP QUALITY AMONG NURSES	154
Modzelewska Olga MEN AND SPORT SOCIALIZATION TO MASCULINITY	162

Nemeikšienė Virginija, Rūdytė Kristina MANIFESTATION OF SOCIETAL ATTITUDE TOWARDS THE SOCIAL WORKER'S PROFESSION IN LITHUANIA AND THE UKRAINE	171
Ortenburger Dorota Elżbieta, Wąsik Jacek COGNITIVE-BEHAVIORAL APPROACH AND THE ROLE OF PHYSICAL ACTIVITY IN THE TREATMENT OF MUSCULOSKELETAL PAIN IN ATHLETES	182
Palkova Karīna ĀRSTNIECĪBAS PERSONU TIESISKĀ INFORMĒTĪBA KĀ KVALITATĪVĀS DARBĪBAS PAMATNOTEIKUMS DARBĀ AR NEPILNGADĪGIEM PACIENTIEM <i>Medical Personnel's Legal Awareness as the Key of Principal Quality of Work with Minor Patients</i>	190
Pilis Karol, Stec Krzysztof, Witkowski Zbigniew, Stanula Arkadiusz, Gabrys Tomasz, Mikołajec Kazimierz WORKLOADS OF YOUNG SOCCER PLAYERS	199
Pontaga Inese, Zidens Janis COMPARISON OF LATVIAN QUALIFIED BASKETBALL AND HANDBALL PLAYERS PERFORMANCE	211
Porozovs Juris, Dudkina Aija, Valdemiers Alvis RĪGAS PAMATSKOLAS SKOLĒNU UN UNIVERSITĀTES PEDAGOĢIJAS SPECIALITĀTES STUDENTU VESELĪBAS STĀVOKĻA, FIZISKO AKTIVITĀŠU UN LABIZJŪTAS PAŠNOVĒRTĒJUMS <i>The Self-estimation of the Health Level, Physical Activities and Feeling of the Riga Basic School Students and University Pedagogical Specialty Students</i>	222
Sargsjane Jelena SABIEDRĪBAS INFORMĒTĪBA PAR HIV INFEKCIJAS PREVENTĪVIEM PASĀKUMIEM <i>Public Awareness about HIV Prevention Measures</i>	233
Sarzyńska-Długosz Iwona, Jagieła Magdalena, Pilis Karol, Ptaszkowska Lucyna, Pilis Wiesław, Stec Krzysztof INFLUENCE OF COMPLEX PHYSIOTHERAPY ON THE FUNCTIONAL CONDITION OF THE SPINE IN OLDER PEOPLE	242

Siminaitis Igors, Čupriks Leonīds, Čuprika Aleksandra ELPOŠANAS APGRŪTINĀŠANAS IETEKME UZ ORGANISMA FUNKCIONALITĀTI RITENBRAUKŠANĀ TRIATLONĀ <i>Effect of Respiratory Depression on Organism Functionality in Cycling in Triathlon</i>	252
Stanula Arkadiusz, Roczniok Robert Krzysztof, Gabrys Tomasz, Szmatlan-Gabrys Urszula, Ozimek Mariusz RELATIONSHIPS OF PHYSICAL FITNESS TEST RESULTS AND PLAYER PERFORMANCE INDICATORS IN NATIONAL-LEVEL ICE HOCKEY PLAYERS	264
Stec Krzysztof, Pilis Karol, Witkowski Zbigniew, Pilis Anna, Michalski Cezary, Zych Michal ANAEROBIC POWER IN SPORTS	274
Swiat Maciej, Kozłowska Katarzyna, Pilis Anna, Ptaszkowska Lucyna, Pilis Wieslaw, Stec Krzysztof BACK PAIN CHARACTERISTICS IN PHYSICAL AND OFFICE WORKERS	283
Szmatlan-Gabrys Urszula, Gabrys Tomasz, Stanula Arkadiusz CHARACTER OF RELATIONSHIP BETWEEN SOMATIC COEFFICIENTS AND PHYSIOLOGICAL PARAMETERS THE 15-17 YEAR OLD ICE-HOCKEY PLAYERS	293
Vīksniņa Ina, Vītoliņa Kristīne, Priede Līga DARBA VIDES RISKI SOCIĀLĀ DARBA SPECIĀLISTIEM <i>Risks of Work Environment for Social Work Specialists</i>	304
Wąsik Jacek CONSTRUCTIVE DEALING WITH ANXIETY AND ANGER AS AN ASPECT OF THE QUALITY OF LIFE OF MATURING GIRLS WHO PRACTISE TAEKWON-DO	314
Wasilewska Małgorzata, Bergier Józef YOUTH PHYSICAL ACTIVITY AND THE PROCESS OF PHYSICAL EDUCATION IN LUBLIN PROVINCE, POLAND	323
Zalcmane Karina, Kamenecka-Usova Marina THE PROBLEMATICS OF SPORTS LAW IN LATVIA: CIVIL AND CRIMINAL LAW STATUTORY ACTS PERSPECTIVE	332

MĀKSLA UN DIZAINS
ART AND DESIGN

- Balajewicz Magda**
THE FIGURE OF SHAMAN AS THE POTENTIAL MODEL OF
LEADER IN MUSIC AND MUSICAL EDUCATION 349
- Bragina Natalia, Stepanov Vladislav**
ФИЛОСОФСКАЯ ИНТЕРПРЕТАЦИЯ СИМВОЛИКИ КАРТИН
М.-К. ЧЮРЛЕНИСА
Philosophical Interpretation of Symbolism of Čiurlionis' Paintings 360
- Cāne Renāte**
LATVIJAS FILMU MĀRKETINGA STARPTAUTISKAJĀ TIRGŪ
Latvian Film Marketing in the International Market 372
- Dundure Inese, Apele Diāna**
GRAFISKĀ DIZAINA IESPĒJAS INTEGRĒTAI PIEEJAI MUZEJOS
MĀKSLAS VĒRTĪBU REPRODUCĒŠANĀ
*Graphic Design Opportunities for Integrated Approach in Museums
in Reproduction of Art Treasures* 384
- Gorobeca Paula**
DEJU PEDAGOGA PROFESIONĀLĀS IDENTITĀTES KOMPONENTI
Professional Identity Components of a Dance Teacher 397
- Kļava Oskars, Katane Irēna**
JAUNIEŠU TEĀTRA MĀKSLAS NEFORMĀLĀ IZGLĪTĪBA DRĀMAS
PEDAGOĢIJAS VĒSTURISKĀS ATTĪSTĪBAS KONTEKSTĀ
*Youth Theatre Art Non-formal Education in the Context of Drama
Pedagogy Historical Development* 412
- Krūmiņa Aira Aija**
DIZAINA DOMĀŠANA PEDAGOĢIJAS KONTEKSTĀ
Design Thinking in the Context of Pedagogy 423
- Kucherovskaya Veronika, Momotova Liliia**
ФОРМИРОВАНИЕ КОМПЛЕКСА ЗАДАЧ КАК ПУТЬ К ЭФФЕК-
ТИВНОСТИ ДИЗАЙН-ОБРАЗОВАНИЯ
*Establishing the Set of Tasks as a Way to Improve Effectiveness of Art
and Design Education* 435

Lapkovska Eva, Dabolina Inga AN INVESTIGATION ON THE VIRTUAL PROTOTYPING VALIDITY – SIMULATION OF GARMENT DRAPE	448
Makhmudova Malika, Makhmudova Muhayyo ФОРМИРОВАНИЕ РЕСТАВРАЦИОННОЙ ШКОЛЫ УЗБЕКИСТАНА И ЕЁ РОЛЬ В СОХРАНЕНИИ АРХИТЕКТУРНОГО НАСЛЕДИЯ <i>Formation of the Restoration School in Uzbekistan and Its Role In Preservation of Architectural Heritage</i>	459
Marchenoka Marina PEDAGOGICAL TECHNOLOGIES IN MUSIC EDUCATION AS A FACTOR OF DEVELOPMENT OF THE INTEGRAL PERSONALITY	470
Ozola Silvija LIEPĀJAS “JAUNĀS PASAULES” UN TOSMARES EZERA PIEKRASTES MAZSTĀVU DZĪVOJAMĀS APBŪVES UN PLĀNOJUMA ATTĪSTĪBA LĪDZ OTRAJAM PASAULES KARAM <i>Low-Rise Residential Building and Planning Development of Liepaja “New World” and the Lake Tosmare Shore till World War II</i>	484
Ozola Silvija LIEPĀJAS DZĪVOJAMĀ RAJONA “ZAĻĀ BIRZE” PLĀNOJUMA UN TELPISKO STRUKTŪRU ATTĪSTĪBA PĒC OTRĀ PASAULES KARA <i>Development of Liepaja Residential Area “Green Grove” Planning and Spatial Structures after World War II</i>	504
Zakovska Aija PUSAUDŽU MŪZIKAS KLAUSĪŠANĀS PRASMJU APGUVE UN PIELIETOJUMS <i>Acquisition and Application of Music Listening Skills for Teenagers</i>	519
Zarembo Liene ART DECO STILA IEZĪMES 20.GS. DIZAINERU SONJAS DELANĪ UN POLA PUARĒ TEKSTILDARBOS <i>Art Deco Style’s Features in the Textile Works of Designers Sonia Delaunay and Paul Poiret</i>	530

SPORTS UN VESELĪBA
SPORTS AND HEALTH

DZĪVES KVALITĀTE UN TĀS SAISTĪBA AR STRESORIEM PANSIONĀTA IEDZĪVOTĀJIEM LATVIJĀ

Quality of Life and its Relation to Stressors Elderly Nursing Home Residents in Latvia

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Abstract. *There is a lot of talk about global aging in society and, as people start to live longer, the society has to take care about their well-being in old age too. There are developed a series of definitions about life quality and designed a variety of methods for assessing quality of life of different groups of people and society as a whole over the time. At such a group of people belongs also those who lives in a nursing home and for various reasons they are aging in one of the nursing homes in Latvia. A study has been made to examine the correlation between stressors and quality of life of nursing home residents. The study objective was quantification method - survey, using two research instruments - questionnaires and 134 nursing home residents were interviewed. The results show that there are both positive and negative relationship between stressors and indicator of quality of life. Overall, the results after the quality of life index characterize the situation as good, the figure is described as an adequate quality of life for the majority of respondents, but for a part of respondents in several, important areas of life there is needed an improvement.*

Keywords: *quality of life, residents of nursing homes, stressors.*

Ievads

Introduction

Sabiedrības novecošana uzskatāma par dabisku parādību modernizācijas procesā, to veicina vidēja dzīves ilguma palielināšanās, dzimstības samazināšanās un citi faktori. Tā ir vairāk vai mazāk aktuāla problēma visās Eiropas valstīs (Rungule et al., 2012).

Attīstītajās valstīs, paaugstinoties dzīves līmenim, pagarinās cilvēka mūža ilgums un līdz ar to palielinās arī vecu cilvēku skaits. Labas garīgās un fiziskās

spējas, saglabāta dzīves kvalitāte, apmierinātība ar dzīvi – tie ir gados vecu cilvēku veselības priekšnoteikumi.

Mūsdienās dzīves kvalitāte vairs nav vienkāršs sociālo indikatoru kopums, bet kompleks koncepts, kurš ietver savstarpējā mijiedarbībā esošus „objektīvos” un „subjektīvos” rādītājus dažādās dzīves jomās. Cilvēkam novecojot daudz kas mainās, viņš var kļūt vientuļš – gan fiziskā, gan psiholoģiskā nozīmē. Samazinās viņa sociālo kontaktu daudzums, un pazeminās to kvalitāte (Sociālais palīdzības fonds, 2003).

Dažādu apsvērumu dēļ, aizvien biežāk cilvēki vecumdienas izvēlas, vai dažādu apstākļu dēļ ir spiesti pavadīt pansionātos. Šādas dzīves pārmaiņas var krasī ietekmēt vecākā gadagājuma cilvēku dzīves kvalitāti (gan pozitīvi, gan negatīvi). Uzsākot dzīvi pansionātā, nozīmīgs ir savstarpējās adaptācijas process (vecais cilvēks, kas vēlas dzīvot saskaņā ar sevi, savām vajadzībām, vēlmēm un pansionāta darbinieki, kuriem jāsniedz nepieciešamā aprūpe). Veiksmīga savstarpējā sadarbība veicina ātrāku un efektīvāku adaptācijas procesu un palīdz nodrošināt nepieciešamo dzīves kvalitāti.

Pētījuma uzdevumi un mērķis ir noskaidrot dzīves kvalitāti un izpētīt tās savstarpējo saistību ar esošajiem stresoriem dažādu Latvijas pansionātu iedzīvotājiem.

Pētījuma teorētiskie aspekti *Theoretical Aspects*

Eiropadome 2009. gadā izteica aicinājumu Eiropas savienības dalībvalstīm turpināt prioritizēt veselīgas un cienīgas novecošanas jautājumus, akcentējot koncentrēšanos uz preventīviem pasākumiem kā stratēģiju dzīves kvalitātes uzlabošanai (Rungule et al., 2012)

Viens no dzīves kvalitātes rādītājiem ir sagaidāmais mūža ilgums. Kopumā ES-27 2008.gadā vidējais sagaidāmais dzīves ilgums 60.gadus veciem cilvēkiem bija 22.7 gadi, Latvijā – 19.2 gadi. Pēdējos gados tas nav nozīmīgi mainījies, tomēr būtiskais finansējuma samazinājums veselības aprūpes nozarei krīzes gados, daudzu slimnīcu slēgšana, medicīniskās aprūpes pieejamības samazināšanās Latvijā ietekmē cilvēku, jo īpaši vecu cilvēku dzīves kvalitāti un ilgumu (Rungule et al., 2012)

Savu veselību, kas ir viens no svarīgākiem dzīves kvalitātes rādītājiem, kā ļoti sliktu vai sliktu novērtē aptuveni katrs desmitais Baltijas valstu iedzīvotājs vecumā pēc 65 gadiem. Savukārt Eiropas savienībā tas ir divas reizes zemāks.

Līdz ar vecuma palielināšanos, cilvēkiem rodas arvien lielākas grūtības tikt galā ar ikdienas darbiem, piedalīties dažādos sabiedriskajos pasākumos, aprūpēt sevi un citi. Atkarībā no esošajām grūtībām un cilvēka personīgajām vajadzībām,

aprūpe var tikt sniegta vairākos veidos: mājas aprūpe, institucionālā aprūpe un neformālā aprūpe.

Eiropas komisijas veiktajā pētījumā, kurā tika noskaidrots arī iedzīvotāju viedoklis par vecu cilvēku ilgstošas aprūpes veidu, iegūtie dati liecina, ka 9 % atbalsta iekārtošanu ilgstošas aprūpes institūcijā (European Commission, 2007). Latvijā esošā ilgstošās aprūpes sistēma nodrošina gan medicīnisko, gan sociālo aprūpi. Šī aprūpe saskaņā ar Latvijas likumdošanu ir pieejama iedzīvotājiem, kuri ir sasnieguši 62 gadu vecumu. Tiek izvērtēts cilvēkam nepieciešamais aprūpes veids un gadījumos, kad tā ir nepieciešama visu diennakti, tiek lemts jautājums par ievietošanu ilgstoša aprūpes institūcijā jeb pansionātā. Latvijas pansionātos 2008.gadā uzturējās 6080 pensijas vecuma cilvēku.

Dzīves vietas maiņa ir viens no biežāk sastopamajiem faktoriem, kas spēcīgi ietekmē vecu cilvēku dzīves kvalitāti. Kā jebkurā dzīves posmā, jo īpaši vecumdienās cilvēku biedē viss jaunais un nezināmais, tā ir kā aizsargreakcija uz pārmaiņu procesu. Bieži vien cilvēks, nav gatavs šādām pārmaiņām, situācijās, kad nav iespējams nodrošināt aprūpi, pielāgojot dzīves vidi vecā cilvēka vajadzībām, ja vecais cilvēks jūtas vientuļš, bieži nākas mainīt dzīves vietu, pārceļoties uz pansionātiem. To bieži pavada stress un depresija, satraukums, kas var pasliktināt fizisko un psiholoģisko veselības stāvokli. Jebkuras pārmaiņas nepieciešams pēc iespējas vairāk saskaņot ar vecā cilvēka vēlmēm, kā arī respektēt viņa individualitāti (Lasmane, 2005).

Pētījumā, kas veikts Vašingtonā un Sietlā (ASV) par vecu cilvēku dzīves kvalitāti, dzīvojot pansionātā un kopienās, tika pierādīts, ka, lai arī nav ievērojamas būtiskas atšķirības starp dzīves kvalitātes rādītājiem šīm dzīves vietām, tomēr pansionāta iedzīvotājiem ir zemāks dzīves kvalitātes rādītājs. Šī rezultātu atšķirība tiek saistīta ar to, ka pansionāta iedzīvotājus vairāk satrauc viņu fiziskā veselība, finansiālais stāvoklis, savstarpējās attiecības starp līdzcilvēkiem. Rezultāti atspoguļo arī to, ka pansionāta iedzīvotāji nevar pieņemt, ka viņu līdzcilvēkiem dzīvojot kopienās ir labāki dzīves apstākļi un vēlētos uzlabot savu dzīves kvalitāti (Pearlman & Uhlmann, 1998).

Vecākā gadagājuma cilvēki savā ikdienā vairāk fokusējas uz fiziskām ciešanām nekā uz emocionālām grūtībām, ļoti pārdzīvo dažādus dzīves notikumus, tādejādi ir pakļauti nemitīgai stresoru ietekmei un stresam. Viņi bieži vien jūt skumjas, bēdas, sirdsapziņas pārmetumus par sen notikušām lietām, vai nožēlu par nepareizi izdarītiem darbiem, vai to, kas palicis neizdarīts (Felce & Perry, 1996).

Pensilvānijā veiktajā pētījumā tika salīdzināti stresori un stresa veidošanās iespējamība veciem cilvēkiem, kas plāno pārcelties, vai tiek pārcelti uz dzīvi pansionātā. Iegūtie rezultāti liecina, ka gados vecāki iedzīvotāji izjuta stresoru ietekmi (trauksmi) gan pirms pārvietošanas, gan arī pārcelšanās brīdī. Tika secināts, ka dzīves kvalitāti iespējams uzlabot, sagatavojot seniorus šīm

pārmaiņām un pašam pārceļšanās procesam, identificējot šos stresorus un mazinot to ietekmi uz pārceļšanos (Hodgson et al., 2004)

Pētījuma metodoloģija un izlase *Research Methodology*

Pētījumā tika izmantota kvantitatīvā pētniecības metode- anketēšana. Respondentu anketēšanai izmantoja divus instrumentus: autoru izveidoto demogrāfisko datu un stresoru noteikšanas anketu, kā arī Dzīves kvalitātes novērtēšanas anketu "Quality of Life Profile Adult Version". Šī instrumenta atjauninātā versija tika izstrādāta balstoties uz Dzīves kvalitātes modeli, kurā dzīves kvalitāte tiek definēta kā līmenis, kurā persona izbauda svarīgākās savas dzīves iespējas. Tās veidojas no izdevībām un ierobežojumiem, limitiem, ar ko cilvēks saskaras savā dzīvē (Renwick & Myerscough, 2012). Iegūtie Dzīves kvalitātes rādītāji tika novērtēti pēc intervāliem:

- -6.0 līdz 10.00 Ideāls rādītājs, kas uzrāda lielisku dzīves kvalitāti;
- -3.0 līdz 5.99 Laba dzīves kvalitāte, bez būtiskām raizēm;
- -1.0 līdz 2.99 Adekvāta dzīves kvalitāte, bet vairākās jomās nepieciešami uzlabojumi;
- -1.1 līdz -5.99 Neapmierinoša dzīves kvalitāte, ir nepieciešami uzlabojumi;
- -6 līdz -10.0 Zema dzīves kvalitāte, iespējams, ka nepieciešama uzraudzība un iejaukšanās.

Pētījuma rezultātu apstrādei tika izmantota prognozējošās analītikas un statistiskās analīzes programmatūra IBM SPSS Statistics 22. Tika aprēķināti aprakstošās statistikas rādītāji. Lai noteiktu statistiski nozīmīgas atšķirības starp sociodemogrāfiskām pazīmēm un dzīves kvalitātes profila rādītājiem, tika aprēķināti korelācijas koeficienti (Pirsona korelācijas koeficients).

Pētījuma rezultātu analīze *Analysis of the Research Results*

Pētījuma izlasi veido 134 respondenti (vecie cilvēki- pansionātu iemītnieki), no 4 dažādiem Latvijas vispārēja tipa pansionātiem Vidzemē, Latgalē, Zemgalē un Kurzemē. Respondentu iekļaušanas kritēriji izlasē: vecums (no 65 g.v.) un veselības stāvoklis (respondents, kurš ir adekvāts, pie skaidra saprāta un patstāvīgi, vai ar nelielu palīdzību spēj aizpildīt aptaujas anketas). Vidējais respondentu vecums ir 75 gadi. Izlases lielāko daļu veido sievietes (68.7 %), savukārt vīrieši tikai 31.3 % vīriešu. Vislielākais respondentu skaits ir vecumā 65-78 gadi (69.4 %). Rezultāti par pārceļšanās iemesliem uz pansionātu liecina, ka

lielākā daļa respondentu (59 %) ir uzsākusi dzīvi pansionātā pēc sociālā dienesta nosūtījuma un katrs piektais pēc savas vai ģimenes locekļu vēlmes. Dati liecina, ka trauksme pārcelšanās laikā ir raksturīga lielākajam skaitam respondentu (96.3). Neizjust trauksmi ir drīzāk izņēmums. Līdz ar to viens no svarīgiem aspektiem pansionāta iedzīvotāju dzīves kvalitātes uzlabošanai, būtu sniegtais psiholoģiskais atbalsts pārcelšanās laikā, kā arī iepriekšējie preventīvie pasākumi pirms pārcelšanās (piem. vairākkārtējs pansionāta apmeklējums pirms pārcelšanās, informatīvie materiāli par pansionātu, jau esošo pansionāta iedzīvotāju apmeklējums, pārrunas ar sociālo darbinieku mājas apstākļos).

Miega kvalitāte bieži vien ir viens no piedzīvotā stresa sekām, tomēr pētījuma respondentu lielākā daļa (79.9 %) savu miega kvalitāti novērtē kā vidēju. Lielākā daļa respondentu (73.2 %) atzīmē, ka dzīvo pansionāta divvietīgajā vai trīsvietīgajā istabīnā, šie apstākļi varētu radīt arī nesaskaņas savstarpējās attiecībās, tomēr atbildot uz jautājumu par to, vai istabas biedra paradumi negatīvi ietekmē viņa labsajūtu, 73.1 % atbildēja noraidoši. Skaidrojot par vientulības izjūtas esamību, 72 % atzīmē ka nedaudz to izjūt un tikai 9 % to izjūt diezgan stipri. Neskatoties uz to, ka tā ir neliela respondentu daļa, tomēr sniedzot aprūpi, ir ļoti būtiski identificēt šos cilvēkus, novērtēt stāvokļa nopietnību un sniegt nepieciešamo psiholoģisko palīdzību. Vēl nopietnāka attieksme ir nepieciešama saistībā ar prevencijas pasākumiem tiem pansionāta iemītniekiem, kuriem šī vientulības izjūta jau ir.

Pētījuma ietvaros tika noskaidrots cik nozīmīgi ir atsevišķi dzīves kvalitāti ietekmējošie faktori. Iegūtie rezultāti liecina, ka ārkārtīgi nozīmīgi ir: vispirmām kārtām „justies droši, dzīvojot pansionātā”. Tas ir viens no rādītājiem, kas ir ļoti svarīgs un nemainīgs mainoties vecumam, ir drošības sajūta vietā kur dzīvo un tās apkārtnē, šis rādītājs vienlīdz svarīgs ir gan sievietēm, gan vīriešiem. Pētījumā, kas veikts Lielbritānijā, aptaujājot cilvēkus vecumā virs 65 gadu vecuma, dzīvojot dažādos apstākļos, tiek skaidroti dzīves kvalitātes aspekti. Respondenti ir iedzīvotāji, kas dzīvo gan privātmājās, sociālajās mājās un aprūpes centros. Svarīgākie no dzīves kvalitātes aspektiem visām iedzīvotāju grupām bija labas sociālās attiecības, palīdzība un atbalsts, spēja justies droši savā mājvietā un apkārtnē, spēja adaptēties un pielāgoties apstākļiem, komunikācija ar līdzcilvēkiem, kaimiņiem, istabas biedriem, iespēja saņemt pakalpojumus un brīvi piekļūt tiem. Par tikpat svarīgiem, dzīves kvalitāti ietekmējošiem faktoriem atzītas iespējas pilnveidoties un realizēt savus hobijus, brīvā laika aktivitātes (individuāli), kā arī, lai tiktu nodrošinātas sociālās aktivitātes, kas ļauj saglabāt lomu apkārtējā sabiedrībā, pozitīvi psiholoģiskās perspektīvas un apstākļu pieņemšana, ko nav iespējams ietekmēt un mainīt, spēja saglabāt labu veselību un mobilitāti, pietiekami finansiālie apstākļi, spēja apmierināt pamatvajadzības un kontrolēt savu dzīvi. Lai veicinātu vecu cilvēku dzīves kvalitāti nepietiek tikai ar viena faktora uzlabošanu, jo tas neuzlabos dzīves kvalitāti kopumā

(Zahava & Bowling, 2004). Otrkārt, „socializēties ar pansionāta iedzīvotājiem” un, treškārt, tā ir veselība. Savukārt kā ļoti svarīgi faktori tika novērtēti: „justies iederīgam vidē, kurā dzīvo”, „pavadīt laiku kopā ar ģimeni un draugiem”, „būt noderīgam sabiedrībā”.

Izvērtējot dažādu izjūtu esamību pansionāta iedzīvotāju vidū, tika iegūti dati, kuri liecina ka, dažreiz jūtas: zaudējuši kontroli pār savu dzīvi (59.6 %), nošķirti no ārpusaules (46.2 %); savukārt bieži jūtas bezspēcīgi ietekmēt notiekošo (46.20 %), ierobežoti darīt ko vēlas (65.7 %). Pozitīvi jāvērtē rezultāti, ka 59.7 % respondentiem ļoti reti ir sajūta „zaudējis kontaktu ar ģimeni, draugiem un radiem” un 52.2 % sajūta „ka zaudējis neatkarību” (skat. 1. tabula).

1.tab. Respondentu izjūtas, atrodoties pansionātā
Table 1 The feelings of the respondents in the nursing home

	Vienmēr (%)	Bieži (%)	Dažreiz (%)	Reti (%)	Ļoti reti (%)
Iederīgs/-a sabiedrībā	6,7	6	30,6	50	6,7
Ierobežots/-a (nevaru darīt, ko vēlos)	17,8	7,5	8,2	65	1,5
Bezspēcīgs/-a (nevaru ietekmēt notiekošo)	23,9	2,2	28,4	45,5	0
Nošķirts/-a no ārpusaules	34,3	16,4	46,3	3	0
Zaudējis kontroli pār savu dzīvi	27,6	6	59	6,7	0,7
Zaudējis neatkarību	26,9	52,2	9	10,4	1,5
Zaudējis kontaktu ar ģimeni, draugiem, radiem	59,7	14,9	3,8	10,4	11,2

Kopumā izlases respondentu rezultāti pēc dzīves kvalitātes indeksa raksturo situāciju kā labu, jo 61 % respondentu ir adekvāta dzīves kvalitāte (-1.0 līdz 2.99), 25 % ir laba dzīves kvalitāte (3.0 līdz 5.99), bet 13 % šis rādītājs ir ideāls (6.0 līdz 10.00). Tomēr rezultāti arī parāda to, ka lielākajam respondentu skaitam vairākās dzīves jomās ir nepieciešami uzlabojumi, ko paredz šī rādītāja interpretācija. Vidējais izlases Dzīves kvalitātes rādītājs ir $M=3.21$, $S=1.86$. Rezultātu amplitūda $R=7$ (minimālā vērtība ir -0.14, maksimālā 6.88). Aprēķinot Spīrmena korelācijas koeficientu, netika atrastas statistiski nozīmīgas korelācijas starp Dzīves kvalitātes rādītājiem un vecumu, dzimumu, bet tomēr statistiski nozīmīga, negatīva korelācija ir starp vecumu un adaptācijas laiku pansionātā ($r = -0.21$).

Secinājumi **Conclusions**

Dzīves kvalitātes novērtējums Latvijas pansionātu iemītnieku vidū ir labā līmenī, tomēr jāņem vērā arī to, ka nelielai daļai respondentu ir nepieciešami dzīves kvalitātes uzlabojumi dažādās dzīves jomās un aspektos, novēršot stresoru ietekmi. Dzīves kvalitāti ietekmē daudz un dažādi faktori, kas mainās, mainoties arī cilvēka vecumam. Kā nozīmīgākos no ietekmējošiem faktoriem var minēt adaptācijas periodu, drošības sajūtu, piederības/ iederības sajūtu, veselības stāvokli, spēju kontrolēt savu dzīvi u.c. Pastāv statistiski nozīmīga korelācija starp vecumu un adaptācijas laiku pansionātā – pieaugot vecumam, adaptācijas laiks pansionātā palielinās.

Līdz ar vecumu vai dzīvi pansionātā, prasības un vēlme dzīvot pilnvērtīgi nesamazinās. Līdz ar pārcelšanos uz pansionātu, lielākā daļa izjūt trauksmi. Līdz ar to viens no svarīgiem aspektiem pansionāta iedzīvotāju dzīves kvalitātes uzlabošanai, būtu sniegtais psiholoģiskais atbalsts pārcelšanās laikā, kā arī iepriekš veiktie preventīvie pasākumi pirms pārcelšanās.

Neraugoties uz to, ka pansionātu iedzīvotāji jūtas iederīgi sabiedrībā, nejūtas zaudējuši neatkarību un kontaktu ar piederīgiem, pansionātu vadībai būtu papildus jāizvērtē, kādi cēloni ir sekojošām respondentu jūtām: jūtas ierobežoti un bezspēcīgi, nošķirti no ārpusaules un zaudējuši kontroli par savu dzīvi.

Summary

The developed countries have experienced an increase in life expectancy with an increase in standard of living; as a result, the number of elderly people also has been increasing. Good mental and physical abilities, quality of life and satisfaction with life are the prerequisites for the health of elderly people.

Nowadays the quality of life is no longer a simple set of social indicators, but a complex concept that involves interaction between existing “objective” and “subjective” indicators in different areas of life. Many things change when a person gets older, they may become lonely both physically and psychologically. The amount of their social contacts diminishes and their quality decreases. (Social Assistance Foundation, 2003).

For various reasons or due to various circumstances ageing people increasingly choose or are forced to stay in nursing homes. The change of the place of residence is one of the most common factors that has a significant impact on the quality of life of the elderly. As in any period of life but especially in old age, a person is scared of everything new and unknown, and this fear is a defensive response to the process of change. A person is often not ready for such a change. It is often necessary to change the place of residence and move to nursing homes in situations when it is impossible to provide care and adapt the environment to the needs of the elderly, or if an elderly person feels lonely. The change is often accompanied by stress and depression, and anxiety that may worsen the physical and psychological state of health. Any changes need to be agreed as much as possible with the wishes of the elderly person and their individuality has to be respected (Lasmane, 2005).

In this study, we used a quantitative research method with the help of two tools: a sociodemographic analysis, a stress factor questionnaire and a questionnaire on the “Quality of life profile” (Brown, Raphael, & Renwick 1996). The study provides information on life quality indicators and their correlation with the existing stressors for 134 residents of four nursing homes in different regions of Latvia.

The obtained data show that most respondents (59 %) started their life in a nursing home on the referral of the social service and one in five on the wish of their own or of their family members. During resettlement the majority of respondents (96.3 %) feel anxiety. Therefore one of the most important aspects of improving the quality of life of the inhabitants of the nursing home would be provision of psychological support during resettlement, as well as the preventive measures prior to resettlement (for example, multiple visits to the nursing home, informative material about the nursing home, visits to the residents of the nursing home, discussions with a social worker at home).

Studying the feeling of loneliness, 72 % of the respondents mention that they feel it a bit, and only 9 % mention that they feel it quite deeply. Despite the fact that a small part of the respondents feel loneliness, it is very important to identify these people while providing care, to assess the severity of the situation and provide the necessary psychological assistance. Even more serious attitude is needed in relation to preventive measures for those residents of nursing homes who already experience such sense of loneliness.

It was found out that the most important aspects of the quality of life for the seniors of nursing homes are the following: “feeling safe while living in a nursing home, socialization with other residents of the nursing home, feeling fit and suitable in the environment they live, spending time with their family and friends, being useful to the society and being healthy”.

Data obtained during the study about the negative feelings of the seniors in the nursing home are very important. Although such feelings were expressed only occasionally, they indicate to certain problems, such as: feeling of having lost control of their lives (59.6 %), feeling separated from the outside world (46.2 %), feeling powerless to affect events (46.27 %) and feeling restricted to do what they wish (65.7 %). The nursing home management should additionally assess the existence of these feelings and take the necessary action to reduce or eliminate them. The fact that 59.7 % of the respondents mentioned that they very seldom experience the feeling that they have lost contact with their family and relatives and 52.2 % said that they very seldom experience the feeling of loss of independence should be marked as a positive result.

Overall results of the sample respondents according to the quality of life indicator describe the situation as good, because 61 % of the respondents have an adequate quality of life (-1.0 to 2.99), 25 % have a good quality of life (3.0 to 5.99), but for 13 % of the respondents this indicator shows an ideal quality of life (6.0 to 10.00). However, the findings also indicate that improvements in several areas of life are needed for the majority of the respondents. The average quality score for the sample is $M=3.21$, $S=1.86$. There were no statistically significant correlations between the Quality of Life indicators and the age and gender, however, there is statistically significant negative correlation between the age and the adaptation period in the nursing home ($r = -0.21$). It suggests that the older a person is the longer is the adaptation period in the nursing home, which indicates to the need for organization of additional care measures.

Literatūra References

- European Commission. (2007). *Health and long-term care in the European Union. Special Eurobarometer 283/Wave 67.3 – TNS Opinion & Social*. Retrieved from http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_283_en.pdf
- Felce, D., & Perry, J. (1996). *Assessment of quality of life*, In: R. L. Schalock (ed), *Quality of Life: Volume I: Conceptualization and Measurement*. Washington, AAMR.: R. L. Schalock (ed).
- Hodgson, N., Freedman, V. A., Granger, D. A., et al. (2004). Relocation puts elderly nursing home residents at risk of stress, although the stress is short lived. *J Am Geriatr Soc* , 52: 1856–1862. Retrieved from <http://ebmh.bmj.com/content/8/2/49.full>.
- Lasmane, A. (2005). Kreativā adaptācija. *Žurnāls Psihologija mums*, 6, 26.
- Pearlman, A. R., & Uhlmann, R. F. (1998). Quality of Life in the Elderly: Comparisons Between Nursing Home and Community Residents. *Journal of Applied Gerontology* Volume: 7 issue: 3, 316-330. Retrieved from <http://jag.sagepub.com/content/7/3/316.abstract>.
- Renwick, R., & Myerscough, T. (2012). *Manual for the Quality of Life Profile Adult Version*. Toronto, *Quality of Life Research Unit*, University of Toronto.
- Rungule, R., Koroļeva, I., Mieriņa, I., et al. (2012). *Sabiedrības novecošana: sociālā aizsardzība, nevienlīdzība un darba tirgus riski*. Rīga: Latvijas Universitātes aģentūra, LU Filozofijas un socioloģijas institūts.
- Sociālās palīdzības fonds. (2003). *Institūcijām alternatīvas veco ļaužu aprūpes "Labās prakses rokasgrāmata*.
- Zahava, G., & Bowling, A. (2004). Quality of life from the perspectives of older people. *Ageing and Society*, 24 (5), 675 - 691. Retrieved from <http://discovery.ucl.ac.uk/1648/1/qualityoflife.pdf>.

TRAUKSMES UN DEPRESIJAS RĀDĪTĀJU NOTEIKŠANA BEZDARBNIEKIEM LATGALES REĢIONĀ

Anxiety and Depression Rates Among the Unemployed Citizens of Latgale Region

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Abstract. *Employment status can substantially influence emotional, social and financial welfare of an individual, protects an individual from obvious negative influence on a person's life quality. This is connected with a loss of work, instability and low income, as well as worsening of life quality. According to the gained data, unemployed people feel depression and anxiety symptoms very often and it is not paid enough attention to these symptoms. Taking into consideration the fact, that in Latgale region the level of unemployment is the highest one, it would be important to define the signs of depression and anxiety among the unemployed people. The second purpose of the research is to find out the connection between anxiety and depression indexes among the unemployed people and the duration of an unemployed person's status. 100 participants were involved in the research. To gain the data the quantitative method of research was used. The two types of instruments were used: Spielberg's self-assessment anxiety test and Beck depression scale. The connection between the duration of unemployed status and depression and anxiety symptoms was not verified.*

Keywords: *anxiety, Latgale region, depression, unemployed.*

Ievads

Introduction

Nodarbinātība vienmēr bijusi viena no valsts politikas prioritātēm, kas īpaši aktuāla brīvās tirgus ekonomikas valstīs. Mūsdienās bezdarbnieks ir persona (vecumā no 15 līdz 74 gadiem), kura ir vai nav reģistrēta Nodarbinātības valsts aģentūrā un kura atbilst šādiem nosacījumiem:

- nestrādā un neveic komercdarbību, kā arī neatrodas pilnā valsts apgādībā;
- pēdējo četru nedēļu laikā aktīvi meklē darbu;

- darba atrašanas gadījumā var nekavējoties, t. i., divu nedēļu laikā sākt strādāt.

Bezdarbnieku kategorijā iekļauj arī personas, kuras darbu jau ir atradušas un sāks strādāt triju mēnešu laikā (Centrālā statistikas pārvalde, 2016).

Latvijā uz 2017. gada 31. decembri reģistrēto bezdarbnieku skaits ekonomiski aktīvo iedzīvotāju kopskaitā bija 63 121 iedzīvotājs. Savukārt Latgales reģionā – 19 749 bezdarbnieki. Vislielākais bezdarbnieku īpatsvars Latvijā tika konstatēts Latgales reģionā – 15,8 % (Nodarbinātības valsts aģentūra, 2017).

Pasaules Veselības organizācijas dati liecina, ka nodarbinātības statuss var būtiski ietekmēt indivīda emocionālo, sociālo un finansiālo labklājību, kā arī atstāt izteikti negatīvu iespaidu uz personas dzīves kvalitāti. Bezdarbnieki ļoti bieži izjūt depresijas un trauksmes simptomus, taču tiem daudzreiz netiek pievērsta pietiekami liela uzmanība. Vairāku epidemioloģisko pētījumu rezultāti liecina, ka ilgstošs bezdarbs (vismaz gadu) palielina risku iegūt dažādus psihoemocionālus traucējumus. Visbiežāk sastopama ir depresija un trauksme (Stankunas, Kalediene, Starkuviene, & Kapustinskiene, 2006).

Ņemot vērā, ka Latgales reģionā ir viens no zemākajiem nodarbinātības rādītājiem Latvijā, šis pētījums ir ļoti aktuāls. Tā novitāte – bezdarbnieku psihoemocionālā stāvokļa noteikšana, analizējot trauksmes un depresijas simptomu izpausmi.

Pētījuma mērķi. Primārais mērķis – noteikt trauksmes un depresijas rādītājus bezdarbniekiem Latgales reģionā. Pētījuma sekundārais mērķis – noteikt trauksmes un depresijas rādītājus bezdarbniekiem Latgales reģionā saistībā ar bezdarbnieka statusa piešķiršanas ilgumu.

Pētījuma materiāls un metodes. Datu iegūšanai tika izmantota kvantitatīvā pētījuma metode (aptauja). Trauksmes rādītāju noteikšanai tika izmantots Spīlbergera tests (Spielberger et al., 1983). Testam ir divas daļas: pirmajā daļā tiek noteikti situatīvās trauksmes (T stāvokļa) rādītāji, otrajā daļā – trauksmainības (T iezīmes) kā noturīgas personības iezīmes rādītāji. Katru daļu veido 20 izteikumi, kas respondentam jānovērtē atbilstīgi četrpunktu skalai. Latviešu valodā šo izpētes instrumentu ir adaptējusi D. Škuškovnika 2004. gadā (Škuškovnika, 2004).

Lai noteiktu depresijas rādītājus, tika izmantota Beka depresijas skala (Beck Depression Inventory-II, BDI-II; Beck, Steer, & Brown, 1996). Latviešu valodā šo instrumentu adaptēja S. Voitkāne un S. Miezīte (Voitkāne, 2004). Beka depresijas skalu veido 21 apgalvojums. Skalā iekļautie apgalvojumi ir sadalīti četros intensitātes līmeņos. Pētījuma dalībnieki varēja izvēlēties to līmeni, kas vislabāk raksturoja respondenta izjūtas.

Pētījuma vajadzībām anketēšanā tika iekļauti arī sociāli demogrāfiski jautājumi: respondentu vecums, dzimums, izglītība, bezdarbnieka statusa ilgums.

Kvantitatīvā pētījuma rezultāti tika apkopoti un analizēti, izmantojot matemātiskās statistikas metodes:

- aprakstošās statistikas metodi (vidējie lielumi, procenti);
- korelāciju, lai noteiktu saistību starp diviem neatkarīgiem lielumiem (Pīrsona korelācijas koeficientu – mainīgie lielumi tika mērīti proporcionālajā skalā un atbilda normālajam sadalījumam).

Pētījumā tika izmantota šāda korelācijas koeficienta interpretācija: 0 – korelācija nepastāv, 0–0,2 – ļoti vāja korelācija, 0,2–0,5 – vāja korelācija, 0,5–0,7 – pastāv vidēja korelācija, 0,7–0,9 – ir augsta korelācija, 0,9–1,0 – pastāv ļoti augsta korelācija. Iegūto datu analīze tika veikta ar ticamību $p < 0,05$. Datu statistiskā apstrāde tika veikta, izmantojot IBM SPSS Statistics 20. programmu.

Pētījumā piedalījās 100 dalībnieku, kuri bija vecāki par 18 gadiem un kuri bija reģistrēti Valsts nodarbinātības aģentūrā Latgales reģionā. Lielākā daļa respondentu bija sievietes (75 %), savukārt vīriešu bija mazāk – 25 %. Vecāki par 50 gadiem bija 44 % pētījuma dalībnieku, bet vismazāk respondentu bija vecumā no 18 līdz 28 gadiem – 8 % aptaujāto. Ņemot vērā, ka dalībnieku skaits (100) un rezultātu izteiksme procentos ir matemātiski vienāda, turpmāk tekstā apkopotie rezultāti ir atspoguļoti tikai procentos.

Bezdarbības ietekme uz veselību *Unemployment Influencing Health*

Pasaules Veselības organizācijas sniegtajā definīcijā teikts, ka veselība ir pilnīga fiziskā, garīgā un sociālā labklājība, nevis tikai stāvoklis, kurā cilvēks nav slims vai viņam nav kāda patoloģija. Tāpēc arvien vairāk pasaulē tiek pētītas cēloņsakarības starp sociālekonomiskajiem faktoriem un veselību. Saistību starp bezdarbu un veselību var skaidrot, balstoties uz diviem modeļiem:

- bezdarbs ir slikta veselība stāvokļa sekas;
- bezdarbs ir riska vai provocējošs faktors, lai pasliktinātos veselības stāvoklis (piemēram, ilgstošs bezdarbs aktualizē finanšu problēmu, kas savukārt korelē ar veselības aprūpes pakalpojumu samazinātu pieejamību).

Pētījumu rezultāti liecina, ka bezdarbnieku mirstības rādītāji ir 1,6 reizes lielāki nekā tiem cilvēkiem, kuriem ir patstāvīgs darbs. To pierādīja arī 2013. gadā publicētā pētījuma dati, kas liecina, ka personām, kurām ilgstoši ir bezdarbnieku statuss, mirstības līmenis ir par 43 % augstāks, nekā tiem cilvēkiem, kuriem ir patstāvīgs darbs. Bezdarbs palielina ne tikai sirds un asinsvadu saslimstības risku, bet arī veicina psihoemocionālo traucējumu iegūšanu. (Ludāne, 2013).

Vairāku pētījumu rezultāti ir pierādījuši, ka depresijas specifiskie simptomi bezdarbniekiem sastopami biežāk nekā patstāvīgi strādājošiem cilvēkiem. Ķīnā veiktā pētījuma rezultāti liecina, ka par spīti ekonomikas straujajai attīstībai arvien vairāk palielinās bezdarbnieku skaits (no 6,9 % līdz 11 %), veicinot arī psihoemocionālās veselības pasliktināšanos lielākam skaitam cilvēku. Šā pētījuma autoru mērķis bija izpētīt saistību starp bezdarbu un garīgās veselības traucējumiem. Lai sasniegtu izvirzīto pētījuma mērķi, tika izmantota CESD skala (Epidemiologic studies depression scale). Šā pētījuma rezultāti ļāva secināt, ka 67 % pētījuma dalībnieku tika konstatēti depresijas simptomi. Salīdzinot ar līdzīgiem pētījumiem Japānā un Korejā, Ķīnā depresijas sastopamība šajā sabiedrības grupā bija divas reizes lielāka. Pētījuma autori arī secināja, ka personām, kuras ilgstoši ir bezdarbnieki, biežāk sastopamas šādas negatīvas izpausmes: alkoholisms, psihozes, pašnāvības mēģinājumi, kā arī sirds un asinsvadu saslimšanas. Tāpat tika konstatēta pozitīva korelācija starp ilgstošu bezdarbu un onkoloģiskajām saslimšanām (Yang, Wu, Wang, & Wang, 2014).

Turpretī M. Ludānes (Ludāne, 2013) promocijas darba rezultāti liecina, ka depresijas simptomu attīstība nav atkarīga tikai no bezdarbnieka statusa laika, t. i., cik ilgi cilvēks ir bez darba. Pētījuma autore min arī citus bezdarbniekiem raksturīgus un depresijas attīstību ietekmējošos faktoros, t. sk. apkārtējo vidi (ģimeni, tradīcijas), kā arī paša cilvēka personības īpatnības. Savukārt ASV publicētajā pētījumā (Mossakowski, 2009) par depresijas simptomu attīstību sievietēm, kuras ir zaudējušas darbu, teikts, ka bezdarbs galvenokārt ietekmē ekonomisko komponenti. Tika konstatēta pozitīva korelācija ar augstu ticamības līmeni starp depresijas simptomu attīstību un sieviešu ilgstošu atrašanos bezdarbnieces statusā.

Ekonomiskās krīzes ietekme uz iedzīvotājiem tika novērota ne tikai Latvijā, bet arī citās valstīs. 2014. gadā tika publicēts pētījums (Zagoždžon, 2014), kuru veica, lai Polijas iedzīvotājiem – un atsevišķi bezdarbniekiem – noskaidrotu kardiovaskulāro saslimšanu riska faktoros un depresijas simptomus. Kopumā pētījumā piedalījās 3052 bezdarbnieki un 2059 nodarbinātie. Pētījumā tika novērtēts arī respondentu veselības stāvoklis: vitalitātes rādītāji, ķermeņa masas indekss, kā arī apkopota informācija par kaitīgiem ieradumiem. Tika novērtēti arī depresijas simptomi, un ņemti vērā respondentu demogrāfiskie dati: vecums, dzimums, izglītības līmenis un nodarbinātība. Pētījuma rezultāti liecināja, ka smēķētāji biežāk kļūst par bezdarbniekiem. Tika atrasta arī saistība starp bezdarbu un garīgās veselības traucējumiem. Jāatzīmē, ka pētījuma autori atrada pozitīvu korelāciju starp hipertensijas attīstību un bezdarbnieka statusu. Tas nozīmē, ka sirds un asinsvadu saslimšanu un garīgās veselības traucējumu riska faktori biežāk ir sastopami personām, kas ir bezdarbnieki. Tātad var secināt, ka bezdarbnieka statuss ne tikai rada ekonomiska rakstura problēmas, bet arī tieši ietekmē personas veselības stāvokli.

Trauksmes un depresijas pazīmju būtība *Essence of Anxiety and depression Signs*

Trauksme tiek definēta kā neskaidrs, nepatīkams emocionāls stāvoklis, kura galvenās pazīmes ir bažīgums, bailes, stress, nemiers un satraukums. Trauksme izpaužas gan psiholoģiski, gan arī somatiski (ar kuņģa un zarnu trakta darbības traucējumiem, galvassāpēm, miega traucējumiem). Bieži vien cilvēkiem ar paaugstinātu trauksmainību (taču viņi to neatzīst) trauksme var izpausties tieši somatisku simptomu veidā. Jo augstāka ir cilvēka vispārējā trauksme un nedrošības sajūta, jo vairāk būs arī konkrētu baiļu, kā arī trauksmes izpausmju un simptomu gan psiholoģiski, gan fiziski. Trauksme ir nepatīkams emocionāls stāvoklis, ko var salīdzināt ar baiļu koncepciju, ko savulaik formulēja Darvins un Freids. Trauksmes stāvokļi sastāv no apzināti uztvertām sajūtām: spriedzes, bažām, nervozitātes, raizēm, ar autonomo nervu sistēmu saistītu aktivāciju (Circenis, 2013).

Trauksmainam indivīdam raksturīga paaugstināta uzmanība uz potenciālu apdraudējumu (*attentional bias*), un viņam ir nosliece interpretēt emocionālos stimulus kā iespējamo apdraudējumu (*interpretantional bias*). Kopumā cilvēkam trauksmes stāvoklī ir grūtāk koncentrēties, lai izpildītu uzdevumu, efektīvi un mērķtiecīgi veiktu darbību un apstrādātu informāciju, kas savukārt tikai veicinās izpildes traucējumus (Šmite & Ancāne, 2014).

Pasaules Veselības organizācijas definīcijā depresija raksturota kā viena no psihiskām saslimšanām, kas izraisa psihisko procesu traucējumus: nomāktu garastāvokli, domāšanas procesu traucējumus, koncentrācijas zudumu un ēšanas traucējumus. Depresijas papildu simptomi var būt šādi: pašapsūdzības domas, neadekvāta vainas sajūta, pazemināts pašnovērtējums, domas par pašnāvību vai uzvedība, kas vērsta uz to, grūtības plānot vai koncentrēties, psihomotoriskās aktivitātes traucējumi, dažādi miega traucējumi un slikta apetīte.

Literatūrā plaši tiek aprakstītas teorijas par cēloņsakarību starp depresiju un pašnāvības risku. Psihoterapeitu asociācija ir diferencējusi pazīmes, kas var liecināt par augstu pašnāvības risku pacientiem, kuri sirgst ar depresiju: ilgstoša fiziska vai psihiska slimība, atkarība no alkohola vai citām vielām (Tērauds, Andrēziņa, Kupča, & Ancāne, 2009).

Depresijas un trauksmes plašai izplatībai ir arī ekonomiska rakstura sekas. Pētījumu rezultāti liecina, ka šie garīgie traucējumi Eiropas Savienības valstīm izmaksā līdz pat 170 miljardus eiro (The European Mental Health Action Plan, 2013).

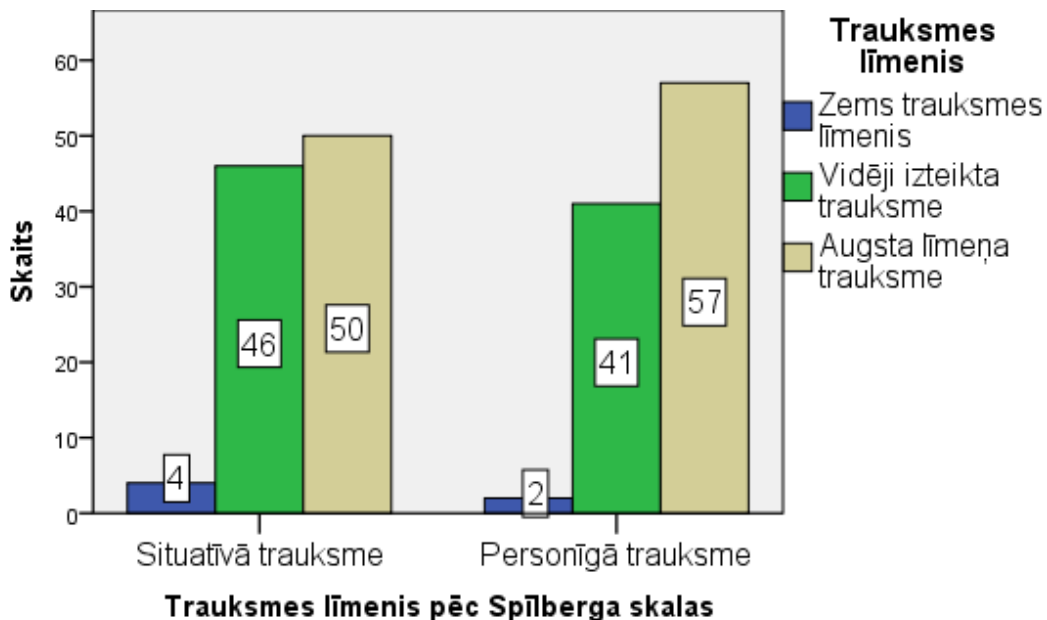
Pētījuma rezultāti Results of research

Pētījuma aptaujā piedalījās respondenti ar dažādu izglītības līmeni: visvairāk bija dalībnieku ar vidējo speciālo izglītību (45 %), savukārt 35 % respondentu bija augstākā izglītība un 20 % – vispārējā vidējā izglītība. Iegūtie rezultāti liecina, ka vecākiem cilvēkiem ir grūti iekļauties pašreizējā darba tirgū, un to var izskaidrot ar vairākiem faktoriem: modernajām tehnoloģijām un aktuālajam pieprasījumam atbilstīgu zināšanu un prasmju trūkumu, jaunu profesiju rašanos un citu izzušanu. Rezultātā cilvēks nespēj turpināt strādāt savā profesijā un saskaras ar pārkvalificēšanās grūtībām. Vienlaikus nelielo jaunu cilvēku īpatsvaru bezdarbnieku pulkā var izskaidrot ar to, ka viņu prasmes un kvalifikācija ir maz pieprasītas darba tirgū.

Vērtējot pētījumā iekļauto dalībnieku bezdarbnieka statusu ilgumu, jāatzīmē, ka aptaujāto lielākajai daļai šāds statuss tika piešķirts vairāk nekā pirms deviņiem mēnešiem – 54 % cilvēku. Savukārt 25 % aptaujāto bezdarbnieku statusa ilgums bija no sešiem līdz deviņiem mēnešiem. Mazāk bija to, kuri kā bezdarbnieki reģistrēti trīs līdz sešus mēnešus ilgi (12 %), un to cilvēku, kuriem bezdarbnieka statuss ilga līdz trim mēnešiem.

Aptaujas rezultāti pēc Spīlberģera trauksmes testa

Pēc Spīlberģera trauksmes skalas iegūtie aptaujas dati tika analizēti pa daļām. Tas tika darīts tādēļ, ka skala ietver divus vērtējumus – situatīvo trauksmes vērtējumu un personīgo trauksmes vērtējumu (sk. 1. att.).



1.att. Trauksmes līmeņa pašvērtējums pēc Spīlberģera skalas

Figure 1. Self-assessment of anxiety level according to Spielberger scale

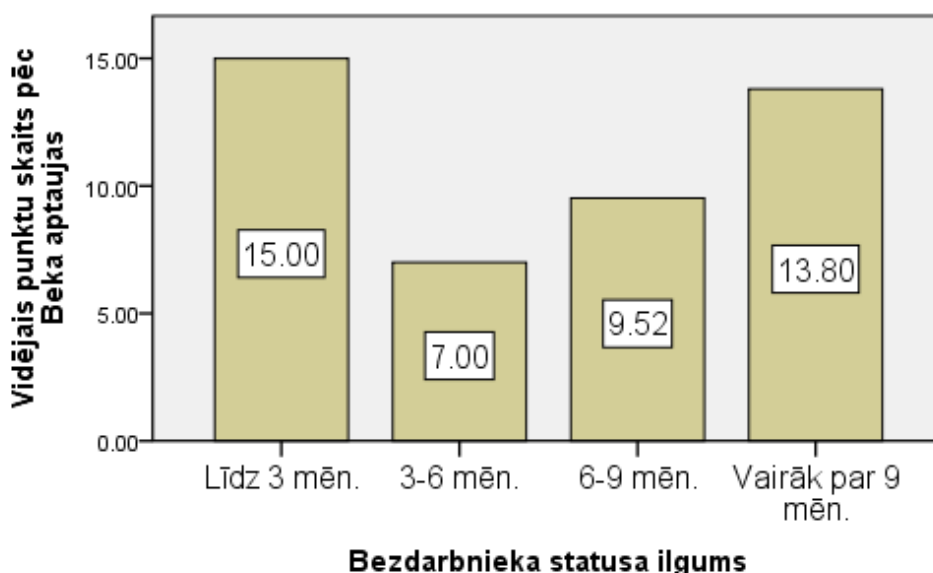
Situatīvais trauksmes vērtējums. Pētījuma dalībnieku vidū vidējais iegūto punktu skaits bija $46,47 \pm 9,4$ standartnovirze (SN). Minimālais punktu skaits bija 23, savukārt maksimālais vērtējums sasniedza 68. Pusei pētījuma dalībnieku (50 %) situatīvās trauksmes rādītāji bija augsti, mazāk nekā pusei (46 %) – tie bija vidēji, un tikai 4 % respondentu trauksmes līmenis bija zems.

Personīgās trauksmes vērtējums. Līdzīgi kā situatīvās trauksmes vērtējumā, arī personīgās trauksmes vidējais rādītājs bija 48 ± 9 SN. Minimālais punktu skaits bija 24, savukārt augstākais rādītājs sasniedza 74.

Aptaujas rezultāti pēc Beka depresijas skalas

Pēc apkopotajiem datiem Beka depresijas skalas vidējie rādītāji bija $12,02 \pm 8,8$ SN. Respondentu minimālais iegūto punktu skaits bija 0, maksimālais – 33.

Depresijas pazīmes netika konstatētas 47 % pētījuma dalībnieku, 31 % bija vieglas depresijas iezīmes, 16 % – vidēji smagas depresijas pazīmes un vēl 6 % respondentu atbildes liecināja, ka viņiem ir smagas depresijas pazīmes. Svarīgi pieminēt, ka neviens pētījuma dalībnieks, jautāts par pašnāvību, neatzīmēja, ka izdarītu pašnāvību, taču viens respondents atbildēja, ka gribētu sevi nogalināt. Par savu nākotni raizējās 58 % dalībnieku, un 46 % atbildēja, ka viņus vairs neiepriecina tas, kas iepriecināja agrāk. Vienlaikus 47 % izjuta vainas sajūtu, taču 59 % nejutās, ka tiek sodīti par kādu notikumu. Jāuzsver, ka lielākā daļa pētījuma dalībnieku nejutās vīlušies sevī (73 %), nebija zaudējuši interesi par citiem cilvēkiem (69 %), neuzskatīja, ka izskatās sliktāk (67 %), un 74 % uzskatīja, ka var strādāt tikpat labi kā agrāk. Tāpat lielai daļai respondentu nebija miega traucējumu (46 %) vai apetītes traucējumu (76 %).

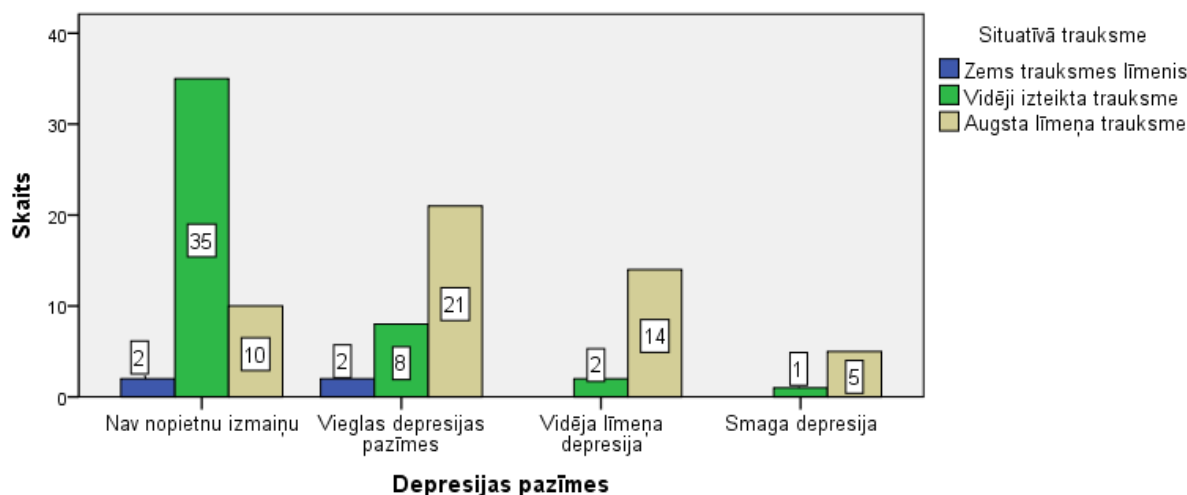


2.att. **Bezdarbnieka statusa ilgums un vidējais punktu skaits atbilstīgi Beka aptaujai**
 Figure 2. *Duration of an unemployed status and the average number of points according to Beck's survey*

Tomēr svarīgi ir aplūkot depresijas pazīmju izpausmi respondentiem atkarībā no bezdarbnieka statusa ilguma (sk. 2. att.). Visaugstākie depresijas pazīmju rādītāji bija cilvēkiem, kuriem bezdarbnieka statuss piešķirts nesen (vidēji – 15 punkti), un tiem, kuri bija bezdarbnieki ilgāk nekā deviņus mēnešus. Iegūtie rezultāti liecina par izteiktu psiholoģisko diskomfortu un emocionāliem pārdzīvojumiem, ar kuriem saskaras cilvēki, zaudējot darbu. Var pieļaut, ka tad, kad cilvēks pierod pie izmaiņām savā dzīvē, depresijas pazīmes kļūst mazāk izteiktas, taču pēc laika tās atkal sāk palielināties. Šādu parādību var izskaidrot ar pieaugošām raizēm par iespējām atrast jaunu darbu, pielāgoties citai videi, kā arī bažas var būt saistītas ar pabalstu izmaksas sistēmas īpatnībām.

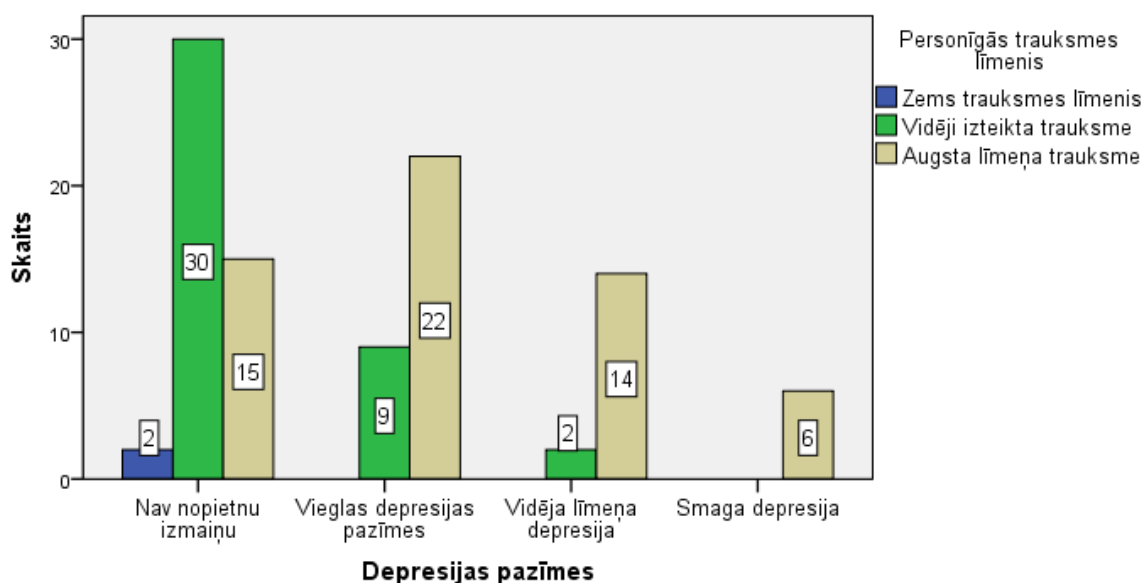
Depresijas pazīmju un trauksmes līmeņa korelāciju analīze

Apkopojot pētījuma rezultātus, tika noteikta korelācija starp trauksmes līmeni un depresijas pazīmju izpausmi respondentu vidū.



3.att. **Respondentu depresijas pazīmju izpausme atbilstīgi situatīvās trauksmes līmenim**
Figure 3. Signs of depression among respondents with different level of anxiety

Analizējot aptaujas rezultātus (sk. 3. att.), augsta līmeņa situatīvā trauksme un vieglas depresijas pazīmes tika konstatētas 21 % respondentu. Savukārt vidēja līmeņa depresijas pazīmes tika konstatētas 14 % respondentu ar augstu situatīvās trauksmes līmeni. Smagas depresijas pazīmes rādītāji piemita 5 % pētījuma dalībnieku. Depresijas pazīmes netika konstatētas 10 % respondentu ar augstu situatīvās trauksmes līmeni. Lietojot testu neparametriskajiem rādītājiem, tika atklāta statistiski ticama šāda sakarība: jo augstāks situatīvās trauksmes līmenis, jo izteiktākas ir depresijas pazīmes (korelācijas koeficients 0,504, $p = 0,001$).



4.att. Depresijas pazīmju izpausme respondentiem ar dažādu personīgās trauksmes līmeni

Figure 4. Signs of depression among respondents with different level of personal anxiety

Pētījuma rezultāti liecina (sk. 4. att.), ka lielai respondentu daļai (22 %) bija augsts personīgās trauksmes līmenis un vieglas depresijas pazīmes. Vidēja līmeņa depresijas pazīmes ar augstu personīgo trauksmes līmeni tika konstatētas 14 % aptaujāto. Savukārt depresijas pazīmes netika konstatētas 15 % respondentu ar augstu personīgo trauksmes līmeni. Augsta līmeņa personīgā trauksme ar smagas depresijas pazīmēm tika konstatēta 6 % aptaujāto.

Lietojot testu neparametriskajiem rādītājiem, tika atklāta statistiski ticama šāda sakarība: jo augstāks personīgās trauksmes līmenis, jo izteiktākas ir depresijas pazīmes (korelācijas koeficients 0,548, $p = 0,001$).

Analizējot pētījuma rezultātus, tika konstatēts, ka respondentiem, kuriem netika konstatētas būtiskas depresijas pazīmes, trauksmes līmenis bija zemāks.

Secinājumi Conclusions

Pēc apkopotajiem datiem, var secināt, ka vairāk nekā pusei pētījumā iekļauto bezdarbnieku no Latgales reģiona tiek konstatētas depresijas pazīmes (57 %) un augsta līmeņa trauksme (57 %), kas, iespējams, ir saistītas ar zemu ienākumu līmeni un sociālās vides faktoriem.

Netika atklāta statistiski ticama sakarība starp bezdarbnieka statusa ilgumu un depresijas vai trauksmes simptomu izpausmi. Tomēr depresijas pazīmju izpausme bija lielāka tām personām, kurām bezdarbnieka statuss piešķirts nesen, t. i., laikā līdz trim mēnešiem (vidēji 15 punkti atbilstīgi Beka aptaujai), un tiem

bezdarbniekiem, kuriem šis statuss jau ilgst vairāk nekā deviņus mēnešus (vidēji 13 punkti atbilstīgi Beka aptaujai). To varētu izskaidrot ar psihoemocionāliem pārdzīvojumiem uzreiz pēc darba zaudēšanas un pieaugošu uztraukumu par iespēju atrast darbu, laikam ritot.

Summary

As the data of the World Health Organization testifies, an employment status can influence substantially an individual's emotional, social and financial welfare, defending of obvious negative influence on the quality of life of a person.

According to the generalized data, unemployed people very often feel depression and anxiety symptoms and sometimes these symptoms are not paid attention enough. Taking into consideration the fact, that in Latgale region the level of employment is one of the lowest ones the innovation of this research defines psycho-emotional condition of an unemployed individual, analyzing the signs of anxiety and depression symptoms.

To define signs of anxiety Spielberg test was used. To define depression signs Beck scale of depression was used. In the frames of the research survey the issues of social aspects and demography were included such as age, sex, level of education, duration of unemployed status of the respondents. A hundred of respondents who are over 18 and who are registered at State Employment agency in Latgale region were involved in the research. The quantitative results were generalized and analyzed using descriptive and correlative analysis.

The data show that more than the half of the unemployed people from Latgale region involved into the research have signs of depression and high level anxiety. The connection between the duration of unemployed status and depression and anxiety symptoms was not verified.

Literatūra References

- Circenis, K. (2013). *Praktizējošu māsu profesionālās dzīves kvalitātes psihosociālie aspekti un tos ietekmējošie faktori*. (Promocijas darbs). Rīgas Stradiņa universitāte, Rīga.
- Centrālā statistikas pārvalde. (2016). Darbaspēka apsekojuma galvenie rādītāji 2015. gadā. *Statistisko datu krājums*. Pieejams: http://www.csb.gov.lv/sites/default/files/nr_17_darbaspeka_apsekojuma_galvenie_raditaji_2015_gada_16_00_lv_en.pdf
- Ludāne, M. (2013). Predictors of Cognitive Appraisal of Job Loss among the Unemployed Aged over 45 Years. *Baltic Journal of Psychology*, 14, 53–66.
- Mossakowski, K. (2009). The Influence of Past Unemployment Duration on Symptoms of Depression Among Young Women and Men in the United States. *American Journal of Public Health*, 99, 1826–1832.
- Nodarbinātības valsts aģentūra. (2017). *Reģistrētais bezdarbnieku skaits, reģistrētā bezdarba līmenis 31.12.2017*. [07.01.2018.]. <http://www.nva.gov.lv>
- Nodarbinātības valsts aģentūra. (2017). *Reģistrētā bezdarba līmenis valstī 31.12.2017*. Pieejams: <http://www.nva.gov.lv>
- Stankunas, M., Kalediene, R., Starkuviene, S., & Kapustinskiene, V. (2006). Duration of unemployment and depression: Hamilton baseline score between categories of occupation cross-sectional survey in Lithuania. *BMC Public Health*, 6, 174.

- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). Manual for the State-Trait Anxiety Inventory. *Consulting Psychologists Press, Inc, Palo Alto, CA.*
- Škuškovnika, D. (2004). *Trauksme latviešiem un Latvijā dzīvojošiem krieviēm*. Promocijas darbs. Latvijas Universitāte, Rīga.
- Šmite, D., & Ancāne, G. (2014). Trauksmes līmeņa un muskuļu spēka testu rezultātu saistība somatiski veselīgiem indivīdiem. *Latvijas iedzīvotāju veselību apdraudošo eksogēno un endogēno faktoru izpēte*. Rīga, RSU Zinātniskās konferences tēzu krājums.
- Tērauds, E., Andrēziņa, R., Kupča, B., & Ancāne, G. (2009). Depresijas norise un ārstēšanas iespējās vadlīnijās, *LPA*. Pieejams: http://psihosomatika.lv/public/files/depresijas_vadl_2009.pdf
- Voitkāne, S. (2004). Pašcieņas, pašpaļāvības saistības ar psiholoģisko labklājību un depresiju studentēm studiju sākuma posmā. *Latvijas Universitātes raksti*, 682, 41–51.
- Zagożdżon, P., Parszuto, J., Wrotkowska, M., & Dydjow-Bendek, D. (2014). Effect of unemployment on cardiovascular risk factors and mental health. *Occupational Medicine*, 64, 436–441.
- World Health Organization. (2013). The European Mental Health Action Plan 2013–2020. Retrieved from: http://www.euro.who.int/__data/assets/pdf_file/0020/280604/WHO-Europe-Mental-Health-Acion-Plan-2013-2020.pdf?ua=1
- Yang, X., Wu, H., Wang, J., & Wang, L. (2014). The mediating role of self-efficacy in the relationship between Big five personality and depressive symptoms among Chinese unemployed population: a cross-sectional study. *BMC Psychiatry*, 14, 1–16.

A COMPARISON OF METHODS FOR CALCULATING LACTATE ANAEROBIC THRESHOLDS IN JUDO AND MIXED MARTIAL ARTS ATHLETES

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Abstract. *The study aimed to determine the differences between exercise intensities at the anaerobic threshold values (V_{AT}) calculated with methods of lactate curve analysis such as LT_{visual} , LT_{loglog} , $LT_{4.0}$, $LT_{\Delta 1}$, and LT_{D-max} , and to build regression equations that allow athletic training specialists to compare V_{AT} values obtained from LT_{visual} , LT_{loglog} , $LT_{\Delta 1}$, LT_{D-max} with that calculated with $LT_{4.0}$. The sample analysed during the study consisted of 19 judoka and 22 MMA practitioners in a preparation period for competition. Each of the two disciplines has its own hierarchy of V_{AT} values. The analysis aimed to determine the effect of the athletic discipline factor and of the method factor on V_{AT} values. Results: The coefficient of variation (CV) values obtained indicate that the effective exercise intensities have bigger variation in judoka aerobic endurance training. V_{AT} values assessed for judoka using different methods for analysing the blood lactate concentration curve are more consistent than in MMA competitors. Conclusions: Judo and MMA competitors have their specific hierarchies of running velocities at the anaerobic threshold, with both the athletic discipline factor and the method factor having an interaction effect on the V_{AT} level. V_{AT} levels assessed from the different methods used to analyse the blood lactate concentration curve are more consistent (ANOM) in judoka than in MMA practitioners.*

Keywords: *Aerobic Endurance, Exercise Intensity, Training Periodization.*

Introduction

Both mixed martial arts (MMA) and judo involve a synthesis of combat techniques performed while standing or on the ground. This results in many similarities between fights conducted according to judo rules and MMA rules, which come down to the repetition of actions involving different shares of static and dynamic work by competitors trying to apply effectively technical and tactical elements specific to their disciplines (Amtmann et al., 2008; Buse, 2006; Glinska-Wlaz, 2016). In stand-up fighting judoka usually use throws, while in

MMA punches, kicks and strangles prevail. As regards ground fighting in MMA, competitors using judo-like techniques (holds, joint manipulations, strangles) are also allowed to strike their opponents, which is prohibited in judo (Lachlan et al., 2013). When the movements are acyclic and the opponent is active, the athlete's is characterised by varying intensity. According to del Vecchio et al. (2011), the effort-pause ratio (between high-intensity effort and low-intensity effort plus pauses during round) is 1:2 to 1:4. This ratio, lying between ratios typical of judo, i.e. 1:1 to 1:6 (Franchini et al., 2011a) reflects the combination of ground and stand-up techniques. The typical time of a judo bout is about 3 to 4 minutes (Miarka et al., 2012) while most of the MMA matches that involve high-intensity actions predominantly executed during ground fighting end in the third round. A fight has 2 bouts 5 lasting minutes each, while a title fight goes on for 3 rounds. Both types of fight can be extended by another 3 minutes, with a 1-minute break between the rounds. Judo and MMA can be classified as sports involving high intensity, intermittent work. Although a fight in judo or MMA may be ended before its full time (the reasons for such a decision being illegal techniques in both judo and MMA, ippon in judo, and K.O. or T.K.O. in MMA), the probability of an MMA competitor having to work hard for 15 minutes plus the extra time is higher than in judo, where 8 minutes of maximal time including extra time is very rarely observed. A well-recognised time structure of athlete's effort might help select training means consistent with the requirements imposed by potential opponents and the nature of competition itself (Kim et al., 2011). Experts agree that fighting and training in both judo and MMA require comprehensive physical preparation utilizing aerobic and anaerobic metabolic changes that determine athlete's special endurance (Letensky & Harris, 2012). Such recommendations for anaerobic capacity were formulated to use high-intensity intervals for training of MMA athletes based around either the fitness of the athlete or the specificity of MMA rounds and rest periods, but not included any recommendation for aerobic training. The level of aerobic capacity is very important, for anaerobic substrates resynthesis especially between prolonged fights (Franchini et al., 2011a, Franchini et al., 2011b). The similarity of combat sports in terms of VO_2 max may be attributed to the non-specific character of this kind of capacity tests (Ahmaidi et al., 1999; Detanico et al., 2012). It can be concluded that the moment of reaching the anaerobic threshold (AT) and the duration of supra-threshold work rate are important indicators of endurance in combat sports. Exercising at work rates above the AT level improves volitional qualities in these athletes, including their resistance to fatigue. Athletes with higher aerobic power are probably able to perform supramaximal activities at a relatively lower intensity compared with those with lower aerobic power (Liparova & Brod'ani, 2016; Stupnicki et al., 2010). This would be even more important considering

the prolonged fights and rest between consecutive stages of tournament (Franchini et al., 2011a). As far as the improvement of aerobic endurance in combat sports athletes is concerned, the recommended group of training means has parameters set with respect to the anaerobic threshold (Sterkowicz et al., 2016). According to Jenkins (2005) "Lactate threshold (LT) is defined as the highest exercise intensity or level of oxygen uptake that is not associated with an elevation in blood lactate concentration. Two lactate thresholds have been distinguished. LT1 generally occurs between 40 and 60 % of maximal oxygen uptake. LT2 generally occurs between 80 and 95 % of maximal oxygen uptake. LT1 is sometimes equated with a blood lactate concentration of 2 mmol·l⁻¹. LT2 is sometimes equated with a blood lactate concentration of 4 mmol·l⁻¹. LT2 is also known as onset of blood lactic acid (OBLA). The higher values result from high volume, moderate load, short rest period sequences and circuit-type exercise sessions". Based on the duration of a fight, two research hypotheses were formulated: 1) the AT level is reached faster in judo than in MMA; 2) The diversity of methods used to calculate the AT implies different assessments of endurance used to programme endurance training. The study aimed to determine the differences between exercise intensities at the anaerobic threshold values (V_{AT}) calculated with methods of lactate curve analysis such as LT_{visual} , LT_{loglog} , $LT_{4.0}$, $LT_{\Delta 1}$, and LT_{D-max} , and to build regression equations that allow athletic training specialists to compare V_{AT} values obtained from LT_{visual} , LT_{loglog} , $LT_{\Delta 1}$, LT_{D-max} with that calculated with $LT_{4.0}$.

Material and methods

Participants. Group 1 – judo competitors (n=19) international and domestic sport level (the group consisted of judoka that had participated in the Olympic Games and World Championships), (mean \pm SD) age 21.8 (2.6) years, height 1.75 (0.03) m, body mass 69.4 (3.2) kg, maximal oxygen uptake 58.2 (3.2) ml·kg⁻¹·min⁻¹, length of training experience 11 (1.5) years. Group 2 – MMA competitors (n=22) international and domestic sport level, (mean \pm SD) age 27.5 (2.2) years, height 1.79 (0.3) m, body mass 83.1 (5.8) kg, maximal oxygen uptake 56.9 (5.4) ml·kg⁻¹·min⁻¹, length of training experience 8.6 (1.8) years]. The athletes in both groups were in a preparation period for competition. Five methods that are usually used in training practice to analyse the blood lactate concentration curve were selected for the research: LT_{loglog} (Beaver et al., 1985), LT_{visual} (Lundberg et al., 1986), $LT_{\Delta 1}$ (Coyle et al., 1983), $LT_{4.0}$ (Heck et al., 1985), LT_{D-max} (Cheng et al., 1992). The graded incremental exercise test (GXTs) used in the research meets the exercise intensity requirements of all the five methods (Bentley et al., 2007) as well as allowing the assessment of changes in aerobic endurance performance capacity in the subject. The testing

procedure required the subjects to exercise at progressively increasing intensity on the Saturn treadmill (HP Cosmos, Germany). The running speed being initially 8 km h⁻¹ was increased by 2 km h⁻¹ every 3 minutes, the treadmill incline was set at 1.0 % at all times (Jones & Doust, 2001). In the last 30 s of each exercise grade 20 µl of arterialized blood was sampled from the subject's earlobe to identify blood lactate concentration. Its level was calculated using reagents made by EKF Diagnostics (EKF, Germany) and a Biosen S-line lactate analyser (EKF Germany). Exercise intensity parameters at the lactate anaerobic threshold were determined using software for calculating blood lactate endurance markers. After being informed about the study and test procedures, and any possible risks and discomfort that might ensue, the subjects gave their written informed consent to participate in accordance with the Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. The research project was approved by the Bioethics Commission at the Local Medical Chamber in Krakow. All computations were performed with the Statgraphics Centurion package v. XVI.I. The normality of distribution (the Shapiro-Wilk test) and the homogeneity of variance between the different methods were controlled for all parameters. The differences between running velocities at the anaerobic threshold (V_{AT}) as obtained with the selected methods were compared using ANOVA, allowing for the athletic discipline factor (2 levels) and the method factor (5 levels). The significance of the differences between pairs of average velocities was assessed using the Tukey's multiple comparison test. A graphical analysis of means (ANOM) was additionally employed to compare average running velocities as yielded by each of the five methods with the grand mean, allowing for decision limits. The Pearson's correlation coefficient between running velocities V_{AT} was calculated. The V_{AT} value calculable with the $LT_{4.0}$ method was obtained from the regression equations. Statistical significance was accepted at $p < 0.05$.

Results

Differences between running velocities at the lactate threshold (LT) as determined from the five methods. The two-way ANOVA revealed significant interaction between both the factors ($F_{(4,204)}=2.43$, $p=0.049$), (Fig. 1). Both the athletic discipline factor ($F_{(1,204)}=13.69$, $p<0.001$) and the method factor ($F_{(4,204)}=7.72$, $p<0.001$) had effect on running velocity V_{AT} . The average V_{AT} as generated by the Tukey's test for judoka (12.7 km·h⁻¹) was significantly lower than that obtained for the MMA competitors (13.7 km·h⁻¹).

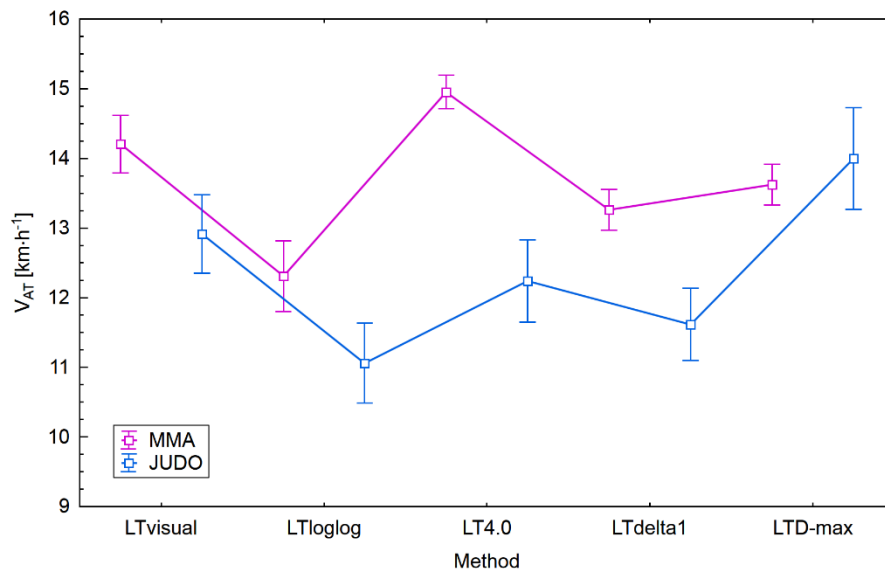


Figure 1. Interactions and 95 % CI Tukey HSD intervals of V_{AT} for the both judo and MMA groups

In the judo group, the LT_{D-max} method produced the highest V_{AT} values and LT_{loglog} the lowest (see Table 1). These athletes were characterised by considerably different running velocities at the anaerobic threshold V_{AT}. At the same time, the coefficient of variation (CV) of running velocity was similar across the V_{AT} calculation methods (see Table 1).

Table 1 V_{AT} values obtained for judoka by the type of method used to analyse the lactate concentration curve

Method of estimation AT	Running velocity at the lactate threshold (LT) [km·h ⁻¹]				
	Mean	±SD	min	max	CV%
LT _{visual}	12.91	2.47	9.47	19.99	19.09
LT _{loglog}	11.06	2.50	8.94	15.03	22.58
LT _{4.0}	12.24	2.58	9.59	15.86	21.08
LT _{Δ1}	11.62	2.26	8.09	14.62	19.49
LT _{D-max}	14.00	3.18	10.81	19.74	22.74

Note: SD = standard deviation; min-max = range; CV% = coefficient of variation

V_{AT} values in the judo group were significantly dependent on the testing method applied ($F_{(4,90)}=3.46$, $p=0.011$). In two of ten comparisons significant differences between athletes' running velocities at the anaerobic threshold were found (the Tukey's test): LT_{D-max} - LT_{loglog} and LT_{D-max} - LT_{Δ1}. An ANOM graph (Fig. 2) was additionally used to represent graphically average running velocities at the AT calculated with different methods. In this group of athletes,

average running velocity yielded by LT_{Dmax} was significantly different from the grand mean.

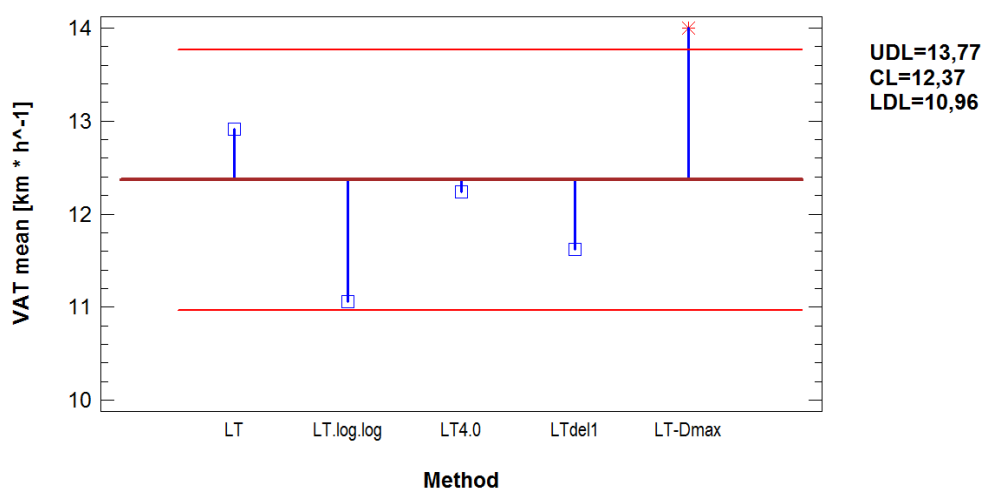


Figure 2. Analysis of means plot for the judo group with 95 % decision limits. Average V_{AT} attained by the judoka by the testing method
UDL = upper decision limit, CL = central line (grand mean), LDL = Lower decision limit.

In the MMA group, $LT_{4.0}$ yielded the highest V_{AT} and LT_{loglog} the lowest (see Table. 2). V_{AT} variation was the smallest for the $LT_{4.0}$ results and the greatest for the LT_{loglog} results.

Table 2 V_{AT} values obtained for MMA by the type of method used to analyse the lactate concentration curve

Method of estimation AT	Running velocity at the lactate threshold (LT) [km·h ⁻¹]				
	Mean	±SD	min	max	CV%
LT_{visual}	14.20	1.93	9.93	17.4	13.61
LT_{loglog}	12.31	2.37	9.03	19.1	19.28
$LT_{4.0}$	14.95	1.13	12.8	17.0	7.54
$LT_{\Delta 1}$	13.26	1.38	10.6	15.8	10.37
LT_{D-max}	13.63	1.37	11.3	15.9	10.03

Note: SD = standard deviation; min-max = range; CV% = coefficient of variation

Between the compared pairs of average running velocities at the lactate threshold (LT) obtained from the five methods three statistically significant differences ($F_{(4,105)}=7.55$, $p<0.001$) were found, which were subsequently verified using the Tukey's test: $LT_{loglog} - LT_{4.0}$, $LT_{visual} - LT_{loglog}$, and $LT_{4.0} - LT_{\Delta 1}$.

Running velocity at the V_{AT} level as obtained from the $LT_{4.0}$ method was significantly greater than the grand mean, while that generated by $LT_{\log\log}$ was lower (Fig. 3). Correlations between running velocities at the lactate threshold (LT) obtained from the five methods. In the judo group, three methods produced statistically significantly correlated V_{AT} values ($p \leq 0.001$). The $LT_{\log\log}$ results were highly correlated with $LT_{4.0}$ ($r=0.90$) and $LT_{\Delta 1}$ ($r=0.87$). The V_{AT} values obtained from the $LT_{4.0}$ and $LT_{\Delta 1}$ methods were also highly correlated (0.98).

In the MMA group, V_{AT} values obtained from all methods applied to analyse the blood lactate curve were statistically significantly correlated. Four moderate correlations were found between the values obtained from $LT_{\text{visual}} - L_{t4}$ (0.65, $p < 0.01$), $LT_{\text{visual}} - LT_{\Delta 1}$ (0.52, $p < 0.05$), $LT_{\log\log} - LT_{\Delta 1}$ (0.69, $p < 0.001$), and $LT_{\Delta 1} - LT_{D-\text{max}}$ (0.64, $p < 0.001$). Highly correlated results were obtained from $LT_{\text{visual}} - LT_{\log\log}$ (0.74, $p < 0.001$), $LT_{\text{visual}} - LT_{D-\text{max}}$ (0.87, $p < 0.001$), $LT_{\log\log} - LT_{4.0}$ (0.76, $p < 0.001$), $LT_{\log\log} - LT_{D-\text{max}}$ (0.75, $p < 0.001$), and $LT_{\Delta 1} - LT_{D-\text{max}}$ (0.80, $p < 0.001$). A very high correlation was found to exist between V_{AT} values generated by $LT_{4.0}$ and $LT_{\Delta 1}$ (0.91, $p < 0.001$).

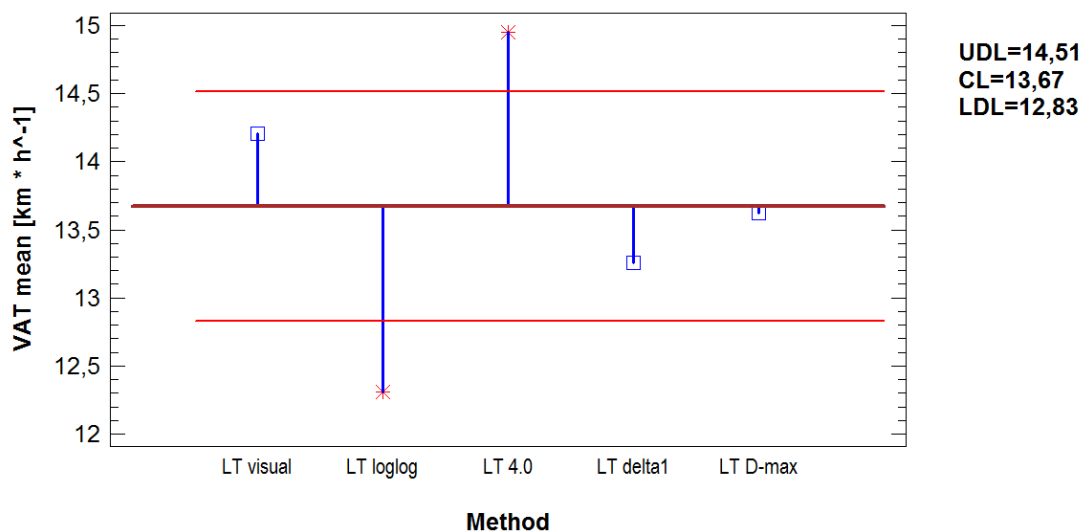


Figure 3. Analysis of means plot for the MMA group with 95 % decision limits. Average V_{AT} attained by the MMA competitors by the testing method. UDL = upper decision limit, CL = central line (grand mean), LDL = Lower decision limit

Discussion

The literature dealing with the setting of exercise intensity parameters for combat sports training lacks reports on how methods used to calculate an athlete's lactate threshold are related. As far other athletic disciplines are concerned, the comparative analyses of the methods used to find the lactate anaerobic threshold divide into two types. One is the comparative analyses of

parameter values of the lactate and ventilatory anaerobic thresholds (Cheng et al., 1992; Fabre et al., 2010; Stanula et al., 2013). The other type is studies investigating the parameters of the lactate anaerobic threshold and of maximal lactate steady state (MLSS) (Anuola & Rusko, 1992; Jones & Doust, 1996). The comparative studies conducted by Chwalbinska-Moneta et al. (1989) have demonstrated that compared with the LA_{4.0} method the IAT method (individual anaerobic threshold) produces lower power values at the anaerobic threshold. Comparative analyses of LA_{4.0} and LT_{visual} methods have revealed a similar relation between their threshold power values (Chwalbinska-Moneta et al., 1989). Being able to compare two values of the same parameter that has been determined by analysing changes in blood lactate concentration is vital for athletic training practice. The importance of the issue in triathlete training has been highlighted in the study by McGehee et al. (2005), showing the existence of considerable differences between V_{AT} and HR_{AT} values obtained from laboratory methods and from field methods. However, values produced by LA_{4.0}, LT_{visual}, LT_{D-max}, and LT_{Δ1} were not found to be significantly different. Davis et al. (2007) have found considerable similarity between V_{AT} values derived from the 0.5 mmol method and the LT_{loglog} method. Another study aimed to identify the LT by four different methods (LT_{visual}, LT_{loglog}, algorithmic adjustment and QLac) during resistance exercise (de Sousa et al., 2012). The LT_{visual}, algorithmic adjustment and LT_{loglog} methods detected the LT at the same intensity. The study conducted by de Sousa et al. (2012) has shown that for the non-athletes exercising on the ergometer power values at the AT level are not significantly different. The results of this study were used to build regression equations that make it possible to determine running velocity at the anaerobic lactate threshold calculable with the LT_{4.0} method using values obtained from LT_{visual}, LT_{loglog}, LT_{Δ1}, LT_{D-max} (see Table 3).

Table 3 Regression equations for determining running velocities at the lactate anaerobic threshold calculable with LT_{4.0} using the results of LT_{visual}, LT_{loglog}, LT_{Δ1}, and LT_{D-max}

Sports discipline	Regression equation	SEE
Judo	$y = 7.19 + 0.431 \cdot \text{LT}_{\text{visual}}$	1.12
Judo	$y = 1.94 + 0.931 \cdot \text{LT}_{\text{loglog}}$	1.15
Judo	$y = -0.658 + 1.11 \cdot \text{LT}_{\Delta 1}$	0.634
MMA	$y = 9.54 + 0.381 \cdot \text{LT}_{\text{visual}}$	0.873
MMA	$y = 10.6 + 0.357 \cdot \text{LT}_{\text{loglog}}$	0.761
MMA	$y = 5.49 + 0.714 \cdot \text{LT}_{\Delta 1}$	0.566
MMA	$y = 5.84 + 0.669 \cdot \text{LT}_{\text{D-max}}$	0.674

Note: SEE = Standard Error of the Estimate

Conclusion

The regression equations allow athletic training specialists to use the above methods for predicting exercise intensity at the lactate anaerobic threshold calculable with $LT_{4.0}$. This possibility is an important element in the planning of training activities because it allows the specialists to have a standard description of the training programme, as well as making it less probable for training intensity to be too high or too low. Only in the judo group V_{AT} calculable with $LT_{4.0}$ is difficult to predict using the LT_{D-max} results. The level of endurance expected of an athlete depends on the sport-specific requirements, such as the time structure of a fight, the nature of the effort and opponent's activity. These factors suggest that MMA demands more endurance on the competitors than judo. However, the available research reports fail to provide enough information that might be needed to fully answer the question about whether MMA athletes should have more endurance than athletes practising other combat sports. The question about which combat style originally practised by MMA athletes is best at building their endurance, thus allowing them to take up specialisation in mixed martial arts, has not been answered either. This study and the comparisons of V_{AT} values calculated for judoka and MMA competitors indicates that the levels of aerobic endurance are higher in the latter group. From the perspective of athletic training practice, the proposed regression equations are valuable tools for trainers. V_{AT} values show what intensity range a given training means should have to effectively increase athlete's ability to perform work involving high mobilization of aerobic metabolism with a growing proportion of anaerobic metabolism. Being able to calculate the exact exercise intensities at the V_{AT} allows developing very effective plans for the type of training loads that are crucial for physical preparation in combat sports. The concept proposed in this study makes it possible to utilize different analytical methods which are employed to analyse the blood lactate concentration curve to predict V_{AT} values calculable with $LT_{4.0}$. V_{AT} estimation accuracy within $1 \text{ km}\cdot\text{h}^{-1}$ is fully acceptable as far as the practical needs of combat sports training are concerned and does not entail the overlapping of training intensity ranges.

References

- Ahmaidi, S., Portero, P., Calmet, M., Lantz, D., Vat, W., & Libert, J. (1999). Oxygen uptake and cardiorespiratory responses during selected fighting techniques in judo and kendo. *Sports Medicine, Training and Rehabilitation*, 9 (2), 129-139.
- Amtmann, J., Amtmann, K., & Spath, W. (2008). Lactate and rate of perceived exertion responses of athletes training for and competing in a mixed martial arts event. *J Strength Cond Res*, 22 (2), 645-647.

- Aunola, S., & Rusko, H. (1992). Does anaerobic threshold correlate with maximal lactate steady-state? *J Sports Sci*, 10 (4), 309-323.
- Beaver, W., Wasserman, K., & Whipp, B. (1985). Improved detection of lactate threshold during exercise using a log-log transformation. *J Appl Physiol*, 59 (6), 1936-1940.
- Bentley, D., McNaughton, L., Roberts, S., Vleck, V., Fairbanks, L., & Marinaki, T. (2007). Lactate threshold does not influence metabolic responses during exercise in cyclists. *Int J Sports Med*, 28 (6), 506-512.
- Buse, G. (2006). No holds barred sport fighting: a 10 year review of mixed martial arts competition. *Br J Sports Med*, 40 (2), 169-172.
- Cheng, B., Kuipers, H., Snyder, A., Keizer, H., Jeukendrup, A., & Hesselink, M. (1992). A new approach for the determination of ventilatory and lactate thresholds. *Int J Sports Med*, 13 (7), 518-522.
- Chwalbinska-Moneta, J., Robergs, R., Costill, D., & Fink, W. (1998). Threshold for muscle lactate accumulation during progressive exercise. *J Appl Physiol.*, 66 (6), 2710-2716.
- Coyle, E., Martin, W., & Ehsani, A. (1983). Blood lactate threshold in some well-trained ischemic heart disease patients. *J Appl Physiol Respir Environ Exerc Physiol.*, 54 (1), 18-23.
- Davis, J., Rozenek, R., DeCicco, D., Carizzi, M., & Pham, P. (2007). Comparison of three methods for detection of the lactate threshold. *Clin Physiol Funct Imaging.*, 27 (6), 381-384.
- Detanico, D., Dal Pupo, J., Franchini, E., & Giovana dos Santos, S. (2012). Relationship of aerobic and neuromuscular indexes with specific actions in judo. *Science & Sports*, 27 (1), 16-22.
- Fabre, N., Balestreri, F., Pellegrini, B., & Schena, F. (2010). The modified Dmax method is reliable to predict the second ventilatory threshold in elite cross-country skiers. *J Strength Cond Res.*, 24 (6), 1546-1552.
- Franchini, E., Del Vecchio, F., Matsushigue, K., & Artioli G. (2011a). Physiological profiles of elite judo athletes. *Sports Med.*, 41 (2), 147-166.
- Franchini, E., Sterkowicz, S., Szmatlan-Gabrys, U., Gabrys, T., & Garnys, M. (2011b). Energy system contributions to the special judo fitness test. *Int J Sports Physiol Perform.*, 6 (3), 334-43.
- Glinska-Wlaz, J. (2016). Championships of the Polish Uniformed Services in MMA in years 2013–2015 *Physical Activity Review*, 4, 163-171
- Heck, H., Mader, A., Hess, G., Mücke, S., Müller, R., & Hollmann, W. (1985). Justification of the 4-mmol/l lactate threshold. *Int J Sports Med.*, 6 (3), 117-130.
- Jenkins, S. (2005). *Sports Science Handbook: The Essential Guide to Kinesiology, Sport & Exercise Science*. Brentwood, Essex: Multi-Science Publishing Co. Ltd..
- Jones, A., & Doust, J. (1996). A 1 % treadmill grade most accurately reflects the energetic cost of outdoor running. *J Sports Sci.*, 14 (4), 321-327.
- Jones, A., & Doust, J. (2001). Limitation to submaximal exercise performance. In: Eston R., Reily T., eds. *Exercise and Laboratory Test Manual*. (pp. 235-262) 2nd ed. E & FN Spon
- Kim, J., Lee, N., & Trilk, J. (2011). Effects of sprint interval training on elite Judoists. *Int J Sports Med.*, 32 (12), 929-934.
- Lachlan, J., Kelly, V., & Beckman, E. (2013). Periodization for Mixed Martial Arts. *Strength & Conditioning Journal*, 35 (6), 34-45.

- Lenetsky, S., & Harris, N. (2012). The Mixed Martial Arts Athlete: A Physiological Profile. *Strength and Conditioning Journal*, 34 (1), 32-47.
- Liparova, S., & Brođani J. (2016). The influence of the running preparation on the aerobic and anaerobic threshold in a year's training cycle at the cross triathlete *Physical Activity Review*, 4,139-146.
- Lundberg, M., Hughson, R., Weisiger, K., Jones, R., & Swanson, G. (1986). Computerized estimation of lactate threshold. *Comput Biomed Res.*, 19 (5), 481-486.
- McGehee, J., Tanner, C., & Houmard, J. (2005). A comparison of methods for estimating the lactate threshold. *J Strength Cond Res.*, 19 (3), 553-558.
- Miarka, B., Panissa, V., Julio, U., Del Vecchio, F., Calmet, M., & Franchini, E. (2012). A comparison of time-motion performance between age groups in judo matches. *J Sports Sci.*, 30 (9), 899-905.
- Sousa, N., Magosso, R., & Pereira, G. (2012). Acute cardiorespiratory and metabolic responses during resistance exercise in the lactate threshold intensity. *Int J Sports Med.*, 33 (2), 108-113.
- Stanula, A., Gabrys, T., Szmatlan-Gabrys, U., Rocznioek, R., Maszczyk, A., & Pietraszewski, P. (2013). Calculating lactate anaerobic thresholds in sports involving different endurance preparation. *Journal of Exercise Science and Fitness*, 11 (1), 12–18.
- Sterkowicz, S., Gabrys, T., Szmatlan-Gabrys, U., Stanula, A., & Garnys M. (2016). The interdependence of the main indicators of five methods applied to determine the lactate anaerobic threshold judo athletes. *Archives of Budo*, 12, 35–41.
- Stupnicki, R., Gabrys, T., Szmatlan-Gabrys, U., & Tomaszewski, P. (2010). Fitting a single-phase model to the post-exercise changes in heart rate and oxygen uptake. *Physiol Res.*, 59 (3), 357-62.
- Vecchio, F., Hirata, S., & Franchini, E. (2011). A review of time-motion analysis and combat development in mixed martial arts matches at regional level tournaments. *Percept Mot Skills*, 112 (2), 639-648.

SELECTED ASPECTS OF MARTIAL ARTS FOR HEALTH UNDERLYING THEIR PRO-ACTIVE INFLUENCE IN THE CONTEXT OF CENTRAL NERVOUS SYSTEM PLASTICITY

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Abstract. *The aim of this study is to extend the knowledge of selected aspect of of taekwon-do (martial art) for health in the context of central nervous system plasticity. This paper aims at presenting the results of the research and concepts that contribute to the understanding of the value of development and teaching of taekwon-do and other martial arts in the context of the notion of contact. The research data indicate that there are substantial arguments that allow us to state that participation in martial arts is strictly connected with an integrated activity in different fields of child's and adolescent's development. In the case of adults (included patients with musculoskeletal chronic pain) it supports the functioning of the nervous system. Based on the research approach specified as neuroscience, one can interpret the research reports present in literature, that indicate positive changes in particular brain structures, involved, among others, in the ability to concentrate, as a result of this training.*

Keywords: *taekwon-do, martial arts, stimulating factor, health psychology.*

Introduction

Academic approach to the realization of specified tasks connected with taekwon-do and other martial arts is related to the analysis of multidimensional situation that spreads from the dimension specified by conditionings and the rules of biomechanics, kinematics as well as the psychological and social dimension (Wąsik & Góra, 2016). Various martial arts that differ from one another are characterised of one common feature that is *contact*. It assumes different forms, from only signalling the touch of a rival, other competitor, or sparring partner (that is the form that does not endanger life and health) to full contact (Wasik & Gora, 2016; King & Williams, 1997).

From the neurobiological perspective, the notion of contact indicated the form of mutual influence that stresses the participation of a sensorimotor aspect (Wąsik & Góra, 2016; Ortenburger et al., 2015; Kalina, 2010). From a different perspective, this can be considered on the basis of the mechanisms underlying

the interaction of matter and energy (Tsos et al., 2017; Leite, 2014). During taekwon-do, judo, aikido and other trainings, the areas and structures of a nervous system such as, among others: somatosensory cortex, premotor cortex, motor cortex, prefrontal cortex, visual cortex and auditory cortex, are intensively engaged. Recognising the rival while competing during the fight is, first of all, based on immediate experience that engages, to a large extent, the sense of touch and kinaesthetic sense.

Leading towards the examination of phenomena, due to their complicated character, the researchers reveal tendency to make reductionist divisions, so that, concentrating on smaller parts, they try to understand the whole (Edelglass et al., 2011; Spalek et al., 2017; Amen, 2005).

The notion of *contact* is used in various contexts. Referring to social connotations of the notion of *contact*, we can observe that in the social psychology and in the common version of this field of science (e.g. in the so-called common everyday wisdom, common knowledge) there are many synonyms to the word *contact*: it is someone open, direct, who does not escape from contact, communicative, easily initiating contacts, interactive, approachable, and unpretentious. Thus, when we speak about someone that he is open, that he is not distant, it may mean that it is easier to touch this person, in the psychological understanding of this word, speaking in other words, aim at his weak spot (Ortenburger et al., 2017a; Ortenburger et al., 2017b). In this paper we concentrate on the notion of *contact* with reference to martial arts, trying to perform the analysis from the perspective of biomechanics, psychology, with the inclusion of neurobiological approach. This paper aims at presenting the concepts that contribute to the understanding of the value of development and teaching of taekwon-do and other martial arts (with emphasis on the role of contact) for biological and psychological health. Therefore, the aim is theoretical and empirical argumentation regarding selected possibilities of taekwon-do application in an area of broadly understood support for particular brain structures.

In normal situations (conditions) the steering system of a man and muscle system do not function independently from one another and the whole is integrated through psychological feeling of own identity. It is followed by an individual feeling of distinctness as a feeling and thinking individual (person) and, in the physical aspect, as a body that has particular borders (Amen, 2015; Spalek et al., 2017; Richman & Rehberg, 1986)

In the literature of the subject within the last two decades there have been many works that concern the perspective of a biopsychosocial model in the role of mental sphere, emotions - based on the corresponding research (Amen, 2005).

Immediate contact, though touch, constitutes our distinctness as, due to it, we experience the physical aspect of our physical sphere of functioning in the

world we are the fully involved participants of which, not only as viewers (as it happens e.g. in dreams when we rather remember images than voice). The sense of touch increases the topological awareness referring to the borders of one's own body and to the fact of possessing the receptive surface. Touch, besides the sense of kinaesthetic, that is important for the understanding of space, in the most immediate manner stresses the fact of distinctness of one's own internal reality from the external reality that allows to recognise what is specified by researchers as the basic territory of one's own life (Edelglass et al., 2011; Szerla et al., 2017).

The aspect of protection against violating own borders (understood through the prisms of psychology) is under scientific analysis and interpretation with transferring the interest towards identity of oneself as it is the case in e.g. research over solving by taekwon-do athletes the situations connected with difficult emotions and anger (Ortenburger, 2017a). The programs, supporting the development of the models of human behaviour, are still being searched. That is why, the aim of those research was the knowledge concerning the impact of taekwon-do training on the development of different social skills. Ortenburger et al. (2017) argued that taekwon-do training ITF facilitates the development of social contacts due to common interest and positive emotion. The research covered 31 people practising taekwon-do 17 men and 14 women (age: 18.83 ± 3.49 years old; range: 16-28 years old) in taekwon-do clubs ITF (International Taekwon-do Federation). The used questionnaires covered 2 aspects of social contacts: the ability of staying calm and high self-esteem in the situation of social exposure.

What is more interesting, all the participants of the research claimed that, due to taekwon-do training, the changes in their everyday functioning had taken place. They indicated that they had considerably bigger freedom while experiencing social exposure (90 %), they became more effective in dealing with difficult conflict situations and negative emotions (61,3 %), faster came back to the balance after difficult situations (67.7 %). Similar findings were obtained in other studies (Richman Rehberg, 1986).

Selected benefits from taekwon-do exercise that includes social functioning

Taekwon-do training gives the big chance to strengthen in mind as well as body (Kim, 2015; Cho, 2017). It is a Korean martial art, the name of which is composed of three words: tae- meaning a foot, kick, kwon- fist, fist hit, do- i.e. road, philosophy of life. In order to obtain proper effects appropriate duration of trainings, intensity and frequency are necessary (Wąsik & Góra, 2016).

It encompasses not just the physical aspect of the sport, but emotional and mental lessons as well. In high performance martial arts (eg. taekwon-do, aikido) is important aspects: honesty, pro-active, loyalty, fair play.

Table 1 **Taekwon-do training and social functioning. Mean values of indexes related to psychological variables connected with social functioning (Ortenburger et al., 2017a)**

Gender	Self-esteem in the situation of social exposure			Satisfaction with an increase of the number of social			The level of the feeling of competence		
	Mean	SD	p	Mean	SD	p	Mean	SD	p
Men	8.94	1.14	0.00	8.76	0.75	0.65	36.35	7.04	0.00
Women	6.00	2.60		8.64	0.74		31.86	8.47	
Together	7.61	2.41		8.71	0.74		34.32	7.92	

Findings show that children who participate in Taekwondo classes have positive interaction with children of their own age thus developing good social skills. The conducted analysis indicated that there is a difference regarding the level of the feeling of own competence with respect to sex: at men it was higher than at women. Both women and men in a similar way assess the degree of a beneficial impact on the feeling of possibilities of fulfilling passion among the persons sharing it.

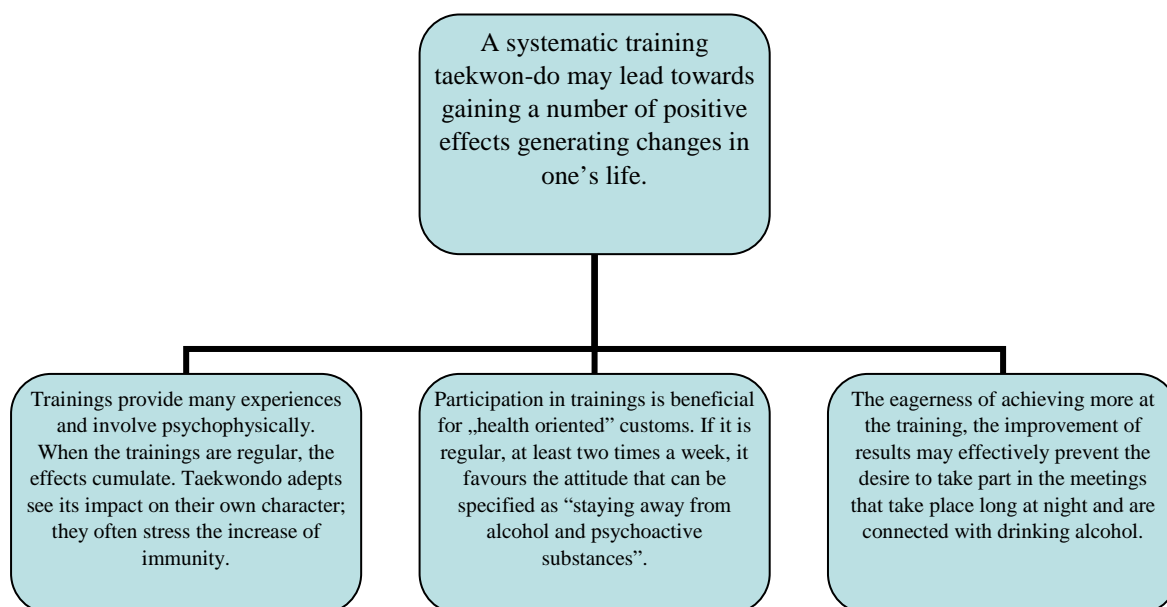


Figure 1. **There are circumstances that allow for answering positively to the questions if taekwondo is the lifestyle element - taekwon-do effects on different fields of activity**

The practitioners feel a beneficial effect on taekwon-do practising in many areas of social character: an increase of the number of contacts based on sharing interests and passions, larger freedom during experiencing social exposure, and more effective dealing with conflict situations etc. (Ortenburger et al., 2017a).

A systematic training taekwon-do may lead towards gaining a number of positive effects (among others physical abilities), generating changes in one's life, e.g. sport success, making friends of similar interests.

Building the status of science about martial arts, connected with effective solving of the methodological problems is visible in scientists' works who, on one hand, represent an objective approach and, on the other, are highly qualified practitioners of martial arts. The definition of science martial arts as a separate scientific is rather not very easy Science of martial arts is still emerging research field (sub-disciplines) (Kalina, 2014).

The research data indicate that there are substantial arguments that allow us to state that participation in martial arts such as taekwon-do, judo and aikido is strictly connected with an integrated activity in different fields of child's and adolescent's development. In the case of adults it supports the functioning of the nervous system (Burke et al., 2007; Richman & Rehberg, 1986). The following study was performed to assess the development of self-esteem through training in the martial arts. Richman & Rehberg (1986) conducted a study in which 60 martial artists were tested one day before the largest tournament in the United States, the 1985 Battle of Atlanta, in which they were going to compete against one another. This study found that people with higher self-esteem display greater ability in their sport (Richman & Rehberg, 1986). Researchers stress that kinaesthetic sense is important for the development of the feeling of space and it causes that a man may experience himself not only as some form, closed with the surface of skin, but also builds the experience of body in movement. It has the developmental aspect that attracted the attention of an educator, who described the situation in which his daughter, seeing a watch that she was not allowed to touch, wanted to see it with her hands and stretched them to take the watch. In order to be in a full, dynamic contact with the object, she wanted to initiate an immediate contact with it, obtaining information it concerned: distinctiveness (sense of touch), shape (kinaesthetic sense), weight (somatic sense) (Edelglass et al., 2011).

At present no one questions the existence of neurogenesis in different phases of a human life from birth to maturity. As a consequence of this research, the researchers concentrate on what can stimulate neurogenesis, increasing the skills of functioning in the process of optimisation (Amen, 2005; Brodani & Zuskova, 2015; Leite, 2014; Sogabe, 2013).

There are substantial arguments to conclude that the participation in martial arts such as taekwon-do, judo and aikido may constitute an effective form of

integrated activity in different fields of child's and adolescent's development (Ortenburger et al., 2017a; Richman & Rehberg, 1986; Tsos et al., 2017). In the case of adults such an activity supports the nervous system functioning (of course only when the benefits overcome losses that result from the injuries covering the nervous system). Judo teaches the ability of falling down, limiting the consequences of accidents as a result of stumbling.

Through the choice of activities and the quantity of techniques performed in the air, taekwon-do training contributes to the improvement of the sense of balance that is known to have a significant importance while falling down and, in a wider extent, when safety is considered. This is important because if aging were simply a matter of wearing out, we would expect all centenarians to be in poor health, trapped in bodies with many deteriorated working parts. Actually, standards of health are high among numerous centenarians. Those who study centenarians been taken aback by their strong attachment to freedom and independence (Uher & Švedová, 2013).

These findings have been strengthened by research evidence. Discussions on the value of various activity systems for physical and mental health are underway (for example yoga contra kickboksing). E.g the influence of physical exercises on health components of the quality of life of students is discussed. It is found that physical and mental component indicators of the quality of life of students who do yoga are much lower than those of students practicing kickboxing. The level of mental health component is lower than the level of physical health component. Interestingly, the men who do kickboxing report 19.5 points higher indicators of role - emotional functioning than the men who practice yoga. Similarly, female kickboxers report 19.4 points higher indicators in social functioning level compared with the women doing yoga (Tsos et al., 2017). Overall, the students who practice kickboxing on regular basis indicate significantly higher values of the physical and the mental components of health than the students who practice yoga.

In taekwon-do very often there are also many kicks that involve jumping before their execution. Often jumping kicks involve pulling up the back leg to help gain height during the jump and then performing the kick itself with the front leg (Wąsik & Góra 2016). It's a big challenge for body awareness. Human awareness of a three-dimensional space, the one in which, besides us, there are and move around other objects, is connected with the need of constant balance, in contrast to gravitation force acting in the space. Thanks to the sense of touch, we become aware of the basis on which we stand and the experience of movement, that is necessary to raise, is conveyed by the kinaesthetic sense (Edelglass et al., 2011).

Summary

From the perspective of the modern language of health psychology it is rightful interpretation, that taekwon-do deserves to be recognised as a specific method having a complementary impact on mental and somatic aspects of health. From the neurobiological perspective *contact* in martial arts have a mutual multidimensional sensorimotor, social and psychological aspects. *Contact* (biological, physical, social) is important experience the crucial aspects of mental and physical sphere of functioning. Also, *contact* in martial arts it's a big challenge for body awareness and for a sense that one's skills are adequate to cope with the challenges in a goal directed.

People have practiced variety martial arts for many centuries. Martial arts in a proper dose and form constitutes a remedy, acting against physical and psychical degradation of an organism. Coordination, precision, velocity and accuracy are important factors that help in achieving victory. We express our hope that to some extent this work will support the development of knowledge within taekwon-do and other martial arts. The positive influence also concerns cerebellum, the sense of balance and coordination. The impact of taekwon-do on the effect of science is revealed in the results of research conducted with the use of medical diagnostic techniques and bases on the reports of teachers indicating how the behaviour of pupils practising taekwon-do changes (Wąsik & Góra, 2016). An immediate contact between sparring partners, that is fit in the training form, is connected with an immediate, most frequently mutual interaction, where a very important role is played by the sensorimotor sphere of functioning. Contrary to the typical "school" education, where listening and reading activate only some selected brain structures, during taekwon-do trainings that involve contact, the activation of other senses takes place with the involvement of somatosensory sphere, premotor cortex, motor cortex, and pre-cortical cortex.

References

- Amen, D. (2005). *Making a Good Brain Great: Making a good brain great: The Amen Clinic program for achieving and sustaining optimal mental performance*. New York: Harmony Books.
- Brodani, J., & Zuskova, I. (2015). Quality of life and physical activity of kindergarden teachers, *Physical Activity Review*, 3, 11–21.
- Burke, D. T., Al-Adawi, S., Lee, Y. T., & Audette, J. (2007). Martial arts as sport and therapy. *J Sports Med Phys Fitness*, 47 (1), 96-102.
- Cho, S. Y., So, W. Y., & Roh, H. T. (2017). The Effects of Taekwondo Training on Peripheral Neuroplasticity-Related Growth Factors, Cerebral Blood Flow Velocity, and Cognitive Functions in Healthy Children: A Randomized Controlled Trial. *International Journal of Environmental Research and Public Health*, 14 (5), 454.
- Edelglass, S., Maier, G., Gebert, H., & Davy, J. (2011). *The Marriage of Sense and Thought: Imaginative Participation in Science (Serier: Renewal in Science)*. Publisher: Lindisfarne Books.
- Kalina, R. M. (2010). Science of martial arts as the new scientific speciality. 2ndWorld Scientific Congress of Comabat Sports and Martial Arts. In: *Cynarski WJ, Kubala K, Obodyński K, editors ,Proceedings*. University of Rzeszów September 17-19, 2010.

- Kim, Y. (2015). The effect of regular Taekwondo exercise on Brain-derived neurotrophic factor and Stroop test in undergraduate student. *Journal of Exercise Nutrition & Biochemistry*, 19 (2), 73–79.
- King, L. A., & Williams, T. A. (1997). Goal orientation and performance in martial arts, *Journal of Sport Behaviour*, 20 (4), 397–412.
- Leite, W. (2014). Competition versus nature: how the sport warps human character, *Physical Activity Review*, 2, 1–9.
- Ortenburger, D., Wasik, J., Gora, T., Tsos, A., & Bielikowa, N. (2017a). Taekwon- do: a chance to develop social skills. Ido Movement For Culture. *Journal of Martial Arts Anthropology*, (4), 14–18.
- Ortenburger, D., Rodziewicz-Gruhn, J., Waśik, J., Marfina, O., & Polina, N. (2017b). Selected problems of the relation between pain-immunity and *depression*, *Physical Activity Review*, 2017 (5), 74-77.
- Ortenburger, D., Wasik, J., & Góra, T. (2015). Report of the 1st World Congress on Health and Martial Arts in Interdisciplinary Approach 17-19 September 2015. Czestochowa. *Physical Activity Review*, 3, 49-51.
- Richman, C. L., & Rehberg, H. (1986). The development of self-esteem through the martial arts. *International Journal of Sport Psychology*, 17, 234-239.
- Sogabe, A. (2013). Influence of difference in knee alignment on site of pain and psychological state after long-distance walking, *Physical Activity Review*, 1, 1-9.
- Spalek, R., Ortenburger, D., Szerla, M., Bitner, B. (2017). Musculoskeletal pain as a challenging problem for patients and occupational therapists, *Physical Activity Review*, (5), 196-201.
- Szerla, M., Ortenburger, D., Kluszczynski, M., & Wyszomierska J. (2017). Exercise and psychological factors in low back pain, *Physical Activity Review*, 5, 6–9.
- Tsos, A., Hylchuk, Y., Andreichuk, O., Pantik, V., & Tsymbaliuk S. (2017). Physical and mental health components condition in the life quality of students who regularly practice kickboxing and yoga. *Physical Activity Review*, 5, 37–43.
- Uher, I., & Švedová, M. (2013). Long and prosperous life paradigm. *Physical Activity Review*, 1, 38–44.
- Wasik, J., & Gora, T. (2016). Impact of target selection on front kick kinematics in taekwondo – pilot study, *Physical Activity Review*, 2016 (4), 57-61.
- Zimbardo, Ph. (2005). *Psychology - Core Concepts*, 5/e, USA: Allyn & Bacon Publishing.

PĒDU APRŪPES PODOLOGISKIE ASPEKTI SOCIĀLĀS APRŪPES CENTROS

Podological Aspects of Foot Care in Social Care Centers

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Abstract. *Investigate the necessity for therapeutic foot care and the involvement of a podologist in an interdisciplinary health care team in social care institutions in Latvia.*

So far, no study has been conducted on the need for therapeutic pediatric care for Social Care Center (SCC) clients in Latvia; it is known that in individual SCC's where some podologists work part-time, another podologist is invited in specific cases, or clients are taken to a podologist at a medical institution.

The study was conducted in 15 Latvian Social Care Centers (SCC), surveying 750 customer feet. People who, for various reasons, are no longer capable of foot care, is a highly necessary specialist who will do it professionally and according the needs of each client, so the involvement of a podologist in the SCC team's work is essential. The foot healing provided by the podologist would help prevent diabetes, cardiovascular, musculoskeletal etc. complications caused by the disease; those clients whose age (range of motion, vision problems, etc.) no longer allows them to care for their feet.

Methods: Qualitative and Quantitative Research Method. Research tool – foot examination protocol.

Keywords: *medical foot care, podologist, social care center customer, social care institutions.*

Ievads

Introduction

Latvijā pēdējo desmit gadu laikā iedzīvotāju vidējais dzīves ilgums palielinājies par trim gadiem. Ja, atbilstoši statistikas uzskaites datiem, 2013. gada 1. februārī tas bija 74 gadi, tad šobrīd vīriešu vidējais mūža ilgums valstī ir 68,8 gadi, bet sieviešu – 78,7 gadi (Latvijas statistikas pārvalde, 2017). Sabiedrība noveco visur Eiropā, taču Latvijā vairāku faktoru dēļ (gan vidējā dzīves ilguma palielināšanās, gan emigrācija, gan sliktā demogrāfiskā bilance) sabiedrība noveco ļoti strauji. Minētais fakts norāda, ka palielinoties iedzīvotāju vidējam vecumam, arī senioru (pusmūža otrā puse, agrīnais vecums un vecums) dzīves kvalitātei būtu jāpievērš arvien lielāka uzmanība.

Latvijas sociālās aprūpes iestādēs (turpmāk tekstā SAC), pēc Valsts sociālo aprūpes centru 2014. gada datiem atrodas 3973 cilvēku. Vairumā gadījumu SAC klienti ir gados veci cilvēki, kā arī cilvēki ar īpašām vajadzībām, kuriem veikt pašaprūpi, īpaši pēdu pašaprūpi, varētu būt salīdzinoši apgrūtināši. Cilvēkiem, kuri dažādu iemeslu dēļ vairs nespēj veikt pēdu aprūpi ir ļoti nepieciešams speciālists, kas to veiktu profesionāli un atbilstoši katra klienta vajadzībām, tāpēc būtiska ir podologa iesaistīšana SAC komandas darbā. Ārstnieciskā pēdu aprūpe, kuru nodrošinātu podologs, ļautu novērst cukura diabēta, sirds- asinsvadu, muskuloskeletāro u.c. saslimšanu izraisītās vēlīnās komplikācijas tiem klientiem, kuriem vecums (kustību amplitūda, redzes problēmas, u.c.) vairs neļauj pašiem veikt ikdienas pēdu aprūpi.

Līdz šim Latvijā nav publicēti pētījumi par to, cik no SAC klientiem būtu nepieciešama ārstnieciskā pēdu aprūpe. Ir zināms, ka atsevišķos SAC podologs strādā pastāvīgi (nepilnu slodzi), vai tiek pieaicināts konkrētos gadījumos, vai arī klienti tiek nogādāti pie podologa uz kādu ārstniecības iestādi. Tādēļ 2017.gadā Latvijas Universitātes P. Stradiņa medicīnas koledžas zinātniskās pētniecības projekta ietvaros tika veikts pētījums - „*Ārstnieciskās pēdu aprūpes nepieciešamības izvērtējums sociālās aprūpes iestādēs*” (LU PSK npublicēts dokuments, 2017). Pētījums tika veikts 15 Latvijas SAC, no katra Latvijas reģiona pēc nejaušības principa izvēloties 3 sociālās aprūpes institūcijas. Katrā institūcijā, izmantojot nejaušu respondentu atlases pieeju, tika iekļauti 50 respondenti. Tika izstrādāti 2 darba instrumenti – pēdu apskates protokols SAC klientiem un daļēji strukturētas intervijas jautājumi SAC administrācijai un darbiniekiem. Desmit apmācīti Latvijas Universitātes P. Stradiņa medicīnas koledžas studenti (topošie podologi), trīs pētnieku vadībā veica 750 SAC klientu pēdu apskati un izmeklēšanu, aizpildot pēdu apskates protokolus. Paralēli tika veiktas intervijas ar 15 SAC speciālistiem. Konstatējošā pētījuma dati tika apkopoti un analizēti, izmantojot kvantitatīvās datu apstrādes metodes un datu aprakstošo analīzi. Pētījuma rezultāti pierāda nepieciešamību iesaistīt SAC klientu aprūpes komandā podologu gan pašvaldību, gan valsts līmenī, uzlabojot sociālās aprūpes kvalitāti un paplašinot darba tirgus iespējas koledžas absolventiem.

Raksta mērķis: atspoguļot ārstnieciskās pēdu aprūpes nepieciešamības izvērtējuma rezultātu podoloģiskos aspektus sociālās aprūpes iestādēs.

Situācijas raksturojums *Description of the situation*

Lai gan pēdu problēmas var attīstīties visu vecuma grupu cilvēkiem, tomēr lielākā daļa saslimšanu pieaug līdz ar vecuma palielināšanos. Pētījumos (Frowen et al., 2006), ir konstatēts, ka 80 % gados vecu cilvēku ir pēdu problēmas, dažas no tām ir mazāk bīstamas veselībai, bet tomēr traucējošas ikdienas aktivitātēs,

taču bieži vien ir arī smagākas saslimšanas, kā piemēram perifēro artēriju saslimšanas, kuru risks pieaug proporcionāli vecumam (Campbell, 2006). Tas, ka bieži vien cilvēkiem nav sūdzību, vēl nenozīmē, ka nav attīstījies pēdas bojājums – neiropātija, perifēro asinsvadu slimība vai pat čūla, kas sākotnēji neizraisa nekādus subjektīvus simptomus.

Gados vecākiem pacientiem pēdu veselību ietekmē tādas hroniskas saslimšanas kā sirds un asinsvadu saslimšanas, liekais svars, cukura diabēts, artrīts, kustību un balsta sistēmas patoloģiskas izmaiņas. Galvenās pēdu problēmas, kas rodas gados veciem cilvēkiem, ir saistāmas ar izmaiņām ādā, nagos, pēdas formā un infekciju veidošanos (Frowen et al., 2006).

Literatūrā (Frowen et al., 2006; Campbell, 2006; Niederau, 2009, u.c.) tiek atzīmēts, ka 31 % gados veco cilvēku nav paši spējīgi veikt nagu apgriešanu, tāpēc, ka nespēj vairs pieliekties, lai sasniegtu pirkstu galus un/vai arī noliekšanās rada galvas reiboņus. Iemesls var būt arī samazināts redzes asums vai tādas saslimšanas kā artrīts, kā dēļ cilvēks nav spējīgi darboties ar nagu standziņām. Ir grūti vai pat neiespējami veikt nagu apgriešanu, ja nagi ir ļoti biezi. Arī liels ķermeņa svars var būt par iemeslu nespējai veikt pēdu pašaprūpi. Lai pēdu aprūpi būtu iespējams veikt atbilstoši pašreizējām Pasaules Podiatru asociācijas ieteiktajām vadlīnijām (IWGDF, 2007), ir jāievēro visi aprūpes procesa etapi. Gados vecu cilvēku aprūpes nodrošināšana podoloģiskajā praksē raksturojas ar regulāru klientu pēdu izmeklēšanu un novērtēšanu, rezultātu salīdzināšanu ar iepriekšējiem datiem; pēdas bojājuma riska noteikšanu un koriģēšanu, lai saglabātu veselību, pēdu profilaktisko un ārstniecisko aprūpi; pēdu aprūpes vadīšanu, sadarbošanos ar citiem aprūpes speciālistiem un klienta un/vai sociālās aprūpes institūcijas speciālistu izglītošanu.

Regulāra klientu pēdu aprūpe ir daļa no holistiskās aprūpes, ko sniedz veselības un sociālās aprūpes institūcijās strādājošie speciālisti, tādejādi sasniedzot maksimāli labāko iespējamo klienta veselības stāvokli.

Pētījuma norise un metodes ***Research desing and methods***

Ārstnieciskās pēdu aprūpes nepieciešamības izvērtējums sociālās aprūpes iestādēs tika veikts no 2017. gada 26. aprīļa, līdz 2017. gada 30. maijam. Konstatējoša pētījuma gaitā, ar pētījuma instrumenta – strukturēta pēdu apskates protokola palīdzību, tika iegūti vispārējie dati par klientu vecumu un dzimumu, konstitucionālo uzbūvi, vispārējo funkcionālo stāvokli un saslimšanām, kā arī tika noskaidrots, kuras personas klientam veic regulāru pēdu aprūpi. Tika veikts klientu vispārējā pašaprūpes stāvokļa novērtējums, apavu stāvokļa novērtējums un noskaidrota klienta iesaistīšanās SAC aktivitātēs. Pēdu stāvokļa podoloģiskā novērtēšana tika veikta piecās pozīcijās - perifērās asins cirkulācijas pārbaude,

perifērie neiroloģiskie testi, pēdu funkcionālā stāvokļa izvērtēšana, pēdu ādas un nagu stāvokļa novērtējums. Atbilstoši klientu pēdu stāvoklim tika atzīmētas nepieciešamās manipulācijas un specifiskie ieteikumi pēdu aprūpē un/vai klientu konsultēšanā pie citiem speciālistiem.

Mēneša laikā tika veikta 750 klientu pēdu stāvokļa izvērtēšana četros Latvijas reģionos un Rīgā. Katrā reģionā un Rīgā pēc nejaušas atlases principa tika izvēlēti trīs sociālās aprūpes centri, kopumā piecpadsmit sociālās aprūpes institūcijas ($n=50 \times 15$). Institūciju atlase tika veikta, izmantojot Latvijas Republikas Labklājības ministrijas mājaslapu, sadaļā „Sociālās aprūpes centri Latvijā” (<http://www.lm.gov.lv/text/390>) un pašvaldību sociālo institūciju mājaslapas. Respondentu atlase tika saskaņota ar SAC administrāciju, parakstot savstarpēju vienošanās līgumu. Pētījumu veica 10 iepriekš apmācīti LU PSK studiju programmas „Podoloģija” 1. un 2. kursa studenti, trīs pētnieku - LU PSK docētāju uzraudzībā.

Rezultāti

Results

Katram klientam, ievērojot personisko datu aizsardzības principus, ētiku un pētījuma datu konfidencialitāti tika veidots atsevišķs pēdu apskates protokols, kas tika numurēts ar arābu cipariem. Sociālās aprūpes institūcija, saglabājot anonimitāti, tika kodēta ar alfabēta lielajiem burtiem. Rezultātu analīze apkopotā veidā tika veikta, izmantojot Microsoft Excel datu apstrādes programmu.

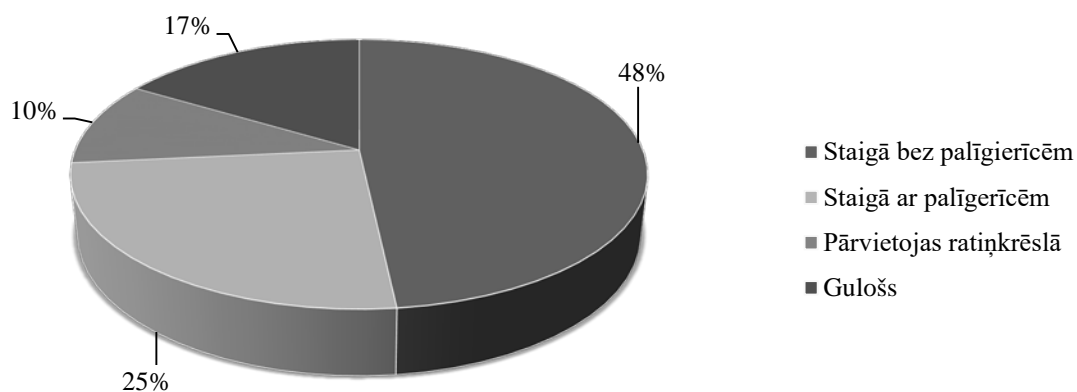
Respondentu vecuma grupas tika sakārtotas atbilstoši PVO vecumposmu iedalījumam (SPKC, 2012). Vairāk nekā puse respondentu – 52 % (391 no 750), atbilst vecu cilvēku grupai, 24 % (181 respondents) - agrīna vecuma, nedaudz mazāk-16 % (118 respondenti) pusmūža, 8 % (58 respondenti) brieduma un tikai 0,2 % (2 respondenti) jauniešu vecuma grupai. Sociālās aprūpes institūcijas, kurās atrodas nepilngadīgi bērni, ētisku aspektu dēļ netika iekļautas pētījuma respondentu atlasē.

Iegūtie rezultāti liecina, ka Latvijas SAC galvenokārt uzturas veci cilvēki (75 gadi un vecāki), cilvēki agrīnā vecumā (65-74 gadi) un personas pusmūžā (45-64 gadi), kas arī atbilst sociālās institūcijas funkcijai - „*nodrošināt personai, kura vecuma vai veselības stāvokļa dēļ nespēj sevi aprūpēt, kā arī bāreņiem un bez vecāku gādības palikušiem bērniem mājokli, pilnu aprūpi un sociālo rehabilitāciju*” (LR Sociālo pakalpojumu un sociālās palīdzības likums, 2002).

Lai noteiktu SAC klientu pašaprūpes iespējas un spēju apkopt savas pēdas, tika novērtēts klientu konstitucionālais tips. Rezultāti liecina, ka lielākā daļa 72 % (jeb 540 no 750) respondentu ir normāla ķermeņa masa, bet 19 % (jeb 145 no 750) respondentiem tika novērota adipozitāte, kas varētu būt iemesls apgrūtinātai pēdu pašaprūpei. 9 % klientu (jeb 65 no 750) tika konstatēta hipoastēnija, kas

varētu būt par iemeslu vispārējam vājumam un apgrūtinātai pašaprūpes iespējai. Spriežot pēc klientu konstitucionālā tipa, vairāk kā ¼ daļai (38 %) SAC iemītnieku prognozējamas grūtības patstāvīgi veikt ikdienas pēdu kopšanas un higiēnas minimumu. Tātad nepieciešama aprūpes personāla palīdzība pēdu kopšanā.

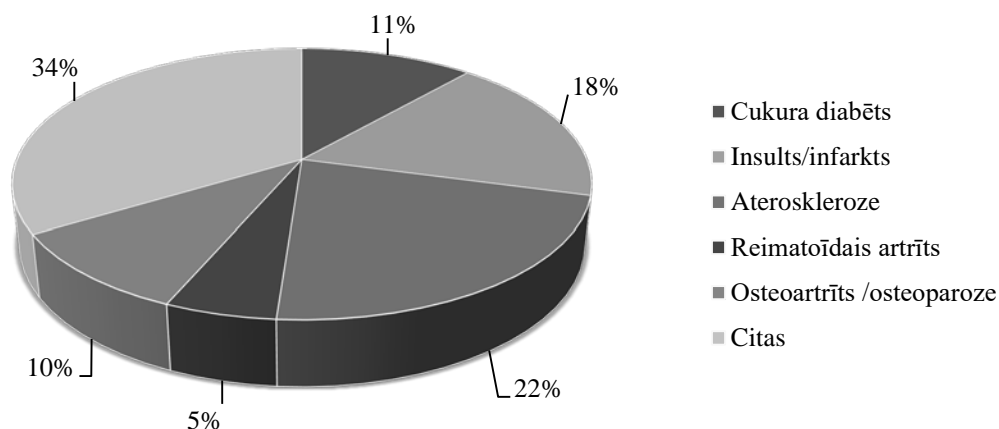
Viens no būtiskākajiem aspektiem klientu pašaprūpes iespēju novērtēšanā ir vispārējais funkcionālais stāvoklis un klienta mobilitāte. Lai gan 48 %, jeb 362 klienti pārvietojas bez palīgierīcēm, tomēr vairāk nekā puse 52 % (388 no 750) klientu ir ar kustību traucējumiem, no kuriem 25 % (jeb 189) pārvietojas ar palīgierīcēm - spieķis, elkoņa kruķi, staigāšanas rāmis, rolators; 10 % (jeb 76) klienti pārvietojas ratiņkrēslā un 17 % (jeb 123) ir pilnīgi guloši (skatīt 1. attēlu). Minētie fakti par klientu funkcionālā stāvokļa ierobežojumiem liecina, ka vairāk nekā pusei Latvijas SAC iemītniekiem nepieciešama palīdzība pēdu aprūpes un higiēnas nodrošināšanā.



1.att. SAC klientu vispārējais funkcionālais stāvoklis
 Figure 1. Overall capabilities of Social Care Centres clients

Atbilstoši podoloģijas vadlīnijām (Vadlīnijas podoloģijā, 2014; IWGDF, 2007) un podologa profesijas standartam (LKD, 2017), zināms, ka īpaša uzmanība pievēršama un ārstnieciskā pēdu aprūpe ir nepieciešama tieši paaugstināta veselības aprūpes riska grupu pacientiem. Tika noskaidrots SAC klientu vispārējais veselības stāvoklis, kur uzmanība tika pievērsta tādām saslimšanām, kā cukura diabēts, osteoartrīts, sirds asinsvadu saslimšanas un reimatoīdais artrīts, kas tieši ietekmē apakšējo ekstremitāšu stāvokli un hronisku kāju čūlu attīstības risku. Rezultāti liecina, ka 66 %, jeb vairāk nekā puse SAC iemītnieki atbilst paaugstināta veselības aprūpes riska kategorijai, jo atzīmē vienu vai vairākas riska grupu saslimšanas (skatīt 2. attēlu), no kurām: 22 % (jeb 178 klientiem) ir ateroskleroze, 18 % (jeb 144) ir stāvoklis pēc insulta/infarkta un 11 % (jeb 63) cukura diabēts. Piebilstams, ka visas minētas saslimšanas izraisa perifēro artēriju slēgumus, perifērās neiropatijas attīstību un paaugstina čūlu un amputāciju risku,

tādēļ tiem klientiem pēdu aprūpi drīkst veikt tikai ārstniecības personas - podologi.



2.att. Subjektīvā informācija par SAC klientu saslimšanām

Figure 2. Subjective information about illnesses of Social Care Centres' clients

Vairāk par ceturtdaļu 34 % (jeb 273 no 750) SAC klientu atzīmē vēl citas saslimšanas, piemēram, hipertensisko slimību, nieru un sirds mazspēju, u.c., kas perifēro asinsriti un jušanas funkciju ietekmē sekundāri, un kuru gadījumā arī būtu nepieciešama kvalificēta pēdu aprūpe.

Pirms pēdu apskates un novērtēšanas, paralēli klientu konstitucionālā tipa un funkcionālā stāvokļa novērtēšanai un iztaujāšanai par subjektīvajām saslimšanām, tika noskaidrots vai SAC tiek veikta regulāra pēdu aprūpe, un noskaidrota persona, kas veic šo procedūru izpildi. Iegūtie rezultāti liecina, ka 67 % respondentu (jeb 502 klientiem no 750) pēdu aprūpi veic sociālais aprūpētājs/aprūpētājs, 21 % (jeb 154 gadījumos) to dara kāda cita persona, piemēram, nagu kopšanas speciālists vai klients pats. Retāk 1 % (jeb 11 klientiem no 750) pēdu aprūpi saviem tuviniekiem veic piederīgie, kuru prasmes pēdu kopšanā ir tikai personiskajā pieredzē balstītas. 11 % (jeb 83 no 750 klientiem) pēdu aprūpi veic podologs. Piemēram, viens SAC ir noslēdzis līgumu ar LU PSK par studiju programmas „Podoloģija” studentu praksi, kuras laikā (sertificēta podologa - pasniedzēja uzraudzībā) veic ārstnieciskās pēdu aprūpes procedūras. Pārējās institūcijas podologa pakalpojumu, kas galvenokārt ir maksas pakalpojums, izmanto epizodiski.

Rezultātā, salīdzinot SAC klientu vidējo vecumu, konstitucionālo tipu, vispārējo funkcionālo stāvokli, iespējamās saslimšanu grupas un podologa pieejamību SAC, arī praksē apstiprinās pētījuma ievadā aktualizētā problēma par podologu iesaistes nepieciešamību Latvijas SAC komandas darbā. Podologs SAC klientiem, kuri dažādu iemeslu dēļ vairs nespēj veikt pēdu aprūpi, to veiktu profesionāli un atbilstoši katra klienta veselības stāvoklim un vajadzībām.

Lai izpētītu ārstnieciskās pēdu aprūpes nepieciešamību sociālās aprūpes centros Latvijā, detalizēti tika veikta klientu pēdu stāvokļa novērtēšana un apskate atbilstoši podoloģijas vadlīnijām un Latvijas Podologu biedrībā apstiprinātajam pēdu novērtēšanas protokolam (Vadlīnijas podoloģijā, 2014), iegūtie rezultāti apkopoti un atspoguļoti 1. tabulā (skatīt 1.tab.).

Pēdu stāvokļa novērtēšana visiem klientiem tika uzsākta ar perifērās asinscirkulācijas pārbaudi - pulsa palpāciju uz *a.dorsalis pedis* un *a.tibialis posterior*. Rezultāti liecina, ka vairāk nekā ¼ SAC klientu Latvijā ir traucēta perifērā asinsrite, kas liecina par hronisku kāju artēriju stenozi (artēriju sašaurināšanās) vai oklūziju (slēgšanās), kā rezultātā attīstās kāju išēmija, arteriālas čūlas un pieaug gangrēnas risks. Visi minētie SAC klienti atbilst paaugstināta veselības aprūpes riska grupas pacientu kategorijai, kam īpaša uzmanība jāpievērš pēdu aprūpei un higiēnai, un aprūpes procesā pieļaujama tikai ārstnieciskā pēdu aprūpe, ko veic podologs.

Pēdu izvērtēšanas rezultāti liecina, ka lielākajai daļai SAC klientu ir nelieli jušanas traucējumi, kas atbilst vecuma fizioloģiskajai normai. Arī SAC klientiem ar jušanas traucējumiem nepieciešama regulāra pēdu apskate un pārbaude ne retāk, kā 2x mēnesī, kā arī regulāra pēdu ādas sabiezējumu noņemšana un laicīga nagu apgriešana, kas novērš izgulējumu un neiropātisku čūlu attīstību apakšējās ekstremitātēs.

1.tab. SAC klientu pēdu stāvokļa izvērtēšanas rezultāti
Table 1 Results of Social Care Centres' clients feet state evaluation

Pēdu stāvokļa izvērtējums-atbilstība fizioloģiskai normai no kopējā respondentu skaita (n=750)		Labā kāja	Kreisā kāja	
Perifērā asinsrite-pulsa palpācija uz:	<i>a.tibialis posterior</i>	<i>palpējams</i>	595	579
	<i>a.dorsalis pedis</i>	<i>palpējams</i>	522	497
Neiroloģiskie testi	vibrācijas sajūta ar 128Hz graduēto kamertoni		275	283
	Spiediena sajūta ar 10 g monofilamentu		242	257
	Pēdu locītavu mobilitātes izvērtēšana		272	297
Pēdu funkcionālais stāvoklis (deformācijas)			39	37
Pēdu ādas stāvoklis			267	270
Nagu stāvoklis			22	19

Stabilu pēdas funkcionālo stāvokli nodrošina pēdas velles, kas pēdai piešķir elasticitāti un kustīgumu, veido atsperīgu pēdas atbalstu-amortizāciju, paaugstina ķermeņa stabilitāti - uzlabojot ķermeņa līdzsvaru un iespēju adaptēties atbalsta virsmas nelīdzenumiem. Pēdu apskates rezultāti liecina, ka lielākai daļai SAC

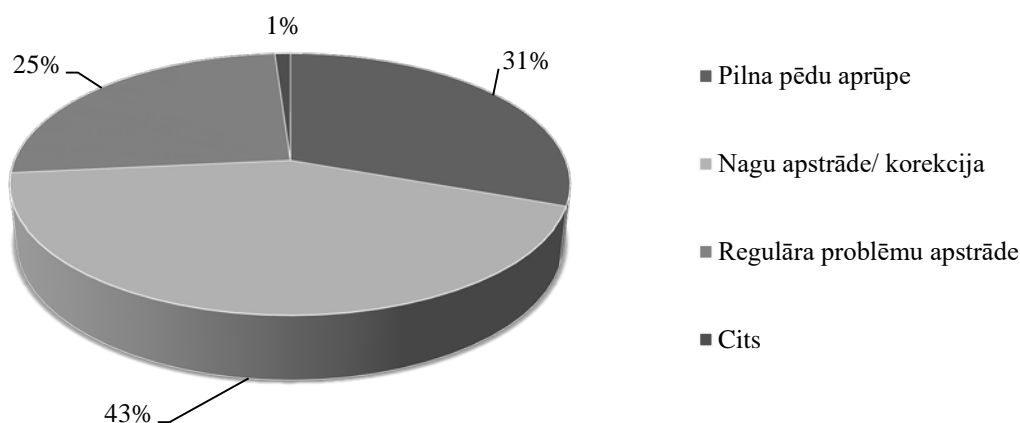
klientu ir kāds no pēdu deformāciju veidiem. Visbiežāk, kā sekas šķērsvelves plakanai pēdai SAC klientiem novērota pirmā pirksta pamatnes deformācija (260 no 750 klientiem) un āmurveida pirksti (230 no 750 klientiem), kas kombinējas ar pirmā pirksta locītavas rigiditāti, kā rezultātā veidojas sāpes un iekaisums pēdas vidusdaļā un plantārās fascijas iekaisums, vēlāk arī papēža piesis.

Plakanā pēda kombinācijā ar zemu velvi un valgus pozīciju, eversiju potītes rajonā, un pārlietu izteiktu pronāciju tika konstatēta 191 no 750 SAC klientiem. Pēdu deformāciju radītajās spiediena un berzes vietās pastiprināti veidojas ādas sabiezējumi tulznu (*callus*) un varžacu (*clavus*) veidā, kuru apstrādē ir nepieciešamas atbilstošas zināšanas un izpratne par pēdas biomehāniku un deformāciju veidiem, kā arī vispārējām organisma saslimšanām.

Izvērtējot ārstnieciskās pēdu aprūpes nepieciešamību SAC klientiem, uzmanība tika pievērsta pēdu ādas stāvoklim un redzamajām problēmām. Vairāk nekā pusei SAC klientu (426/455 no 750) tika konstatēta sausa pēdu āda, kas saistīts ar vispārēju organisma novecošanos. Tomēr jāatzīmē, ka sausa āda ir pakļauta mikrotraumām un nereti ir ieejas vārti dažādām infekcijām, īpaši pēdu sēnītēm. Kā otra biežākā pēdu problēma (337/334 no 750) tika novērota pastiprināta ragādas veidošanās (hiperkeratoze), kuru ir nepieciešams regulāri notīrīt, izmantojot skalpeli un abrazīvus, ko veic podologs. Laicīgi neapstrādāta hiperkeratoze kombinējas ar plaisām (77 no 750 klientiem) un pēdu mikozi (67 no 750 klientiem), precīzi dati par pēdu mikozi netiek sniegti, tam būtu nepieciešama laboratoriska diagnostika. Piebilstams, ka gan hiperkeratoze, gan plaisas un ādas lobīšanās ir pavadošie simptomi pēdu mikotiskai infekcijai, tāpēc ņemot vērā iespējamo sēnīšu izplatību, šiem klientiem indicēta tikai un vienīgi ārstnieciskā pēdu apstrāde, kas tiek veikta ar vienreizlietojamiem vai sterilizācijas procesam pakļautiem instrumentiem. Arī tādu pēdu problēmu apstrāde, kā *clavus*, *callus*, *verruca* un čūlas paaugstināta veselības aprūpes riska grupas klientiem (kam galvenokārt atbilst SAC klienti), ietilpst tikai podologa kompetencē

Ja pēdu ādas apskates rezultātā tika konstatētas salīdzinoši nelielas izmaiņas, tad izvērtējot nagu stāvokli, tika konstatētas būtiskas izmaiņas gandrīz visiem SAC klientiem (skatīt 1. tabulu). Galvenokārt tika konstatēta izmainīta nagu krāsa un izmainīta nagu struktūra. Lielākajai daļai (465 no 750 klientiem) tika konstatētas arī mikotiskas pazīmes vienā vai vairākos abu kāju nagos, kas liecina par iespējamu onihomikozes izplatību SAC, ko veicina aprūpētāju veiktā nagu griešana izmantojot vienu nesterilizētu instrumentu-nagu stangas vai šķēres vairākiem klientiem.

Pēdu stāvokļa izvērtēšanas gaitā podologi novērtēja vai nepieciešams aprūpes komandā iesaistīt arī citas ārstniecības personas - asinsvadu ķirurgu, tehnisko ortopēdu, dermatologu, endokrinologu, u.c. (skatīt 3. attēlu).



3.att. Ārstnieciskās pēdu aprūpes nepieciešamība SAC klientiem
Figure 3. Necessity of foot care for Social Care Centres' clients

Aptuveni 1 % SAC klientu, kuriem nav palpējams perifērais pulss un dekompensēts cukura diabēts, nepieciešamas konsultācijas pie speciālistiem. Podologa pakalpojumi ir nepieciešami 99 % SAC klientu. Konkrētu problēmu - čūlu, hiperkeratozes plaisu, u. c. ādas izmaiņu regulāra apstrāde nepieciešama 25 % SAC klientu un 43 % nepieciešama regulāra nagu apstrāde un korekcija, ko neviena cita aprūpes persona nevar veikt.

Iegūto rezultātu apstiprināšanai, paralēli SAC klientu pēdu stāvokļa novērtēšanai, tika izmantota arī strukturēta intervija, kuras mērķis bija noskaidrot katra Sociālās aprūpes centra administrācijas viedokli par podologa pakalpojumu pieejamību un nepieciešamību konkrētajā institūcijā. Strukturētās intervijas gaitā respondenti sniedza atbildes uz iepriekš sagatavotiem jautājumiem, kas tika pierakstītas un analizētas apkopotā veidā.

Apkopojot atbildes uz intervijas jautājumiem secināms, ka kopumā SAC institūcijas ir ieinteresētas podologa iekļaušanai SAC aprūpes komandā sastāvā, tikai tam nepieciešams Labklājības ministrijas un pašvaldību finansiāls atbalsts. Ņemot vērā citu Eiropas valstu pieredzi, podologa pakalpojumi būtu sniedzami uz vietas SAC, tam paredzot atbilstošu finansiālu nodrošinājumu, noteiktu darba slodzi un atbilstošu samaksu.

Secinājumi *Conclusions*

1. Vairāk nekā puse SAC iemītņieku atbilst paaugstināta veselības aprūpes riska kategorijai, kuriem indicēta regulāra pēdu aprūpe, ko drīkst veikt tikai ārstniecības personas - podologi, bet reālā situācija liecina, ka SAC regulāru pēdu aprūpi klientiem galvenokārt veic aprūpētāji vai citas personas.

2. Vairāk nekā ¼ SAC klientiem ir traucēta perifērā asinsrite, kas liecina par hronisku kāju artēriju stenozi (artēriju sašaurināšanās) vai oklūziju (slēgšanās), kā rezultātā attīstās kāju išēmija, arteriālas čūlas un pieaug gangrēnas risks. Šo klientu pēdu aprūpei un higiēnai jāpievērš īpaša uzmanība - pieļaujama tikai ārstnieciskā pēdu aprūpe, ko veic podologs.
3. Lielākajai daļai SAC klientu ir smagas un nekoriģētas pēdu deformācijas, kas veicina iegurņa rotāciju, mugurkaula deformācijas, ķermeņa centrālās ass nobīdi. Spiediena un berzes vietās pastiprināti veidojas ādas sabiezējumi tūlzu (*callus*) un varžacu (*clavus*) veidā, kuru apstrādei ir nepieciešamas atbilstošas zināšanas un izpratne par pēdas biomehāniku un deformāciju veidiem.
4. Hiperkeratoze, plaisas un ādas lobīšanās, kā arī izmainīta nagu struktūra ir pavadošie simptomi pēdu mikotiskai infekcijai, tāpēc ņemot vērā iespējamo sēnīšu izplatību, šiem klientiem indicēta tikai un vienīgi ārstnieciskā pēdu aprūpe, kas tiek veikta ar vienreizlietojamiem vai sterilizācijas procesam pakļautiem instrumentiem.
5. 99 % SAC klientu ir nepieciešami podologa pakalpojumi, jo jāveic gan ieaugušu un deformētu nagu korekcija, gan konkrētu pēdu problēmu - hiperkeratozes, plaisu, varžacu un čūlu apstrāde.
6. Ņemot vērā SAC klientu vidējo vecumu, vispārējo funkcionālo stāvokli, iespējamās saslimšanu grupas un podologa nepieciešamību SAC, nepieciešams aktualizēt podologa iekļaušanu SAC komandas darbā valsts un pašvaldību līmenī.
7. SAC administrācijas darbinieki, atbilstoša valsts un pašvaldību finansējuma gadījumā, ir ieinteresēti aprūpes komandas sastāvā iekļaut podologu kā nozīmīgu profilakses un aprūpes procesa nodrošinātāju, kas mazinātu SAC izmaksas par klientu ārstēšanu.

Summary

Article „Podological aspects of foot care in social care centers” represents evaluation results for necessity of professional foot care in social care centres. Necessity for professional foot care has been viewed in podological aspect. Methods: Qualitative and Quantitative Research Method. Research tool – foot examination protocol.

Results: Of the 750 surveyed customers in 15 of Latvia’s SCC’s, the largest share – 87 % are 75 years old and older. 35 % of the respondents were asleep, 89 % of the respondents have reduced movement in their hands, and 11 % have a hand paresis that makes foot care by themselves completely impossible.

62 % of the SCC clients are in the high-risk category because in addition to the physiological age, some have type 2 diabetes with late complications, osteoarthritis, peripheral circulation disorder, post-stroke condition and osteoporosis.

12 % of the patients were found with chronic foot and lumbar ulcers and bedsore, which condition did not meet modern wound care recommendations.

93 % of the respondents have thickened nails, of which 37 % have signs of mycotic infections and 17 % have an altered nail growth direction.

In most SCC's (11 out of 15), the SCC podologist is not available, and client foot care is provided by a caregiver – 75 %, a client himself – 23 % or a room neighbor – 1 %, rarely relatives ~ 1 %, thus increasing the risk of the health status deterioration of the client.

Major conclusions: 99 % of the respondents need professional foot care, which can be provided by the podologist who reduces or eliminates the risk of foot injuries and facilitates the work of a social caregiver and reduces health care costs for the SCC's clients in the long run.

Given that 62 % of respondents are in the high-risk category, it is important for interdisciplinary health care teams to work with specialists such as podologists, family doctors, orthopedists, endocrinologists, and others.

Literatūra **References**

- Campbell, J. A. (2006). Characteristics of the foot health of 'low risk' older people: A principal components analysis of foot health measures. *Foot Edinburg* (lpp. 44-50). Amsterdam: Elsevier Science B.V., Amsterdam.
- Frowen, P., O'Donnell, M., Lorimer, D., & Burrov, G. (2006). *Neale's Disorders of the Foot*. Livingston: Churchill Livingstone Elsevier.
- LU PSK zinātniski pētnieciskā projekta darba grupa. (2017). *Ārstnieciskās pēdu aprūpes nepieciešamības izvērtējums sociālās aprūpes iestādēs. LU PSK zinātniski pētnieciskā projekta ziņojums*. Jūrmala: LU PSK nepublicēts dokuments.
- Ivanova, T., & Saulīte, M. (2014). *Vadlīnijas podoloģijā. Latvijas Podologu biedrības izdevums*. Rīga: WorwargPfarma.
- IWGDF. (2007). *International Consensus on the Diabetic Foot and the Practical Guidelines*. Belgium: International Working Group on the Diabetic Foot (IWGDF)/ Consultative section of the IDF.
- LKD. (2017. gada 25. 08). *Podologa profesijas standarts*. Ielādēts no Latvijas kvalifikāciju datubāze: <https://www.latvijaskvalifikācijas.lv/kvalifikacija/pirma-limena-profesio-nalas-augstakas-izglitibas-diploms-ar-profesionalo-kvalifikaciju-podologs>
- Niederau, A. (2009). *Das große Buch der Nagelkrankungen*. Verlag Neuer Merkur GmbH.
- Saeima, LR. (2002. gada 31. 10). *Sociālo pakalpojumu un sociālās palīdzības likums*. Ielādēts 2017. gada 30.05 no Latvijas republikas tiesību akti: <https://likumi.lv/doc.php?id=68488>
- SPKC. (2012). *Latvija gados vecu iedzīvotāju veselības stāvoklis un to ietekmējošie faktori*. Rīga: Slimību un profilakses kontroles centrs.
- Statistikas pārvaldes dati. (2017. gada 15.02). Rīga. Ielādēts 2017. gada 15.05. no <http://ec.europa.eu/eurostat>

PARENT SATISFACTION WITH TREATMENT AND CARE SERVICES WITHIN THE FRAMEWORK OF PEDIATRIC PALLIATIVE CARE IN LATVIA

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Abstract. *The number of children prenatally or after birth diagnosed with a disease with no prevent radical treatment options in Latvia and worldwide constantly increases. Pediatric palliative care in Latvia is organized in the form of a home hospice care model. It is instrumental to establish the level of patients' satisfaction with the provided care and treatment services. The objective of the study is to evaluate patient satisfaction with care and treatment services under the offered pediatric palliative care model. The study sample comprises 153 parents with children receiving palliative care services. The study is based on the quantitative research method: patient satisfaction survey. The parental satisfaction was measured in six subcategories: networking and collaboration, follow-up care, funding, access, clinical capacity building and outreach. According to the outcomes of the study, the level of satisfaction with the provided treatment and care services under the hospice palliative care model is average. The lowest score was given to collaboration and access categories, whereas the highest score was awarded for the continuity (follow-up) of care and funding.*

Keywords: *incurable disease, pediatric palliative care model, satisfaction.*

Introduction

Adult palliative care is known for long, however, what concerns the pediatric care – it is a new subspeciality (Pelant et al., 2012; Moore & Sheetz, 2014). Pediatric palliative care comprises active, fully comprehensive care of children with progressive chronic diseases in case all radical treatment options have been exhausted. The family with an incurably sick child is at the forefront of pediatric palliative care. The objective of palliative care is to ensure possibly better quality of life for patients and their families. Such type of care combines alleviation of pain and other symptoms with psychological, social, and spiritual support, allowing the patient to feel maximally comfortable and making it possible for the child to use its functional abilities to the extent maximally possible, ensuring such level of care that would make him feel as good as possible and would listen to his wishes.

Pediatric palliative care is available in Latvian since 1998 and it is implemented in the form of home hospice palliative care model. The pediatric palliative care is not equally accessible to all palliative care patients as the service is provided to patients living in Riga and Kurzeme regions. The number of patients from other geographical regions of Latvia receiving palliative care service is limited. In case of aggravation, these children may receive stationary medical assistance at hospitals with special pediatric treatment departments, nevertheless these institutions provide no palliative care. Children with palliative care status may receive medical services at day centres that provide palliative care and long stay social care institutions.

Due to the increasing number of children requiring palliative care, the topic is gaining topicality. In 2012 pediatric palliative care at home under the supervision of palliative care service was received by 143 patients, in 2013 by 159 patients and in 2014 by 164 patients (BPAB data). Currently palliative care at home is provided by two organizations and the service is also ensured by long-stay and short-stay social rehabilitation facilities. In the absence of a coordinated system for the care of incurably sick children and their family members, and considering that pediatric palliative care has not been marked out as a separate area of healthcare, the purpose of this article is to evaluate patients' satisfaction with the access to medical treatment and care services in Latvia within the framework of the existing palliative care pattern. The survey is based upon the quantitative research method, involving 153 parents with a child who receives palliative care services. We use two research tools: sociodemographic survey and patient satisfaction survey. Patient satisfaction survey consists of 39 questions. All questions are divided in 6 subcategories: networking and collaboration, follow-up care, funding, access, clinical capacity building and outreach. Each question evaluated in Likert's scale. For determination of internal coherence, we use coefficient of Cronbach's alpha. The Cronbach's alpha in all subscales is from 0,53 to 0,72, which indicates moderate and high reliability. For data processing we use frequency calculation – average and standard deviation. For comparison data in two or more categories we use Mann – Whitney U test and Kruskal – Wallis H test. Comparing the group by certain qualitative sign we use Pearson square test.

Historical perspective of the development of pediatric palliative care

The concept of palliative care originally evolved from the hospice philosophy of meeting gaps in care for seriously ill and dying patients. The Latin word palliate means “conceal or alleviate symptoms without curing” (Romesburg, 2007).

In Greece 1000 BC there were special shelters for weary and sick wanderers to die. In the Middle Ages religious orders set up hospices for wanderers. A hospice to care for the dying was opened in 1843 in Lyon.

The forefather of the modern hospice and palliative care movement is Dame Cicely Saunders, who set up the first modern hospice programme in the United Kingdom in 1967 emphasizing the importance of compassionate care and medical science. The St. Christopher's Hospice was opened in the United Kingdom the same year (Georges, Grypdonck, & Dierckx de Casterle, 2002).

The Dean of Yale University Florence Wald invited Saunders to visit the United States of America for an experience exchange visit in hospice development and in 1974 she started the first home-care programme in Connecticut (Morgan, 2009).

The first pediatric palliative care hospice in England was opened in 1982. (Foster, 2007). In 1990 the World Health Organization introduced and drew up a formal definition of palliative care as "active total care of patients whose disease is not responsive to curative treatment". The World Health Organization describes pediatric palliative care as a total care of the child's body, mind and spirit, also involving support to the family (WHO, 2004). The first pediatric hospices in Eastern Europe were opened in 1994 in Warsaw (Poland) and in Minsk (Byelorussia) (Bjaliks, Buhni, Voloks, & Ceitlings, 2004).

A palliative care unit for adults was opened in the Oncology Centre of Latvia in 1997 (Sosārs, 2005), whereas the Latvian Society for Children Palliative Care was established in January 1998.

The Society for Children Palliative Care of Latvia provides home-care services since 1998. Initially the pediatric palliative care service operated only in Riga and rendered services only to patients residing in the city of Riga. The participation in various projects and attraction of EU funding made it possible to implement projects for training two mobile palliative care units in the cities of Liepaja and Livani. Due to the shortage of staff currently pediatric palliative care is provided only by the Liepaja team, which renders home-care service. There are several generally accepted palliative care models covering consultative care, outpatient care, inpatient care, home-care and hospice care.

Recipients of pediatric palliative care

Pediatric palliative care is accessible to children with incurable chronic diseases under the age of 18 years and their family members. Most common disease groups in pediatric palliative care are hemato-oncological diseases, inborn genetic and multiple organ failure, heart, kidney, liver, lung and neurological disorders in late stage, immunodeficiency Feudtner et al., 2002).

Four different categories of chronic incurable diseases have been identified for pediatric palliative care:

(1) life-threatening conditions where curative treatment may be feasible but may fail and where palliative care may be necessary in addition to treatment;

(2) conditions for which there may be long phases of intensive treatment aimed at prolonging life and allowing participation in normal childhood activities, but premature death is still possible;

(3) progressive conditions without curative treatment options, where treatment is exclusively palliative and may commonly extend over many years; and

(4) conditions with severe, non-progressive neurological disability which may deteriorate unpredictably, causing complications and premature death possibility (Himmelstein, 2006).

As there is a wide range of chronic incurable diseases and lack of a specific definition in circumstances where curative medicine subsists alongside with the palliative care, the following relationships between curative and palliative services should be distinguished:

1. With the disease progressing, emphasis is gradually shifted from the curative treatment to palliative care.
2. To prolong and achieve the best possible quality of life, highly invasive treatment may be applied alongside with palliative care, each of these methods at the respective stage of the disease.
3. No treatment is possible and palliative care is applied immediately after diagnosis.
4. Initially it is not clear whether it is an incurable disease, and palliative care is started immediately after approval of this fact (Recommendations of the Committee of Ministers of Member States on the organization of Palliative Care, 2003).

Notwithstanding the group to which the disease of an incurably sick child belongs, there are multiple various profile specialists involved in his/her care. Palliative care patients receive healthcare services in different forms integrated within the pediatric palliative care models.

Pediatric palliative care team

Palliative care evolves from religion and patient care and not from medical treatment. Due to this the modern palliative care draws heavily on a broad spectrum of disciplines, knowledge, skills and creative thought (Crawford & Price, 2003). A condition precedent for solving the complex care issues of a patient with limited life expectancy is the involvement of a multidisciplinary team

in the treatment and care to ensure qualitative assistance (Valadares, Mota, & Oliveira, 2014).

Palliative care is based upon holistic approach to caring which perceives a human as the totality of all existential dimensions of an individual. The model distinguishes four dimensions: somatic, social, psycho-emotional and spiritual. Any disturbances of one dimension will cause disturbances in others, therefore the palliative care team consists of a multidisciplinary team (Mok, 2004). In case of pediatric palliative care the skills base and personal experience in working with children and their families is of fundamental importance. The individual interpersonal qualities of each specialist play an equally important role for building positive relations with the family and for rendering necessary assistance in crisis situation. Pediatric palliative care is provided by a multidisciplinary care team composed of: palliative care physician, palliative care nurse, social worker specializing in palliative care, chaplain, psychologist and psychotherapist (Ahmedzai et al., 2004).

Children with life-limiting and life-threatening disease and their families have diverse and mutable priorities that include clinical needs, psychosocial needs, social needs and spiritual needs. To provide adequate patient care, however, it is also important to contextualize and assess the needs of the team taking care of these patients and their families, to find new ways to provide patient care (Benini, Spizzichinto, Trapanotto, & Ferrante, 2008). It is important to involve a multi-disciplinary team in the care of an incurably sick child as soon as possible as early work with the family results in better patient and his/her family oriented care outcomes (Miller et al., 2015). The achievement of these objectives is the most important aim to be achieved by the palliative care team, irrespective of the patient's life expectancy.

Parental satisfaction with palliative care service

According to the average score provided for the sub-category: mutual cooperation of palliative care organizations (M= 14.58, (SE = 4.72) min.12, max. 36) there is room for the conclusion that patients are not satisfied with the mutual cooperation of the organizations involved in providing palliative care. Considering the fact that the majority of the respondents are parents of children receiving palliative care services, the most impartial indicator to characterise patient satisfaction with the mutual cooperation of the organizations involved in providing palliative care would be satisfaction with the care received at practitioners – specialists at health centres (primary healthcare). The results show overall average satisfaction (46.3 %) with the received service. According to the results, fully satisfied with the received service are parents caring for a child who receives palliative care services for a rather long period of time, whereas

dissatisfied are parents whose children receive the service for a comparatively shorter period of time.

Presumably, this could be explained with the parental inability to accept the child's disease in short-term perspective as their hope and expectations regarding the child's health condition contradict the explanations provided by medical staff on the disease and its progression what also affects the level of parental satisfaction. These outcomes might also point to the lack of care consistency and proper follow-up care for a patient moving from one care level to another what is one of the most important healthcare quality and patient satisfaction dimensions (Gerteis et al., 1991; Zimmermann et al., 2008). The comparison of the data on patient satisfaction with the pediatric palliative care services depending on the patient's place of residence reveals that the patients living in Riga region are less satisfied with the mutual cooperation of care organizations.

The average score received in the funding sub-category of the patient satisfaction survey ($M = 15.29$, $(SE = 4.50)$ min. 9, max. 27) reveals average satisfaction – 39.9 % of the surveyed families in average are satisfied with the frequency of home visits of palliative care specialists under the state-funded palliative care. Fully satisfied with the frequency of home visits are 41.8 % of families living in Riga region, followed by 37.5 % Vidzeme region families. The satisfaction scores could be attributed to the vicinity (in terms of distance) of the patient's residence to the workplace of palliative care specialists, as the majority of the respondents are from Riga region. The result could be equally attributed to the limited number of specialists providing palliative care services, as emotionally it is a very tense work.

The average care consistency and follow-up score provided in the patient satisfaction survey ($M = 6.99$, $(SE = 2.07)$, min. 3, max. 9) reveals that patients are satisfied with the available follow-up care, i.e. 94 % of the surveyed families are satisfied with the possibility to receive palliative care service 24 hours a day 7 days a week. This indicator is equally high for families caring for one and for two children. An incurably sick child is an emotional journey and at times the parents are under permanent strain, and any changes in the child's health condition only increase it. The possibility to address a specialist 24/7 is the starting point for solving problems related to child's health and care. The outcomes are based upon multiform needs and the course of the disease which frequently requires immediate action by medical and care staff. Less satisfied with the availability of follow-up care are families with incurably sick children from Zemgale region.

Table 1 Satisfaction with the possibility of receiving palliative care 24/7 depending on number of children in the family receiving palliative care services

Satisfaction with the continuity of care			Number of children in family		Total
			1 child	2 children	
Satisfaction with the possibility of receiving palliative care 24/7	Partly satisfied	Number (n)	5	3	8
		Percent	4,0%	42,9%	6,0%
	Fully satisfied	Number (n)	121	4	125
		Percent	96,0%	57,1%	94,0%

The average palliative care availability ratio ($M = 6.12$, ($SE = 3.07$), min. 4, max.12) received under the patient satisfaction survey demonstrates low satisfaction in this category. The analysis of the average indicators provided in six sub-categories of the satisfaction survey reveal average satisfaction with the received medical treatment and care services under palliative care. According to a study by Akemi et al. (2012) about 20 % reported that improvement is necessary in physical care by physicians, physical care by nurses and coordination/ consistency of care.

The results of the palliative care accessibility category which characterizes patients' satisfaction with the received healthcare services at patient's home (home care) depending on the age of the child, demonstrate that 64.5 % of the surveyed families were satisfied with the received service. Most dissatisfied with the service were families with a child receiving palliative care living in Zemgale region. Global studies have shown that for promoting accessibility of palliative care in case of limited resources, telephone consultations or telemedicine may be used (Bradford et al., 2014).

The average score of the capacity building category ($M = 15.16$, ($SE = 3.74$), min.7, max.21) reveals average and high satisfaction with the professional knowledge and skills of care specialists, the educational work and the possibilities to participate in training organized by professionals – 42.4 % of the surveyed families have given an average score for the provided training options. The families from Latgale region are completely satisfied with the availability of training, the patients from Riga region are partially (53.4 %) satisfied, whereas 53.3 % of patients from Vidzeme region are dissatisfied with the offered training options.

Table 2 Satisfaction with opportunity to participate in professional child-care training depending on the place of residence

Capacity building			Place of residence				Total
			Riga reg.	Zemgale reg.	Vidzeme reg.	Latgale reg.	
Satisfaction with opportunity to participate in professional child-care training	Never satisfied	Number (n)	14	2	8	0	24
		Percent	24,1%	25,0%	53,3%	0,0%	28,9%
	Partly satisfied	Number (n)	31	2	2	0	35
		Percent	53,4%	25,0%	13,3%	0,0%	42,2%
	Fully satisfied	Number (n)	13	4	5	2	24
		Percent	22,4%	50,0%	33,3%	100,0%	28,9%

The average score received in the sub-category - awareness raising (M = 3.51, (SE = 1.12), min.2, max.6) indicates towards average level of satisfaction – 50.9 % of the patients are generally satisfied with the possibility to participate in awareness raising events on children requiring special care. The result could be explained with the increasing popularity of such events. The data obtained under the study on patient satisfaction with awareness raising activities regarding children with special needs are of general nature as the awareness raising and integration of children with special needs into the society is a separate area to be surveyed independently.

Conclusions

Pediatric palliative care in Latvia is ensured in the form of home hospice care. Home hospice palliative care is provided by a separate team which is part of a health care organization. This model contributes to the possibility for the patient and its family to stay longer at home. The care and support for the patient and its family is provided by a multidisciplinary team.

A fundamental aspect of palliative care is the continuity of care which involves availability and follow-up by healthcare specialists, access to information and other medical treatment and care related resources. On the basis of the average results of the patient satisfaction survey provided in six sub-categories, it can be concluded that in average patients are satisfied with the medical treatment and care services received in the form of hospice care.

References

- Ahmedzai, S. H., Costa, A., Blengini, C., Bosch, A., Sanz – Ortis, J., Ventafridda, V., & Verhagen, S. C. (2004). A new international framework for palliative care. *European journal of cancer*, 40, 2192 – 2200.
- Akemi, Y., Tatsuya, M., Mitsunori, M., Ayumi, I., Miki, A., Nobuya, A., Yutaka, S., & Kenji, E. (2012). Pain intensity, quality of life, quality of palliative care, and satisfaction in outpatients with metastatic or recurrent cancer: a Japanese, nationwide, region – based, multicentre survey. *Journal of pain and symptom management*, 43 (3), 503 – 514.
- Benini, F., Spizzichinto, M., Trapanotto, M., & Ferrante, A. (2008). Pediatric palliative care. *Italian Journal of pediatrics*, 34 (4), 1 – 9.
- BPAB reports from January 2012 – December 2014.
- Bradford, N. K., Armfield, N. R., Young, J., & Smith, A. C. (2014). Paediatric palliative care by video consultation at home: a cost minimisation analysis. *BMC Health service resources*, 28. doi: 10.1186/1472-6963-14-328.
- Crawford, G. B., & Price, S. (2003). Team working: palliative care as a model of interdisciplinary practice. *Medicine journal of Australia*, 179 (6), 32 – 34.
- Feudtner, C., Christakis, D. A., Zimmerman, F. J., Muldoon, J. H., Neff, J. M., & Koepsell, T. D. (2002). Characteristics of Deaths Occurring in Children's Hospitals: Implications for Supportive Care Services. *Paediatrics*, 109 (5), 887 – 893.
- Foster, T. L. (2007). Pediatric palliative care revisited: a vision to add life. *Journal of hospice and palliative nursing*, 9 (4), 212 – 219.
- Georges, J. J., Grypdonck, M., & Dierckx de Casterle, B. (2002). Being a palliative care nurse in an academic hospital: a qualitative study about nurses perceptions of palliative care nursing. *Journal of clinical nursing*, 11 (6), 785 – 793.
- Gerteis, M., Edgman-Levitan, S., & Daley, J. (1993). *Through the Patient's Eyes. Understanding and Promoting Patient-Centered Care*. San Francisco: Jossey-Bass.
- Himelstein, B. P. (2006). Palliative care for infants, children, adolescents and their families. *Journal of palliative medicine*, 9 (1), 163 – 181.
- Miller, E. G., Frizzola, M. A., Levy, C., & Greenspan, J. S. (2015). Recent experience establishing a new pediatric palliative care team. *The journal of pediatric*, 166 (1), 4 – 5.
- Mok, E. (2004). Nurse – patient relationships in palliative care. *Journal of advanced nursing*, 48 (5), 475 – 483.
- Moor, D., & Sheetz, J. (2014). Pediatric palliative care consultation. *Pediatric clinics of North America*, 61 (4), 735 – 747.
- Morgan, D. (2009). Caring for dying children: assessing the needs of the pediatric palliative care nurse. *Pediatric nursing*, 35 (2), 86 – 90.
- Pelant, D., McKaffrey, T., & Beckel, J. (2012). Development and implementation of pediatric palliative care program. *Journal of Pediatric nursing*, 27, 394 – 401.
- Recommendation Rec (2003). 24 of the Committee of Ministers of member states on the organization of palliative care. Adopted by the committee of Ministers on 12. November 2003 at the 860th meeting of the Ministers Deputies Council of Europe, 2005; 1 – 77.
- Romesburg, T. L. (2007). Building a case of neonatal palliative care. *Neonatal network*, 26 (2), 111 – 115.
- Sosārs, V. (2005). Paliatīvā aprūpe – svinot nozares desmit gadu jubileju. *Doctus*, 8, 46 – 47.
- Valadares, M. T., Mota, J. A. C., & Oliveira, B. N. (2014). Palliative care in pediatric hematological oncology patients: experience of a tertiary hospital. *Brazilian Journal of Hematology and Hemotherapy*, 36 (6), 403 – 408.

Kalniņa & Deklava, 2018. Parent Satisfaction with Treatment and Care Services Within the Framework of Pediatric Palliative Care in Latvia

World Health Organization (2003).

Zimmermann, C., Riechelmann, R., Krzyzanowska, M., Rodin, G., & Tannock, I. (2008). Effectiveness of specialized palliative care: a systematic review. *Journal of the American Medical Association*, 299 (14), 1698 – 1709.

Бялик, М. А., Бухны, А. Ф., Волох, С. А., & Цейтлин, Г. Я. (2004). О создании системы паллиативной помощи для детей с онкологическими заболеваниями. *Вопросы гематологии/онкологии и иммунологии в педиатрии*, 4 (4), 61–69.

САМООЦЕНКА СВОЕГО ЗДОРОВЬЯ УЧИТЕЛЯ ФИЗИЧЕСКОЙ КУЛЬТУРЫ КАК ФАКТОР, ОПРЕДЕЛЯЮЩИЙ КАЧЕСТВО ЕГО ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ

Self-Evaluation of Physical Education Teachers' Health as a Factor for Quality of Professional Activities

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Abstract. *Physical education teacher, as a profession, has various duties, which impact teacher's physical and emotional health. This may have an effect on quality of lessons. The aim of the research is to establish the self-evaluation of PE teachers' health. The following indicators of health self-evaluation were chosen: taking care of one's health, health condition and its evaluation. Questionnaires were used to self-evaluate PE teachers' health, to point out diseases such as having a cold, also various somatic and psychosomatic disorders. The sample of the research was 324 PE teachers, randomly chosen from high schools in Lithuania. The average age of the participants was $44,59 \pm 0,57$ years old, their pedagogical work experience - $20,52 \pm 0,58$ years. It was found that only 29,1 per cent of female and 18,3 per cent of male participants rated their health as good. Teachers who evaluated their health positively more seldom experienced various somatic and psychosomatic disorders. Teachers with more than 20 years of work experience rarely evaluated their health as good. In addition, they more frequently experienced various disorders.*

Women, when compared to men, are more prone to health disorders. Furthermore, women with more than 20 years of work experience more rarely fell into the group of long-term somatic and psychosomatic disorders.

Keywords: *disorder, physical education teacher, professional activity, subjective health evaluation.*

Введение

Introduction

Учитель физической культуры, укрепляя физические способности учеников, демонстрирует им разные движения, что, в свою очередь, требует надлежащим образом подготовленного пространства для выполнения физических упражнений. Поэтому ему приходится не только перекладывать разные приспособления, имеющие неодинаковый вес, но и перенести их в

другие места (Goossens et al., 2016). Кроме того, физическую нагрузку увеличивает продолжительность стоячего положения и постоянное перемещение для коррекции деятельности учеников (Trinkūnienė & Adžgauskas, 2015). Такая профессиональная деятельность учителя физической культуры возбуждает не только разные недомогания (особенно боли в области поясницы), но и приводит к возникновению травм верхних и нижних конечностей (Eric & Smith, 2011), которые, в свою очередь, нарушают учебный процесс (Kovac et al., 2013) и негативно влияют на здоровье учителей (Trinkūnienė, 2014). По данным эпидемиологических исследований, выполнение разных должностных обязанностей в урочное и внеурочное время отрицательно сказывается на физическое и психическое здоровье учителей физической культуры (Eric & Smith, 2013). Описанная ситуация актуализирует необходимость предупреждения травм (NASPE, 2004), влияющих на психическое здоровье учителя физической культуры (Goossens et al., 2016), которое, будучи связана с разными соматическими и психосоматическими недомоганиями, может оказать влияние и на качество его профессиональной деятельности.

Превентивный подход к здоровью личности акцентирует, что эпидемиология и этиология недомоганий в той или иной популяции должна быть определена еще до разработки программы здоровья (Van Mechelen et al., 1992). Поэтому важность оценки недомоганий, проявляющихся в профессиональной деятельности учителя физической культуры, наряду с субъективной оценкой физического и психического здоровья, обосновало исследование, целью которого явилось определение самооценки своего здоровья учителями физической культуры как фактора, определяющего качество их профессиональной деятельности.

Методика исследования *Methodology of research*

Планируя исследование опирались на количественный ее подход, позволяющий раскрыть не только разные связи между переменными, но и обобщить их для исследуемой популяции, в данном случае для всех учителей физической культуры Литвы.

Участники исследования. Для достижения поставленной цели была сконструирована независимая выборка из 324 учителей физической культуры, которые путем случайной выборки были подобраны из разных общеобразовательных школ Литвы (160 учителей из пяти больших городов, 93 учителя из городов в количестве жителей до 50 тыс. и 71 учитель из районных школ). Все они согласились принять участие в исследовании. Мужчин в исследовательской выборке было 183 (56,5 %), женщин – 141

(43,5 %). Данное соотношение мужчин и женщин в основном соответствовало их распределению в популяции (соответственно 55,9 % и 44,1 %). Средний возраст испытуемых - $44,59 \pm 0,57$ года, а стаж их педагогической работы в школе – $20,52 \pm 0,58$ года.

Методы исследования. Для оценки физического здоровья был применен вопросник (Masiliauskas & Kardelienė, 2012), в котором одна из шкал была предназначена для самооценки здоровья, а по ответам на вопрос о том, как учителя заботятся о ней, все участники исследования были распределены на две группы: в одну из них вошли те, которые равнодушны к своему здоровью (выбрали варианты ответов *совсем не заботятся* и *не заботятся*), а во вторую – те, которые озабочены им (выбрали варианты ответов *очень заботятся* или *заботятся немного*). При этом просили предоставить информацию о том, сколько раз за последние 12 месяцев они болели гриппом, из-за чего им пришлось отлеживаться более одного дня (или были простудившимися), и сколько раз за последние шесть и 12 месяцев они обращались к врачу (за исключением визитов к одонтологу).

Состояние здоровья определялось и по шкале из 10 показателей (Stock & Kramer, 2000), в которой учителя физической культуры указали, как часто за последние 12 месяцев они испытывали разные недомогания. По частоте процентного распространения недомоганий были созданы две группы. В одну вошли те, у которых недомогания проявлялись редко или лишь эпизодически, а в другую – те, которых разные расстройства организма утомляли очень часто или часто. Все варианты ответов были оценены соответствующим баллом (один балл – никогда не утомляли недомогания, четыре балла – очень часто утомляли). Полученные данные позволили вычислить балл недомоганий, по которому все участники исследования были распределены на две группы: в одну из них вошли те, которые постоянно и часто испытывают недомогания (сумма их собранных баллов была выше медианы), а во вторую – те участники исследования, которые недомогания испытывают лишь эпизодически (сумма их собранных баллов была равна или ниже медианы).

Процедуры исследования. Вопросники учителям физической культуры были разделены во время семинаров и сразу собраны после их заполнения. Такая процедура гарантировала высокий процент возврата опросников. Опросники заполняли учителя, участвовавшие в семинарах, а разделил их и на вопросы отвечал исследователь. Во время инструктажа учителя были ознакомлены с инструкцией заполнения опросника, а также им была объяснена цель проводимого исследования и как будет обеспечена их анонимность.

Статистический анализ. Гипотезы исследования проверялись с помощью критериев Хи-квадрата, t-Стьюдента и Mann-Withney U теста, а

также был проведен факторный анализ результатов исследования. Результаты считались статистически достоверными, если вероятность ошибки была не ниже 95 процентов.

Результаты исследования *Results*

Ответы участников исследования показали, что 29,8 % женщины 23,6 % мужчин ($p < 0,08$) очень заботятся о своем здоровье. Различий по этому показателю в группах педагогического стажа не обнаружено. Поскольку субъективная оценка своего здоровья трактуется как объективный (Klumbienė, 2008) и информативный показатель здоровья (Burstrom & Fredlund, 2001), то по результатам нашего исследования только 29,1 % женщин 18,3 % мужчин ($p < 0,1$) свое здоровье оценили как хорошее. В данном случае, как и по показателю о заботе своего здоровья, выявлена лишь тенденция половых различий в отношении испытуемых к своему здоровью. Более существенные различия выявлены между группами учителей, которые были распределены по стажу педагогической работы. Лучше свое здоровье как хорошее оценили учителя, имеющие меньший стаж педагогической работы по сравнению с теми, у которых стаж педагогической работы был больше (соответственно 27,5 % и 18,0 %; $p < 0,001$). Больше среди первых оказалось и тех, кто свое здоровье оценили как достаточно хорошее (47,3 % и 30,7 %; $p < 0,001$).

Достоверных различий по частоте простудных заболеваний за прошедшие 12 месяцев между мужчинами и женщинами не выявлено, хотя тенденциозно чаще болели женщины (соответственно $0,54 \pm 0,09$ и $0,39 \pm 0,05$ раза). Не различались и показатели по частоте визитов к врачу за прошедшие шесть и 12 месяцев. Различия выявлены в группах педагогического стажа. Те учителя, у которых стаж педагогической работы был больше 20 лет, чаще за последние шесть месяцев обращались к врачу. Достоверность различий выявлена как по критерию Стьюдента ($0,97 \pm 0,12$ и $0,63 \pm 0,09$ раза; $p < 0,02$), так и по Mann-Whitney U тесту (170,07 и 151,84; $p < 0,05$). Показатели последнего обнаружили, что женщины с большим стажем педагогической работы также имели больше визитов у врачей за тот же самый промежуток времени (76,71 и 63,79; $p < 0,03$).

Какие и как часто учителя физической культуры за последние 12 месяцев испытывали психосоматические и соматические недомогания, видно из данных, представленных в табл.1. Варианты ответов *достаточно часто* и *очень часто* в таблице соединены.

Таблица 1. Психосоматические и соматические недомогания, за последние 12 месяцев утомлявшие учителей физической культуры (%)
 Table 1 Somatic and psychosomatic disorders experienced by physical education teachers in the past 12 months (%)

Недомогания	Мужчины	Женщины
Головные боли	12,3	29,0**
Беспокойство	21,1	35,5*
Депрессивность	7,3	12,5
Расстройство сна, бессонница	19,3	10,7
Учащенное сердцебиение, головокружение	11,7	22,6*
Понос	5,0	3,6
Запор	2,8	18,7**
Недомогания желудка, изжога	22,8	24,1
Боли спины	38,7	40,6
Боли затылка или плеча	24,4	23,9

Примечание. * - $p < 0,01$; ** - $p < 0,001$

Из приведенных в таблице данных видно, что за последние 12 месяцев женщины чаще претерпевали головную боль, беспокойство, учащенное сердцебиение, головокружение, запор. Достоверные различия выявлены и между группами учителей, которые были распределены по стажу их педагогической работы. Установлено, что учителя, имеющие больший стаж педагогической работы, чаще жаловались на сердцебиение, головокружение (22,4 % и 10,8 %; $p < 0,01$), а также на боли затылка или плеча (31,8 % и 17,5 %; $p < 0,01$). Неодинакого в группах педагогического стажа распределились данные между мужчинами и женщинами.

Сравнительный анализ показал, что женщины, у которых стаж педагогической работы был больше, чаще жаловались на расстройство сна, бессонницу (30,0 % и 10,7 %; $p < 0,005$), сердцебиение и головокружение (35,6 % и 12,0 %; $p < 0,01$), понос (8,5 % и 0,0 %; $p < 0,01$), в то время как мужчины с таким же стажем педагогической работы чаще жаловались лишь на боли затылка или плеча (соответственно 33,7 % и 15,6 %; $p < 0,01$). Выявлены различия в группах учителей с разным стажем педагогической работы свидетельствуют о влиянии продолжительного воздействия профессиональных стрессоров на состояние здоровья учителей физической культуры.

Факторный анализ недомоганий (коэффициент КМО был равен 0,77) выделил три фактора, охватывающих 57,4 % рассеяния исследуемых признаков (табл. 2).

Таблица 2. Данные факторного анализа психосоматических и соматических недомоганий

Table 2 Factorial analysis data of somatic and psychosomatic disorders

Фактор и его переменные	Факторный вес переменных
<i>Психосоматические недомогания</i>	
Беспокойство	0,78
Депрессивность	0,75
Расстройство сна, бессонница	0,71
Учащенное сердцебиение, головокружение	0,65
Головные боли	0,55
<i>Гастроинтестные недомогания</i>	
Запор	0,54
Понос	0,73
Недомогания желудка, изжога	0,72
<i>Боли спины, затылка или плеча</i>	
Боли спины	0,83
Боли затылка или плеча	0,84

Согласно данным, приведенным в табл.2, чаще учителя физической культуры жаловались на боли спины, затылка или плеча, а также их преследовали и такие психосоматические недомогания, как беспокойство и депрессивность. Для более детального анализа данных факторного анализа каждому выделенному фактору подсчитывался суммарный балл, причем отдельно как в группе мужчин, так и женщин (табл.3).

Таблица 3. Средние баллы факторов психосоматических и соматических недомоганий (СО)

Table 3 Median scores of factors of somatic and psychosomatic disorders (SE)

Факторы	Мужчины	Женщины
Психосоматические недомогания	1,8±0,04	1,95±0,04*
Гастроинтестные недомогания	1,63±0,04	1,7±0,04
Боли спины, затылка или плеча	2,18±0,06	2,1±0,07

Примечание. СО — стандартная ошибка.* - $p < 0,05$

Цифры, указанные на табл. 3, свидетельствуют о том, что чаще недомогания учителя физической культуры претерпевали из-за болей спины, затылка или плеча. К тому же, по данным таблицы, женщины чаще мужчин жаловались на психосоматические недомогания. По частоте недомоганий участники исследования распределены на две группы: претерпевающие кратковременные и долговременные недомогания. Установлено, что в группе долговременных недомоганий оказалось больше тех учителей, у которых стаж педагогической работы был выше 20 лет

(59,3 % и 42,6 %; $p < 0,004$). Примечательно, что в данной группе оказалось больше мужчин по сравнению с теми, у которых стаж педагогической работы был меньше 20 лет (57,1 % и 36,4 %; $p < 0,006$), а по отношению женщин выявлена лишь такая тенденция (62,5 % и 50,0 %).

Следует подчеркнуть, что те учителя, которые свое здоровье оценили как хорошее и достаточно хорошее, реже жаловались на психосоматические ($1,7 \pm 0,03$ и $2,15 \pm 0,05$ балла; $p < 0,001$) и гастроинтестные ($1,56 \pm 0,03$ и $1,82 \pm 0,05$ балла; $p < 0,001$) недомогания, а также на боли спины, затылка или плеча ($1,94 \pm 0,05$ и $2,48 \pm 0,07$ балла; $p < 0,001$) по сравнению с теми, которые свое здоровье оценили как среднее или достаточно плохое. У менее положительно оценивших свое здоровье учителей выявлен и более высокий суммарный балл недомоганий ($21,23 \pm 0,4$ и $17,21 \pm 0,26$ балла; $p < 0,001$).

Обсуждение результатов *The discussion of the results*

Роль учителя физической культуры в школе актуализируется понятием, что урок физической культуры является одним из основных факторов, могущих поощрять физическую активность школьников в свободное время и прививать им эти навыки на всю оставшуюся жизнь. Однако реализация задач, направленных на укрепление здоровья учеников, во многом зависит от эмоционального самочувствия учителей физической культуры, состояния их здоровья.

Результаты исследования по определению субъективной оценки здоровья учителей физической культуры показали, что женщины, независимо от стажа педагогической работы, чаще мужчин испытывали беспокойство, учащенное сердцебиение, головокружение, головную боль. Полученные данные подтверждены результатами исследования, проведенного в Китае среди учителей физической культуры. Установлено, что женщины чаще испытывают эмоциональное напряжение, притом они должны выполнять обязанности по дому, поэтому очевидны различия мышечной силы и структуры мышц (Erick & Smith, 2013). Обнаруженные различия авторы объясняют меньшей физической активностью женщин в свободное время, из-за чего отдельные группы мышц не укрепляются, сила их снижается, что несомненно сказывается на распространении боли спины, затылка или плеча. К тому же, они больше уделяют времени обучению учеников на уроках.

На возникновение недомоганий могут повлиять и дополнительные работы, связанные с подготовкой спортивного инвентаря для проведения уроков (например, с перенесением тяжелого спортивного оборудования). Влияние условий труда на возникновение недомоганий преимущественно

среди учительниц физической культуры выявлено в исследованиях, проведенных в Бразилии (Erick & Smith, 2013). Вместе с тем было обращено внимание, что заработная плата у женщин нередко бывает меньшей, несмотря на одинаковые должностные требования, а также им реже предлагают руководящие должности. Комментируя эти результаты вышеуказанные авторы опираются на выводы психологов здоровья и подчеркивают, что женщины по сравнению с мужчинами более чувствительны к боли и чаще желают высказаться об этом. Это в какой-то мере может быть связано как с результатами нашего исследования, так и с данными других авторов, в исследованиях которых выявлено, что учительницы физической культуры (преимущественно с большим стажем педагогической работы) по сравнению с учителями мужчинами чаще были у врача за последние шесть месяцев и что им более характерны разные психосоматические недомогания. О том, что женщины чаще мужчин претерпевают разные недомогания, связанные со здоровьем, указывают результаты исследований, проведенных в России (Назарова, 2014). По мнению других авторов (Erick & Smith, 2013), головная боль у женщин не зависит от стажа педагогической работы, поскольку в начале профессиональной карьеры учителя физической культуры берутся за многими обязанностями, из-за чего им часто не хватает сбалансированного режима труда и отдыха. Высказанное мнение подтверждено выводами исследования, проведенного в Китае, в котором указывается, что распространение болей плеча превалировало у учителей, у которых опыт педагогической работы был в пределах от одного до 15 лет по сравнению с теми, у которых опыт подобной работы был от 16 до 20 лет ($p < 0,001$).

В нашем исследовании, как и в других (Bartholomewa et al., 2014), выявлена взаимосвязь недомоганий со стажем педагогической работы учителя физической культуры, т.е. чем больше стаж, тем больше разнообразных недомоганий. Объясняется это переменами образа жизни, когда с возрастом меньше уделяется внимания на укрепление здоровья и развитие физических качеств. Исследования, проведенные в Эстонии, показали, что те учителя физической культуры, которые физическими упражнениями регулярно не занимались, были отнесены к группе испытывающих боли в поясничной области спины (Erick & Smith, 2013). Поэтому с уменьшением объема мышечной массы и ухудшением эластичности мышц одновременно слабеют и суставы. Иными словами, организм учителя физической культуры накапливает опыт как положительного, так и отрицательного влияния профессиональной и личной жизни. Есть основания полагать, что разные соматические и психосоматические недомогания негативно влияют на профессиональную деятельность учителя физической культуры, поскольку затрудняют

качественно подготовить учебную среду и контролировать педагогическую коммуникацию в различных нестандартных ситуациях физического воспитания школьников.

Выводы *Conclusions*

1. Специфичность профессиональной деятельности учителя физической культуры непосредственно связана с показателями его физического и психосоматического здоровья. К тому же, чем продолжительнее педагогическая деятельность, тем заметнее профессиональный отпечаток выражается разными недомоганиями.
2. По данным исследования, меньшая часть учителей физической культуры Литвы свое здоровье субъективно оценивает как хорошее и очень о ней заботится. Более положительно свое здоровье оценившие учителя реже жаловались на разные соматические и психосоматические недомогания.
3. Анализ переменных субъективного здоровья показал, что менее положительно оценили свое здоровье те учителя, у которых стаж работы в школе был более 20 лет. При этом они чаще испытывали разные недомогания. Женщины по сравнению с мужчинами более часто претерпевали разные недомогания, однако те из них, у которых стаж педагогической работы был более 20 лет, реже попадали в группу долговременных соматических и психосоматических недомоганий.

Summary

The aim of the research is to establish the self-evaluation of physical education teachers' health. 324 teachers from high schools in Lithuania filled-in a questionnaires consisting of self-evaluate health and various somatic and psychosomatic disorders. It was found that only 29,1 per cent of female and 18,3 per cent of male participants rated their health as good. Teachers who evaluated their health positively more seldom experienced various somatic and psychosomatic disorders. Teachers with more than 20 years of work experience rarely evaluated their health as good. In addition, they more frequently experienced various disorders. Women, when compared to men, are more prone to health disorders. Furthermore, women with more than 20 years of work experience more rarely fell into the group of long-term somatic and psychosomatic disorders.

Литература *References*

- Bartholomewa, K. J., Ntoumanis, N., Cuevas, R., & Lonsdale, C. (2014). Job pressure and ill-health in physical education teachers: The mediating role of psychological need thwarting. *Teaching and Teacher Education*, 37, 101-107.

Kardeliene & Razbadauskas, 2018. Самооценка своего здоровья учителя физической культуры как фактор, определяющий качество его профессиональной деятельности

- Burstrom, B., & Fredlund, P. (2001). Self rated health: Is it as good predictor of subsequent mortality among adults in lower as well as in higher social classes? *Journal of Epidemiology and Community Health*, 55, 836-840.
- Eric, P., & Smith, D. (2011). A systematic review of musculoskeletal disorders among school teachers. *BMC Musculoskeletal Disorders*, 12:260. Downloaded from <http://www.biomedcentral.com/1471-2474/12/260>
- Erick, P., & Smith, D. (2013). Musculoskeletal disorder risk factors in the teaching profession: a critical review. *OA Musculoskeletal Medicine*, 1 (3): 29. Retrieved from <http://www.oapublishinglondon.com/images/article/pdf/1399319378.pdf>
- Goossens, L., Vercruyssen, S., Cardon, G., Haerens, L., Witvrouw, E., & De Clercq, D. (2016). Musculoskeletal injuries in physical education versus non-physical education teachers: a prospective study. *Journal of Sports Sciences*, 34 (12), 1107-1115. doi:10.1080/02640414.2015.1091491.
- Kemper, H. C. G. (1992). Incidence, severity, aetiology and prevention of sports injuries. *Sports Medicine*, 14 (2), 82-99.
- Klumbienė, J. (2008). *Rizikos sirgti lėtinėmis neinfekcinėmis ligomis pokyčiai ir jų reikšmė sveikatos politikos vertinimui: Habilitacijos procedūrai teikiamų mokslo darbų apžvalga: biomedicinos mokslai, visuomenės sveikata (10 B)*. Kaunas: LSMU.
- Kovac, M., Leskosek, B., Hadzic, V., & Jurak, G. (2013). Injuries among Slovenian physical education teachers: A cross-sectional study. *International Journal of Occupational Safety and Ergonomics*, 19 (1), 87-95.
- Masiliauskas, D., & Kardelienė, L. (2012). Kūno kultūros mokytojo pedagoginio kryptingumo ir etinės kompetencijos sąsaja su mokinių dalykine pozicija pamokoje. *Mokytojų ugdymas*, 2012, 19 (2), 12-30. Downloaded from <http://etalpykla.lituanistikadb.lt/fedora/get/LT-LDB-0001:J.04~2012~1368097158963/DS.002.0.01.ARTIC>
- Moving into the future: National standards for physical education* (2004). National Association for Sports and Physical Education [NASPE]. 2nd ed. Boston, MA: McGraw Hill.
- Stock, C., & Kramer, A. (2000). Psychosoziale belastung und psychosomatische beschwerden vonstudierenden. In: U. Sontag, S. Graser, C. Stock, A. Kramer, (Hrsg). *Gesundheitsfördernde hochschulen: Konzepte, strategien und praxisbeispiele* (pp. 127-138). Weinheim: Juventa-Verl.
- Trinkūnienė, L., & Adžgauskas, D. (2015). Kūno kultūros dalyko situacija Alytaus miesto ir rajono bendrojo ugdymo mokyklose. *Sporto mokslas*, 3 (81), 11-16. doi:10.15823/sm.2015.13.
- Trinkūnienė, L. (2014). Kūno kultūros mokytojų dalykinės pozicijos ir savijautos sąsaja. Edukologijos daktaro disertacija. Kaunas: Lietuvos sporto universitetas.
- Van Mechelen, W., Hlobil, H., & Kemper, H. C. G. (1992). Incidence, severity, aetiology and prevention of sports injuries. *Sports Medicine*, 14 (2), 82-99.
- Назарова, И. Б. (2014). Здоровье и качество жизни жителей России. *Социологические исследования*, 9, 139-145.

FIZISKO AKTIVITĀTI IETEKMĒJOŠIE VIDES FAKTORI IZGLĪTĪBAS IESTĀDĒS

Factors Affecting Levels of Physical Activity in School Environment

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Abstract. *Person's attitude, belief and health behavioral patterns are directly and indirectly influenced by many social and physical factors. Scientific researches point out that The Social Ecological Model is a theory-based framework used both: in the development of behavioral programs and in the theoretical background of the research. There are four global factors that can characterize interactions between the individual and the environment: intrapersonal, interpersonal, environmental and political. Using the socially-ecological model, there can be observed the manifestations of physical activity at different levels that interact with each other. Making changes at one level influences other aspects. The goal of the article is to conduct a scientific literature review of the factors influencing physical activity in the school environment.*
Keywords: *children, physical activity, school environment, Social Ecological model, theoretical framework.*

Ievads

Introduction

Bērnu un jauniešu vecumā veidojas ikdienas ieradumi, kas var būtiski ietekmēt cilvēka veselības stāvokli turpmākajā dzīvē. Sabiedrībā tiek plaši popularizēti veselības ieguvumi, ko sniedz regulāras fiziskās aktivitātes, tomēr joprojām ir liels jauniešu skaits, kam ir mazkustīgs dzīvesveids. Latvijas skolēnu veselības paradumu pētījumā tika noskaidrots, ka pietiekama fiziskā aktivitāte (katru dienu vismaz 60 minūtes) ir tikai 22 % zēniem un 15.3 % meitenēm (Pudule et al., 2015). Salīdzinājumā ar 2005./2006. mācību gada pētījumu, tika konstatēta tendence, ka samazinās kopējā fiziskā aktivitāte. Kopš 2006. gada zēnu skaits, kam ir pietiekama fiziskā aktivitāte samazinājās par 5.6 %, savukārt meitenēm par 4.4 procentiem (Pudule et al., 2015). Latvijā iegūto datu atšķirība ar rādītājiem citās valstīs ir 5 %-8 % robežās, tomēr ir jānorāda, ka, piemēram, Somijā 11 gadu vecumā 47 % zēnu un 34 % meiteņu ir pietiekami fiziski aktīvi (World Health Organization, 2016).

Viens no skolas pedagoģiskajiem uzdevumiem ir pilnveidot zināšanas un izpratni par veselīgu dzīvesveidu, regulāru fizisko aktivitāšu nozīmi veselības saglabāšanā un nostiprināšanā. Tomēr, analizējot esošo situāciju, var secināt, ka esošais sporta stundu apjoms mācību procesā nenodrošina bērnu optimālo fizisko aktivitāti ikdienā.

Līdzīga situācija tiek konstatēta arī ārzemju pētījumos, kur tika noteikts, ka vidējas un augstas intensitātes fiziskās aktivitātes sporta stundās netiek veiktas pietiekamā apjomā (Kahan & McKenzie, 2017). Veiktajā zinātnisko rakstu metaanalīzē tika konstatēts, ka vidēji tikai 32.6 % bērnu sasniedz mērenas un augstas intensitātes slodzes sporta stundā. Izvērtējumā tika iekļauti pētījumi, kuros fiziskās aktivitātes noteica, izmantojot akselometrus, kas ir objektīvās izpētes metode. Savukārt, veicot subjektīvos novērojumus, šis skaitlis palielinās līdz 57.6 %, kas joprojām ir nepietiekams rekomendāciju sasniegšanai (Hollis et al., 2016).

Vides, sabiedrības normu, starppersonu un personības faktoru mijiedarbība tiek plaši pētīta saistībā ar fizisko aktivitāšu veicināšanu. Šajos pētījumos skolas vide tiek analizēta ļoti plašā kontekstā (Lewallen et al., 2015). Balstoties uz visaptverošas skolas vides (*whole school approach*) pieeju fiziskās aktivitātes veicināšanai un, ņemot vērā, ka sporta stunda ir tikai viens no komponentiem, ārpusstundu nodarbības un atbalstošā vide tiek uzskatīta, kā būtiskākais faktors vēlamu izmaiņu nodrošināšanai (De Meester et al., 2017; Thornton et al., 2017).

Raksta mērķis ir veikt zinātniskās literatūras analīzi par fizisko aktivitāti ietekmējošiem faktoriem skolas vidē.

Skolas vides ietekme uz bērnu fizisko aktivitāti *Impact of school environment on physical activity of children*

Ārzemju literatūrā, kas pēta skolas vides potenciālo ietekmi uz bērnu kopējo fizisko aktivitāti, visbiežāk tiek izmantots Sociāli ekoloģiskās teorijas modelis (Langille & Rodgers, 2010).

Teorijā ir apvienoti personības un apkārtējās vides faktori, kas ietekmē veselību. Pētījumu gaitā ir noteikts, ka starp personības uzvedību un apkārtējo vidi pastāv dubultā saite: no vienas puses, vide nosaka cilvēka uzvedību, no otras puses – cilvēka uzvedība un rīcība maina apkārtējo vidi. Vēlamo uzvedību var ietekmēt daudz sociālu apakšsistēmu: ģimene, kopiena, darbavieta, pārliecība un tradīcijas, ekonomika, fiziskā vide un sociālo attiecību tīkli. Tāpēc centieni popularizēt veselību veicinošus paradumus būtu jāvērs to sociālo apakšsistēmu virzienā, kuru ietekmē indivīds pats izvēlēsies vēlamu uzvedības modeli. Tiek pieņemts, ka izmaiņas vienā apakšsistēmā rada izmaiņas citās. Līdz ar to ir nepieciešama kompleksa pieeja sabiedrības veselību ietekmējošās uzvedības korekcijai, ņemot vērā sociālo grupu īpatnības (Stokols, 1992).

Personas uzvedības ieradumi ir grūti modificējami psiholoģiskie modeļi, tādēļ fiziskās aktivitātes veicināšanai liela nozīme ir apkārtējās vides nodrošināšanai, kas atbalsta vēlamās darbības izvēli. Vēlamā uzvedības modeļa veidošanās ir atkarīga no iespējas modificēt vairākas sociālās apakšsistēmas vienlaicīgi.

Sociāli ekoloģiskās pieejas modelis balstās uz bioloģisko zinātņu atziņām par organismu mijiedarbību ar apkārtējo vidi. Veiktie pētījumi socioloģijā, psiholoģijā, pedagoģijā un veselības veicināšanas jomās, norāda uz ciešo vides un cilvēka uzvedības savstarpējo ietekmi.

Nozīmīgākos pētījumus šīs teorijas attīstībā ir veikuši:

- Bronfenbrenners 1979. gadā definēja Ekoloģisko Sistēmu teoriju, kas atklāj mijiedarbību starp personu un apkārtējo vidi (Bronfenbrenner, 1979);
- MakLerojs 1988. gadā izstrādāja Veselību ietekmējošās uzvedības ekoloģisko modeli (McLeroy et al., 1988);
- Stokols 1992. gadā ievieša Sociāli ekoloģisko modeli veselības veicināšanā.

Lai gan starp šīs teorijas dažādām izpausmēm pastāv kategoriju definējumu atšķirības, tomēr var izšķirt galvenos četrus līmeņus, kas ir savstarpēji ietekmējami un pārklājas viens ar otru (Stokols, 1992).

1. Individuālās izpausmes līmenis

Personības individuālie faktori ir Sociāli ekoloģiskā modeļa centrs. Šajā līmenī tiek iekļauti kritēriji, kas var veicināt vai kavēt cilvēka iesaistīšanos aktivitātēs. Individuālo līmeni raksturo:

- sociāldemogrāfiskie parametri;
- zināšanas, attieksme, pārliecība, motīvi, nedrošība, bailes;
- iemaņas un prasmes,
- veselības stāvoklis.

Fiziskās aktivitātes veicināšanas procesā uzmanība tiek pievērsta personas zināšanu papildināšanai, kustību iemaņu un prasmju pilnveidošanai. Galvenokārt tās ir izglītojošās programmas, kuru mērķis ir palielināt cilvēka pārliecību par savām spējām.

2. Sociālās vides līmenis

Katrs cilvēks atrodas noteiktas sociālās vides ietekmē. Sociālo vidi raksturo kultūras un sabiedrības procesu izpausmes formas. Sociālās vides līmenī apkārtējie cilvēki var sniegt gan rīcības atbalstošu, gan noraidošu vērtējumu.

To galvenokārt raksturo:

- attiecības starp ģimenes locekļiem;
- vienaudžu attieksme;
- personas socializēšanās iespējas;
- kultūrvides līmenis;

- sabiedrības normas;
- institucionālās formas (skolas tradīcijas, atrašanās vieta);
- sociālekonomiskais sabiedrības līmenis.

Organizējot aktivitātes, šī līmeņa faktoru ietekmēšanai, tiek izmantots atbalsta grupu darbs, līdzdalība sociālajos projektos, sporta pasākumu organizēšana, brīvprātīgais darbs, kā arī citas aktivitātes, kas vērstas pozitīvas pārlicības veidošanai par fizisko aktivitāšu nozīmīgumu.

3. Fiziskās vides līmenis

Ņemot vērā, ka jebkura fiziskā aktivitāte tiek veikta noteiktā ārējā vidē, tās parametri ietekmē cilvēku rīcības izvēli. Fiziskā vide tiek iedalīta: cilvēku veidotā un dabīgā. Atrodies fiziskām aktivitātēm labvēlīgā vidē (pieejami sporta laukumi, aprīkotas pastaigu un velobraucieni vietas, patīkami dabas apstākļi), ir lielāka iespēja, ka skolēns izvēlēsies aktīvu brīvā laika pavadīšanas veidu. Savukārt urbanizēta vai nedroša vide mazina fizisko aktivitāšu iespējamību.

Fiziskās vides faktori, kas var ietekmēt aktivitāti:

- fiziskām aktivitātēm piemēroto vietu pieejamība;
- sabiedriskais transports un satiksmes intensitāte;
- kriminogēnā situācija;
- dabas apstākļi;
- dzīvojamās vides apbūves intensitāte.

Fizisko aktivitāti veicinošām programmām būs jūtama ietekme tikai tajā gadījumā, ja arī reālā ārējās vides situācija būs tam labvēlīga.

4. Politiskās vides līmenis

Lai spētu realizēt plašas ietekmes pasākumus fiziskās aktivitātes veicināšanai, ir nepieciešama sakārtota politiskā vide. Tas attiecas gan uz normatīvajiem dokumentiem, kas regulē sportiskās un fiziskās aktivitātes valsts un pašvaldību līmenī, gan iekšējās kārtības noteikumi un tradīcijas, kas veicina vai kavē cilvēku iesaistīšanos aktivitātēs.

Politisko vidi veido:

- pilsētvides plānošanas politika;
- veselības nodrošināšanas politika;
- sabiedrisko aktivitāšu atbalsta politika;
- izglītības politika;
- dabas un darba aizsardzības politika.

Izmantojot Sociāli ekoloģisko modeli, ir iespējams skatīt fiziskās aktivitātes izpausmes dažādos līmeņos, kas savstarpēji mijiedarbojas. Veicot izmaiņas vienā no līmeņiem, ir paredzama atgriezeniska saite citos aspektos. Pēc pētījumiem, kas veikti izmantojot Sociāli ekoloģisko modeli, fiziskās aktivitātes veicināšanai lielāks efekts ir tad, ja tiek veiktas ietekmes vairākos līmeņos vienlaicīgi (Langille & Rodgers, 2010; Nelson et al., 2010).

Individuālās izpausmes līmenis *Individual level*

Vēlamās uzvedības motivācijas modeļu veidošanās procesi ir plaši pētīta psiholoģijas joma. Ir izveidotas dažādas teorijas, kas apraksta un pamato personības darbības cēloņus un motīvus.

Iekšējās motivācijas trūkums, tiek minēts kā visbiežākais iemesls nepiedalīšanās fiziskajās aktivitātēs (Slater & Tiggemann, 2010). Palielinoties vecumam, samazinās fiziskā aktivitāte un mainās kontroles lokuss no patiesi iekšējās uz ārējo (Knowles et al., 2011).

Vienā no pētījumiem, pielietojot daļēji strukturētās intervijas metodi, tika noteikti šķēršļi, kas traucē pusaudžiem būt pietiekami fiziski aktīviem. Būtiskākie šķēršļi tika sagrupēti četru faktoru grupās: „laika trūkums”, „nepiemēroti laika apstākļi”, „skola un mājasdarbi”, „intereses trūkums un nevēlēšanās”. Ir jāatzīmē, ka šajā pētījumā „laika trūkuma faktors” bija būtiski nozīmīgāks meitenēm (Tappe et al., 1989).

Pētījumos ir noteikts, ka fiziskās aktivitātes samazināšanās ir cieši saistīta ar pubertātes iestāšanos. Meitenes, kas nobriest ātrāk par savām vienaudzēm ir arī mazāk aktīvas (Dobbins et al., 2013). Somijā veiktajā pētījumā tika noskaidrots, ka visstraujāk fiziskās aktivitātes samazinās zēniem vecuma posmā no 12 līdz 18 gadiem (5.1 % gadā), bet meitenēm tas ir no 12 līdz 15 gadiem (4.1 % gadā) (Telama & Yang, 2000).

Tomēr bioloģiskie faktori nav noteicošie, kas ietekmē aktivitātes samazināšanos. Sociālie un personību veidojošie faktori ir būtiskāki, kas ietekmē vēlamu uzvedību. Bērniem attīstoties, intereses mainās, jo ir vēlēšanās izmēģināt savas spējas arī citās aktivitātēs. Līdz ar to, tas ir meklējumu un izmēģinājumu ceļš, lai atrastu sevis izpausmes veidu, kas sniedz lielāko gandarījumu. Līdz ar skolas vecuma palielināšanos, palielinās arī mācību slodze, kas ietekmē brīvā laika pavadīšanas iespējas. Palielinoties pusaudžu autonomijai no saviem vecākiem, viņiem rodas iespējas vairāk laika pavadīt ar vienaudžiem sev vēlamajā vidē, līdz ar to samazinās laiks fiziskajām aktivitātēm (Craike et al., 2009).

Vienaudžu ietekmei ir ļoti liela nozīme šajā vecumposmā. Tā var būt gan pozitīva, gan negatīva. Kā fizisko aktivitāti kavējošus faktorus pusaudži min: negatīva pieredze esot kopā, nesportiski draugi, pārlietu liels spiediens būt aktīvam no apkārtējiem. Savukārt aktīvie pusaudži kā veicinošos faktorus min: iespēja darboties kopā, droša un draudzīga vide, pozitīvs draugu novērtējums (Ries et al., 2008; Humbert et al., 2008; Whitehead & Biddle, 2008).

Sociālās vides līmenis *Social level*

Zinātniskajā literatūrā draugu, vienaudžu, pedagogu, ģimenes locekļu un citu nozīmīgu cilvēku ietekme uz vēlamo veselību ietekmējošo rīcību tiek analizēta sociālā atbalsta kontekstā. Bieži vien sociālais atbalsts tiek vērtēts trijos aspektos: 1) rīcības nodrošināšana (transportēšana, finansēšana u.c.), 2) motivējošais atbalsts (iedrošināšana, pozitīvais novērtējums utt.), 3) vēlamās rīcības paraugs (uzvedības modelēšana) (Prochaska et al., 2002).

Ņemot vērā pusaudžu socializēšanās dominanti šajā vecuma posmā, fiziskās aktivitātes un sports ir tieši saistīts ar tuvāko draugu loka attieksmi. Tomēr pusaudži, kas ir pietiekami fiziski aktīvi, laika trūkumu neuztver kā ierobežojumu. Laika plānošanas prasmes un augsts fizisko aktivitāšu ieguvumu novērtējums ļauj viņiem apvienot vairākas aktivitātes ikdienā (Whitehead & Biddle, 2008).

Zinātniskajos pētījumos ir minēts, ka sacensību elements ir viens no ierobežojošiem faktoriem sporta aktivitāšu pārtraukšanai, īpaši tas ir izteikti pusaudzēm (Knowles et al., 2011). Līdz ar to arī psiho emocionālajam faktoram ir būtiska loma fizisko aktivitāšu saglabāšanā. Veidojoties apziņai par savām spējām salīdzinājumā ar citiem, attīstās personības pašnovērtējums un motivācija turpmākai darbībai (Robert, 1992).

Sacensšanās un sasniegumu novērtēšanas vidi pusaudži visbiežāk norāda kā ierobežojošo faktoru (Yungblut et al., 2012; Craike et al., 2009). Negatīvā pieredze sporta stundās veidojas, izjūtot spiedienu uzvarēt un saņemot nepatīkamas reakcijas no vienaudžiem. Nevēlēšanās zaudēt un iespējamā izstumšana no kolektīva mazina prieka sajūtas, piedaloties sporta aktivitātēs (Whitehead & Biddle, 2008).

Savukārt pusaudži, kas uzrādīja pietiekamu fizisko aktivitāti, kā motivējošos faktorus minēja: veselības ieguvumus, ārējais izskats, socializēšanās iespējas, pozitīva pieredze un jautrība. Pusaudži augstu novērtēja aktivitāšu dažādību, kas nav saistītas ar sacensanos, bet ar jauniem izaicinājumiem (Humbert et al., 2008).

Ārējais izskats ir ļoti nozīmīgs psiho emocionāls faktors pusaudžu un jauniešu vecumā. Īpaši tas ir raksturīgs meiteņu vidū. Daudzos ārzemju pētījumos, pielietojot interviju metodes, ir noskaidrots, ka meitenes jūtas neērti savu vienaudžu vidū (īpaši, ja tie ir zēni), veicot sportiskās aktivitātes. Vecāko klašu jaunietes un meitenes ar vājāku fizisko sagatavotību jūt diskomfortu sportiskajās aktivitātēs, jo ir ar lieko svaru, ir neierasts apģērbs, jūtas nosvīdušas (Knowles et al., 2011). Savukārt pusaudži, kas ir pietiekami fiziski aktīvi un ar sportisku ārējo izskatu, diskomfortu sporta aktivitātēs nejūt.

Prieka sajūtas faktors kļūst maznozīmīgs, kad fiziskās aktivitātes tiek pielietotas kā līdzeklis svara samazināšanai. Tomēr, kā noteikts pētījumos, tieši prieka izjūtas ir visbiežāk minētais faktors vēlamās rīcības ilgtermiņa

saglabāšanai. Hendersons ar līdzautoriem savā publikācijā norādīja, ka mūsdienu sabiedrībā, kas ir uz rezultātu un sasniegumu orientēta, prieka izjūtas nav pietiekami pētītas un novērtētas (Henderson et al., 1999). Mainot paradigmu no „fiziskās aktivitātes – līdzeklis mērķu (veselība, izskats, sporta rezultāts) sasniegšanai” uz „fiziskās aktivitātes – prieka gūšanai”, ir iespējams paaugstināt motivāciju līdzdalībai (Foster et al., 2007).

Pedagoga loma fiziskās aktivitātes veicināšanā ir viens no būtiskākajiem faktoriem skolas vidē. Ir veikti daudzi pētījumi, kas analizē pedagogu kā uzvedības parauga piemēru. Sporta skolotāja iesaistīšanās aktivitātēs, pozitīvais atbalsts, citu iedrošināšana, radošā darbība ir noteicošie faktori bērnu pozitīvās attieksmes veidošanai (Morton et al., 2010).

Pedagoģiskā darbība ir cieši saistīta ar sporta stundas atmosfēras uztveri bērnu vidū. Dažos pētījumos skolēni norādīja, ka uzslava tika nopelnīta tikai pārspējot citus, kas neveicināja pozitīvās attieksmes veidošanos, jo lielākā daļa no uzmanības tika veltīta skolēniem ar vislabākām prasmēm (Ntoumanis et al., 2004). Taču dažos pētījumos ir minēts, ka skolēni (pārsvārā zēni) konkurenci uztver kā pozitīvu motivācijas faktoru sportošanai. Kaut gan meitenes arī pieminēja pozitīvas iezīmes konkurencei, tomēr viņas norādīja negatīvos aspektus: pazūd aktivitātes jautrība, it īpaši, ja zēni pārāk iekļaujas konkurences atmosfērā. Skolēni vēlētos, lai skolotāji palīdzētu viņiem justies vairāk iesaistītiem un dotu vairāk izvēles iespēju. Viens no pētījumiem piemin, ka meitenes atteicās piedalīties sporta stundās, kad skolēni tika dalīti pēc dzimuma, un izvēlētas aktivitātes bija vairāk piemērotas zēniem (Azzarito et al., 2006).

Sociālie faktori, kas var ietekmēt pusaudžu darbību, tiek skatīti gan tuvākās saskarsmes līmenī (vienaudzī, vecāki), gan plašākā aspektā, t.i., kādas ir sociālās normas un stereotipi. Pētījumos ir noteikts, ka ģimenes locekļiem, it īpaši vecākiem, ir būtiska loma vēlamo veselības paradumu veidošanā, lai gan atsevišķi zinātnieki norāda, ka iedarbības mehānismi joprojām nav pietiekami izpētīti (Prochaska et al., 2002). Vecāku atbalsts vai arī noraidošā attieksme ir viens no sociālā aspekta būtiskākajiem faktoriem, jo kā norādīts pētījumos tam ir pat lielāka ietekme uz pusaudža rīcību nekā vecāku uzvedības modelēšanai. Kā viens no svarīgākajiem atbalsta mehānismiem ir fizisko aktivitāšu pieejamības nodrošināšana, t.i., transportēšana, finansēšana, izvēles atbalsts.

Pētījumos ir noteikts, ka šajā vecuma posmā izveidojušies rīcības modeļi saglabājas ilgstošu laika posmu. Longitudiālajā pētījumā tika atklāts, ka veselību ietekmējošie paradumi, kas tika konstatēti 6. klasē saglabājās nemainīgi arī vidusskolā (Kelder et al., 1994). Šie fakti norāda uz nepieciešamību akcentēt veselību veicinošo programmu un politikas ieviešanu pamatskolas sākuma posmā. Skolas vidē pusaudži pavada lielāko dienas daļu, kas sniedz iespēju pozitīvi ietekmēt viņu rīcības izvēli.

Fiziskās vides līmenis *Physical environment level*

Atbilstoši Sociāli ekoloģiskās teorijas konceptam, apkārtējā fiziskā vide var būtiski ietekmēt cilvēku fizisko aktivitāti. Zinātniskajos rakstos fiziskā vide galvenokārt tiek pētīta trijos komponentos: būves un telpas (pieejamība, arhitektoniskais risinājums, atbilstība prasībām), laukumi un pilsētvide (estētiskais noformējums, funkcionalitāte), pārvietošanās iespējas (gājēju celiņi, veloceļi, sabiedriskais transports).

Vides ietekmi uz cilvēku fizisko aktivitāti zinātnieki aktualizēja jau kopš pagājušā gadsimta beigām. Sākotnējie pētījumi tika akcentēti uz fizisko aktivitāti veicinošo programmu efektivitāti un pieejamību tuvākajā apkārtnē (Dishman, 1982). Vēlākajos pētījumos galvenā uzmanība tika pievērsta vides un infrastruktūras ietekmei uz fizisko aktivitāti dažādās populācijas grupās (Sallis et al., 1992; Sallis et al., 1990).

Analizējot literatūru, var izdalīt trīs galvenās pētījumu instrumentu kategorijas. Viena no visplašāk pielietotajām ir intervēšanas vai anketēšanas metodes, kuru galvenais uzdevums ir noteikt fizisko aktivitāti veicinošos un kavējošos faktorus, ko ietekmē fiziskā vide. Otrajā kategorijā tiek pielietotas novērošanas metodes, kas fiksē objektīvos rādītājus reālajā vidē (telpu, vides noslogojuma intensitāte, pārvietošanās ātrums, aktivitāšu veids). Trešajā kategorijā var iedalīt pētījumus, kur tiek izmantoti dati, kas iegūti no digitālajām kartēm. Šajos pētījumos galvenokārt tiek analizēta pilsētvides ietekme uz kopējo fizisko aktivitāti noteiktā pilsētas rajonā vai plašākā mērogā.

Amerikas Savienotajās Valstīs (ASV) liela uzmanība tiek veltīta liekā svara problēmu risināšanai. Ir veikti daudzi pētījumi par to, kā tiek izmantoti spēļu laukumi pārtraukumos starp mācībām. Vienā no pētījumiem tika noskaidrots, ka puse no skolniekiem galvenokārt ir pasīvi. Skolēni, kas piedalījās kādā no aktivitātēm galvenokārt izmantoja āra treniņus vai aktivitāšu laukumus, t.i. 25 % gadījumos un 17 % bērnu spēlējās iezīmētajos laukumos. Lai gan ASV basketbols ir ļoti populārs sporta veids, šajā pētījumā noskaidrots, ka basketbola laukumu izmantoja tikai 10 % zēnu. Tomēr raksta autori atklāja, ka skolā kur notika plānotās fiziskās aktivitātes (pastaigu un sveicināšanas programma „Jog and Walk Stars”) 72 % bērnu piedalījās nodarbībā, kas ļāva sasniegt nepieciešamo minimālo aktivitāšu apjomu (Black et al., 2015).

2014. gadā publicētajā pētījumu apkopojumā (Escalante et al., 2014), izvērtējot astoņas zinātniskās publikācijas, tika konstatēts, ka spēļu laukumi ar zīmējumiem un papildus aprīkojumu veicina bērnu fizisko aktivitāti mācību pārtraukumos. Tomēr ir jāņem vērā, ka pētījumos galvenokārt tika iekļauti sākumskolas posma mērķa grupa.

Mortons ar līdzautoriem publicēja zinātnisko rakstu pārskatu, kur tika analizēta skolas vide atbilstoši sociāli ekoloģiskās teorijas modelim. Izanalizējot 16 kvalitatīva pētījuma metodoloģijai atbilstošus rakstus, tika secināts, ka skolu telpa, aprīkojums un inventārs potenciāli var ietekmēt skolnieku fizisko aktivitāti (Morton et al., 2016).

Sliktas ģērbtuves, velosipēdu novietošanas vietu trūkums arī tika pieminēts kā negatīvs faktors fizisko aktivitāšu veicināšanā. Līdzīgi arī ar spēļu lakumu trūkumu, taču dažos pētījumos skolēni norādīja, ka ir pārāk veci šādiem laukumiem un arī “droši” laukumi tiek uzskatīti par garlaicīgiem pusaudžu vecumā. Atsevišķos pētījumos tika norādīts, ka telpa ir svarīgs faktors. Plašas telpas tiek uzskatītas par aktivitāšu veicinošām un to trūkums izraisa tieši pretēju iedarbību. Daudzos pētījumos inventāra trūkums vai tā nolietojums tiek pieminēts kā fizisko aktivitāti negatīvi ietekmējošs faktors (Hobin et al., 2012).

Politiskās vides līmenis

Policy level

Bērni un pusaudži lielāko savas dienas daļu pavada skolas vidē. Ārpusstundu aktivitātes ir viena no iespējām iesaistīt bērnus fiziskajās aktivitātēs. Ārzemju zinātniskajā literatūrā liela uzmanība tiek veltīta skolas starpbrīžu satura izpētei. Ir konstatēts, ka, pilnvērtīgi izmantojot laiku skolas vidē, kas ir ārpus mācībām, ir iespējams iegūt līdz pat 40 % no nepieciešamās minimālās fiziskās aktivitātes (Ridgers et al., 2012).

Pariš ar līdzautoriem veiktajā pētījumā, tika noskaidrots, ka, ieviešot kustību rotaļas un dodot iespēju bērniem sākumskolas posmā izmantot sporta inventāru starpbrīžos, mērenas un augstas intensitātes fiziskās aktivitātēs patērētais laiks palielinājās par 13 % (Parrish et al., 2016). Tomēr pētnieki atzina, ka fiziskajās aktivitātēs vairāk iesaistījās zēni, kas apstiprina arī citu pētījumu datus, ka meitenes ir mazāk aktīvas (Ridgers et al., 2012).

Arī Japānā veiktajā pētījumā tika apstiprināta pozitīva ietekme fizisko aktivitāšu veicināšanā, nodrošinot iespēju brīvi izmantot sporta inventāru starpbrīžos (Ishii et al., 2014). Kā arī pētnieki norādīja uz nepieciešamību veidot fizisko aktivitāšu veicināšanas programmas atbilstoši dzimumam, jo zēni sportošanas iespējas izmanto aktīvāk.

Pārvietojoties uz un no skolas, bērni var iegūt 25-40 % no minimāli nepieciešamās fizisko aktivitāšu dienas normas (van Sluijs et al., 2009). Pētījumos ir noteikts, ka kopējā fiziskā aktivitāte uzsākot mācības pamatskolas un vidusskolas posmos samazinās, salīdzinājumā ar sākumskolu, tomēr ir vērojama tendence palielināties fiziskai aktivitātei pārvietojoties (De Meester et al., 2014). Jaunieši biežāk izvēlas pārvietoties uz skolu un citām aktivitātēm patstāvīgi.

Piecu komponentu ietvara programmu savā darbā piedāvā Van Acker un līdzautori (Van Acker et al., 2011). Galvenie fizisko aktivitāti veicinošie komponenti ir: 1) sports un fiziskās aktivitātes pusdienu pārtraukumā, 2) sportam pielāgotie rotaļu laukumi, 3) aktīvā pārvietošanās uz un no skolas, 4) veselības izglītība un skolas politika, 5) sporta nodarbības un fiziskās aktivitātes pēc mācībām.

Secinājumi *Conclusions*

Personas individuālie raksturojumi (attieksme, pārlicība, zināšanas, prasmes) ir Sociāli ekoloģiskās teorijas pamatā. Vēlamās rīcības barjeras vai motivējošie faktori ir cieši saistīti ar šiem raksturojumiem.

Ģimenei ir visbūtiskākā loma veselību ietekmējošo paradumu veidošanās bērībā, tomēr līdz ar pusaudžu gadiem sociālās un skolas vides ietekme palielinās. Pusaudžu vecumā skolnieki tiecas iegūt aizvien lielāku neatkarību un autonomiju. Līdz ar vecāku kontroles samazināšanos pusaudžu uzvedības modeļus aizvien vairāk ietekmē vienaudžu attieksme, normas un rīcība.

Kustību rotaļas un spēles ir viens no visdabiskākajiem fizisko aktivitāšu veidiem bērnu vecumā. Skolas fiziskā vide un inventāra pieejamība var būtiski ietekmēt bērnu vēlēšanos būt fiziski aktīviem ārpus mācību laika. Arī aktīvās pārvietošanās izvēle var būt atkarīga no iespējām droši nokļūt uz skolu ar velosipēdu vai kājām. Pētījumos tiek atzīts, ka intervences programmas, kas orientētas uz vides faktoru izmaiņām var būt efektīvākas par tām, kas ir vērstas uz indivīda faktoru iedarbību.

Sociālās normas un regulējumi sniedz konceptuālu ietvaru jautājumam par fizisko aktivitāti sabiedrības skatījumā. Ārņemju avotos fiziskās aktivitātes veicināšanas politiskais konteksts tiek skatīts ne tikai valsts, reģiona vai pašvaldības, bet arī skolas līmenī. Daudzās valstīs skolām ir plašas iespējas patstāvīgi izvēlēties resursu izmantošanas un mācību procesa organizēšanas pielāgošanu savām vajadzībām. Tas sniedz iespēju administratīvi veidot un vadīt fizisko aktivitāti veicinošu politiku izglītības iestādē. Skolas politika tiek apzināta gan kā iekšējās kārtības noteikumi, gan personāla darbība, gan resursu izmantošana.

Sociāli ekoloģiskās pieejas modelis fiziskās aktivitātes izpētei skolas vidē ir zinātniski pamatots daudzos pētījumos, kas sniedz teorētisko bāzi turpmāko empīrisko pētījumu veikšanai Latvijas izglītības iestādēs.

Summary

Promoting and improving the health of school children and adolescents is one of the health care priorities that can be implemented in the school environment. The interaction of

physical environment, social norms, interpersonal and personality factors is extensively studied in connection with the promotion of physical activity.

Individual characteristics of a person (attitude, confidence, knowledge, skills) make the basis of socio-ecological theory. The desired factors of behavioral barriers or motivating are closely related to these characteristics.

A family plays the most important role in the development of habits affecting health in childhood, however, the impact of social and school environment increases at a teenage. In adolescence, students tend to gain more independence and autonomy. As the parental control decreases, adolescents' behavior is increasingly influenced by peer attitudes, norms and actions.

Movement games is the most natural kind of physical activity in early childhood. Physical environment of the school and the availability of equipment can have a significant effect on the child's desire to be physically active outside school. The choice of active travel can depend on the ability to safely get to school by bicycle or on foot. The scientific research declares that intervention programs that focus on changes in environmental factors may be more effective than those that are focused on the effects of individual factors.

Social norms and regulations provide a conceptual framework of the issue of physical activity in society. In the foreign sources, the political context of promoting physical activity is examined not only at the national, regional or local level, but also at school level. In many countries, schools have a wide range of options to independently choose the use of resources and the organization of learning process according to their own needs. It provides an opportunity for administrators to formulate and manage a policy that encourages physical activity in an educational institution. School policies are identified as internal regulations, staffing and the use of resources.

The socio-ecological approach to researching physical activity in a school environment is scientifically based upon many studies which provide the theoretical background for further empirical research in educational institutions in Latvia.

Literatūra References

- Azzarito, L., Solmon, M. A., & Harrison, Jr. L. (2006). "... If I Had a Choice, I Would..." A Feminist Poststructuralist Perspective on Girls in Physical Education. *Research quarterly for exercise and sport*, 77 (2), 222-239.
- Black, I. E., Menzel, N. N., & Bungum, T. J. (2015). The relationship among playground areas and physical activity levels in children. *Journal of Pediatric Health Care*, 29 (2), 156-168.
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press. 330 p.
- Craike, M. J., Symons, C., & Zimmermann, J. A. M. (2009). Why do young women drop out of sport and physical activity? A social ecological approach. *Annals of leisure research*, 12 (2), 148-172.
- De Meester, F., Van Dyck, D., De Bourdeaudhuij, I., Deforche, B., & Cardon, G. (2014). Changes in physical activity during the transition from primary to secondary school in Belgian children: what is the role of the school environment?. *BMC public health*, 14 (1), 261.
- Dishman, R. K. (1982). Compliance/adherence in health-related exercise. *Health psychology*, 1 (3), 237.

- Dobbins, M., Husson, H., DeCorby, K., & LaRocca, R. L. (2013). School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Cochrane Database Syst Rev*, 2 (2).
- Escalante, Y., García-Hermoso, A., Backx, K., & Saavedra, J. M. (2014). Playground designs to increase physical activity levels during school recess a systematic review. *Health Education & Behavior*, 41 (2), 138-144.
- Foster, C., Cowburn, G., Allender, S., & Pearce-Smith, N. (2007). *Physical Activity and Children. The Views of Children on Barriers and Facilitators to Participation in Physical Activity: A Review of Qualitative Studies*. London: National Institute for Health and Clinical Excellence. Public Health Collaborating Centre.
- Henderson, K., Glancy, M., & Little, S. (1999). Putting the fun into physical activity. *The Journal of Physical Education, Recreation and Dance*, 70 (8), 43–48.
- Hobin, E. P., Leatherdale, S. T., Manske, S., Dubin, J. A., Elliott, S., & Veugelers, P. (2012). A multilevel examination of gender differences in the association between features of the school environment and physical activity among a sample of grades 9 to 12 students in Ontario, Canada. *BMC Public Health*, 12 (1), 74.
- Hollis, J. L., Williams, A. J., Sutherland, R., Campbell, E., Nathan, N., Wolfenden, L., ... & Wiggers, J. (2016). A systematic review and meta-analysis of moderate-to-vigorous physical activity levels in elementary school physical education lessons. *Preventive medicine*, 86, 34-54.
- Humbert, M. L., Chad, K. E., Bruner, M. W., Spink, K. S., Muhajarine, N., Anderson, K. D., ... & Gryba, C. R. (2008). Using a naturalistic ecological approach to examine the factors influencing youth physical activity across grades 7 to 12. *Health Education & Behavior*, 35 (2), 158-173.
- Ishii, K., Shibata, A., Sato, M., & Oka, K. (2014). Recess physical activity and perceived school environment among elementary school children. *International journal of environmental research and public health*, 11 (7), 7195-7206.
- Kahan, D., & McKenzie, T. L. (2017). Energy expenditure estimates during school physical education: Potential vs. reality?. *Preventive Medicine*, 95, 82-88.
- Kelder, S. H., Perry, C. L., Klepp, K. I., & Lytle, L. L. (1994). Longitudinal tracking of adolescent smoking, physical activity, and food choice behaviors. *American journal of public health*, 84 (7), 1121-1126.
- Knowles, A. M., Niven, A., & Fawkner, S. (2011). A qualitative examination of factors related to the decrease in physical activity behavior in adolescent girls during the transition from primary to secondary school. *Journal of physical activity and health*, 8 (8), 1084-1091.
- Langille, J. L. D., & Rodgers, W. M. (2010). Exploring the influence of a social ecological model on school-based physical activity. *Health education & behavior*, 37 (6), 879-894.
- Lewallen, T. C., Hunt, H., Potts-Datema, W., Zaza, S., & Giles, W. (2015). The Whole School, Whole Community, Whole Child model: a new approach for improving educational attainment and healthy development for students. *The Journal Of School Health*, 85 (11), 729-739
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education & Behavior*, 15 (4), 351-377.
- Morton, K. L., Atkin, A. J., Corder, K., Suhrcke, M., & Sluijs, E. M. F. (2016). The school environment and adolescent physical activity and sedentary behaviour: a mixed-studies systematic review. *Obesity reviews*, 17 (2), 142-158.

- Morton, K. L., Keith, S. E., & Beauchamp, M. R. (2010). Transformational teaching and physical activity: A new paradigm for adolescent health promotion? *Journal of Health Psychology, 15* (2), 248-257.
- Nelson, A., Abbott, R., & Macdonald, D. (2010). Indigenous Australians and physical activity: using a social–ecological model to review the literature. *Health education research, 25* (3), 498-509.
- Ntoumanis, N., Pensgaard, A. M., Martin, C., & Pipe, K. (2004). An idiographic analysis of amotivation in compulsory school physical education. *Journal of Sport and Exercise Psychology, 26* (2), 197-214.
- Parrish, A. M., Okely, A. D., Batterham, M., Cliff, D., & Magee, C. (2016). PACE: A group randomised controlled trial to increase children's break-time playground physical activity. *Journal of Science and Medicine in Sport, 19* (5), 413-418.
- Prochaska, J. J., Rodgers, M. W., & Sallis, J. F. (2002). Association of parent and peer support with adolescent physical activity. *Research Quarterly for Exercise and Sport, 73*, 206-210
- Pudule, I., Velika, B., Grīnberga, D., Gobiņa, I., & Villeruša, A. (2015). *Latvijas skolēnu veselības paradumu pētījums. 2013./2014. mācību gada aptaujas.*
- Ridgers, N. D., Salmon, J., Parrish, A. M., Stanley, R. M., & Okely, A. D. (2012). Physical activity during school recess: a systematic review. *American journal of preventive medicine, 43* (3), 320-328.
- Ries, A. V., Gittelsohn, J., Voorhees, C. C., Roche, K. M., Clifton, K. J., & Astone, N. M. (2008). The environment and urban adolescents' use of recreational facilities for physical activity: a qualitative study. *American Journal of Health Promotion, 23* (1), 43-50.
- Robert, G. C. (1992). *Motivation in sport and exercise: Constraints and conceptual convergence. Motivation in Sport and Exercise.* Champaign, IL. Human Kinetics, 18, 264-80.
- Sallis, J. F., Hovell, M. F., Hofstetter, C. R., Elder, J. P., Hackley, M., Caspersen, C. J., & Powell, K. E. (1990). Distance between homes and exercise facilities related to frequency of exercise among San Diego residents. *Public health reports, 105* (2), 179.
- Slater, A., & Tiggemann, M. (2010). “Uncool to do sport”: A focus group study of adolescent girls’ reasons for withdrawing from physical activity. *Psychology of sport and exercise, 11* (6), 619-626.
- Stokols, D. (1992). Establishing and maintaining healthy environments: Toward a social ecology of health promotion. *American Psychologist, 47* (1), 6.
- Tappe, M. K., Duda, J. L., & Ehrnwald, P. M. (1989). Perceived barriers to exercise among adolescents. *The Journal Of School Health, 59* (4), 153-155.
- Telama, R. I. S. T. O., & Yang, X. (2000). Decline of physical activity from youth to young adulthood in Finland. *Medicine and science in sports and exercise, 32* (9), 1617-1622.
- Thornton, C. M., Cain, K. L., Conway, T. L., Kerr, J., Saelens, B. E., Frank, L. D., ... & Sallis, J. F. (2017). Relation of Adolescents’ Physical Activity to After-School Recreation Environment. *Journal of physical activity and health, 1*-21.
- Van Acker, R., De Bourdeaudhuij, I., De Martelaer, K., Seghers, J., Kirk, D., Haerens, L., ... & Cardon, G. (2011). A framework for physical activity programs within school–community partnerships. *Quest, 63* (3), 300-320.
- van Sluijs, E. M., Fearne, V. A., Mattocks, C., Riddoch, C., Griffin, S. J., & Ness, A. (2009). The contribution of active travel to children's physical activity levels: cross-sectional results from the ALSPAC study. *Preventive medicine, 48* (6), 519-524.
- Whitehead, S., & Biddle, S. (2008). Adolescent girls' perceptions of physical activity: A focus group study. *European physical education review, 14* (2), 243-262.

World Health Organization. (2016). *Growing up unequal: Gender and socioeconomic differences in young people's health and well-being. Health policy for children and adolescents*, (7).

Yungblut, H. E., Schinke, R. J., & McGannon, K. R. (2012). Views of adolescent female youth on physical activity during early adolescence. *Journal of Sports Science and Medicine*, 11 (1), 39-50.

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I E G U L D Ī J U M S T A V Ā N Ā K O T N Ē

HEALTHY LIFESTYLE IN LITHUANIA AND LATVIA STUDENT POPULATION IN THE CONTEXT OF INDIVIDUAL VALUES

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Abstract. *It is believed that the greatest impact on health is done by lifestyle, which is perceived as the habits and customs as the whole, exposed and amplified by socialization process during all human life. The research problem is formulated under the following main question: How healthy lifestyle is expressed when studying at a higher education institution? The aim of the research - to reveal the healthy lifestyle expression of students in tourism and recreation study programmes in the context of individual values. Research methodological substantiation: quantitative and qualitative research accessibility. Methods: individual expert interview (with higher school representatives) and anonymous questionnaire (students). It was established that: the main determinants of a healthy lifestyle are qualities of character, lifestyle, social environment, motivation, knowledge, communication with parents, other family members and surrounding people; the student's choice of lifestyle is mostly determined by family and friends, in other words, those who surround them constantly; health value cherished in the family encourages students at least partially to live according to the principles of a healthy lifestyle. Also, lack of motivation, time and finances leads to and the indifference of the respondents to live according to the principles of a healthy lifestyle.*

Keywords: *healthy life style, components of a healthy lifestyle, behaviour.*

Introduction

Health in the broadest sense is understood as a comprehensive physical, social and spiritual well-being and a phenomenon of healthy lifestyle is the object of medicine, sociology, public health, psychology, education science, history, anthropology, management science. According to Norkus (2012), although young people are traditionally regarded as the healthiest social group, researches show the number of youth-specific health problems and health-damaging behaviours (Jankauskas & Jatulienė, 2008; Narkauskaitė et al., 2011; Stukas & Dobrovolskij, 2009). These researches show that health of young academic people are affected negatively by lack of physical activity, alcohol, tobacco and other psychoactive substance use, unhealthy diet, stress, inappropriate work and rest, other. It is

believed that the greatest impact on health is done by lifestyle, which is perceived as the habits and customs as the whole, exposed and amplified by socialization process during all human life (Norkus, 2012).

The research problems are formulated under the following questions: How healthy lifestyle is expressed when studying at a higher education institution? How indicators of lifestyle are related to students' attitudes? How/do indicators of a healthy lifestyle depend on the social environment? How/does higher education institution contribute to student health education? What are the factors that mostly affect students' healthy lifestyle? Do students consider healthy lifestyle as a value?

The object of the research – a healthy lifestyle in the context of the individual values.

The aim of the research – to reveal the healthy lifestyle expression of students in tourism and recreation study programmes in the context of individual values.

Objectives of the research:

1. To analyse the components of a healthy lifestyle in the context of the expression of individual values and determinants in student behaviour in theoretical aspect.
2. To prepare research methodology of students' healthy lifestyle expression in the context of individual values.
3. To investigate component expression of healthy lifestyle in students' behaviour in the context of the expression of an individual's values.
4. To analyse the tourism and recreation study programs student's healthy lifestyle components of the expression of determinants.

Research methodological substantiation: quantitative and qualitative research accessibility. Methods: individual expert interview (with higher school representatives) and anonymous questionnaire (students).

The concept of healthy lifestyle and its components

The concept of a healthy lifestyle proposed by Gochman (1997) states that a healthy lifestyle is reflected not only by noticeable, visible actions or behaviour, but also by mental processes and experiences. Proškuvienė (2004) supplements perception of a healthy lifestyle, arguing that it is a daily way of life that strengthens and improves the body's reserve capabilities, helps people to stay healthy and to protect and improve their health. Adaškevičienė and Strazdienė (2013) support this idea stating that a healthy lifestyle is a complex of constant behaviour and habits of a person, which reveals the peculiarities of his or her life and which describes the human way and character. Similarly, Gudžinskienė et al., (2013) - defines a healthy lifestyle, which is a form of an individual's lifestyle,

helping to preserve and strengthen health. Meanwhile Norkus (2012) and Deshpande et al. (2009) identifies the healthy lifestyle, as our daily habits and customs of the whole. Thus, a healthy lifestyle is a multifaceted concept that reveals the everyday human life, which not only helps to maintain health but to cherish and to promote a positive approach to health, and which describes the interaction between an individual's personal characteristics and living conditions. Multidimensionality of a healthy lifestyle concept reveals the fact that it includes the following key components: nutrition; physical activity; tobacco consumption/not consumption of tobacco; alcohol and other psychoactive substance use/not use; pharmaceutical use; work and rest (sleep) mode; sexual behaviour; stress and ability to cope with it; hygiene habits; preventive health check; other behaviours that can affect health. As already clarified, health of the public directly depends on the whole society, public welfare, and the very healthy lifestyle can and should be perceived not only as a universal, humanistic, but also as an economic asset.

Healthy lifestyle factors

After analyzing the theoretical material, it can be stated that the following factors influence the emerging habits of healthy lifestyle: character peculiarities, lifestyle, social environment, communication with parents and other family members, people around them, learning (Gudžinskienė & Česnavičienė, 2013), and often these habits change depending on the environment surrounding the person. According to Bulotaitė, Vičaitė (2016), the comprehensive development of personality provides a great opportunity to properly educate youngsters as well as to care for their health. These are the first factors that influence the personality of how to live well and take care of their health and refuse or even not have bad habits (Fig. 1).

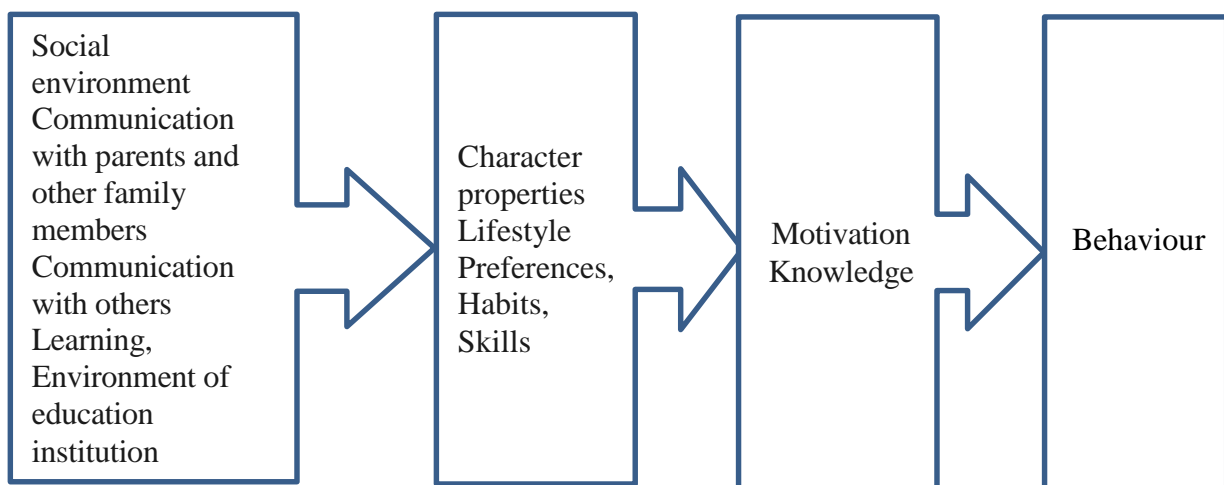


Figure 1. Environmental impact on individual behaviour

Gustaitienė (2003) distinguishes factors influencing healthy lifestyle that have a positive and negative impact on it: habits, attitudes (promotion of healthy lifestyle); skills (healthy lifestyle training, organization of health promotion activities); example (example of a healthy lifestyle of parents and other close relatives); seriousness of a disease (perceived health threat); motivation (understanding the benefits of healthy lifestyle, individual motivation); knowledge (individual information).

Therefore, it can be argued that the main factors shaping healthy lifestyle and influencing on health are: social environment, communication with parents, other family members and others, learning, environment of the education institution, peculiarities of the character, way of life, provisions, habits, skills. In addition, during childhood and puberty, an individual's behavioural pattern often accompanies him or her throughout all life, unless there is a change. Meanwhile, health model influences human motivation, knowledge that changes in the event of an illness. However, sometimes people perceive damage of their behaviour to their health, but do not change their behaviour, this happens because these people are completely not motivated to change something due to health, their knowledge is inadequate or their imaginary social norms are very important.

The concept of healthy lifestyle components in the context of individual values

Paul and Upadhyaya (2017) argue that values are an integral part of human life, which defines what is significant in it. Values define how to behave, what principles to follow and show what is important to a person in life. The aforementioned authors distinguish the following values of an individual: money, friendship, family, religion and morals, politics and social organization, love, leisure, maturity, character traits and work. Thus, values can be not only internal human beliefs, behaviour or goals, but also material objects. Consequently, the notion of values can be described as the ambiguous concept, which is inseparable not only from the individual's inner world, but also from the external one. Health has a different value depending on the social context. In other words, what that value means to the public and the person. However, it is very difficult to say specifically when values have a direct impact on human behaviour (Paul & Upadhyaya, 2017). Values derive from personal human experience, transmitted from generation to generation and partly due to the environment. In other words, not only people shape their values by themselves, experiencing different situations, but also it is done by economic, cultural and political environment situations (Adaškevičienė & Strazdienė, 2013) (Fig. 2).

To summarize, it can be argued that values are the rules of how to behave, the principles to follow and what is important to a person. Individual values are

influenced and shaped by various external and internal factors that help the individual to understand the value of a healthy lifestyle and direct towards different values. Meanwhile, the value of a healthy lifestyle, which manifests itself through education, knowledge, beliefs, as well as family aspects, forms the basis of a healthy lifestyle that is widely recognized and fostered in society, but only it only depends on society whether the value of a healthy lifestyle will become the most important value for everyone.

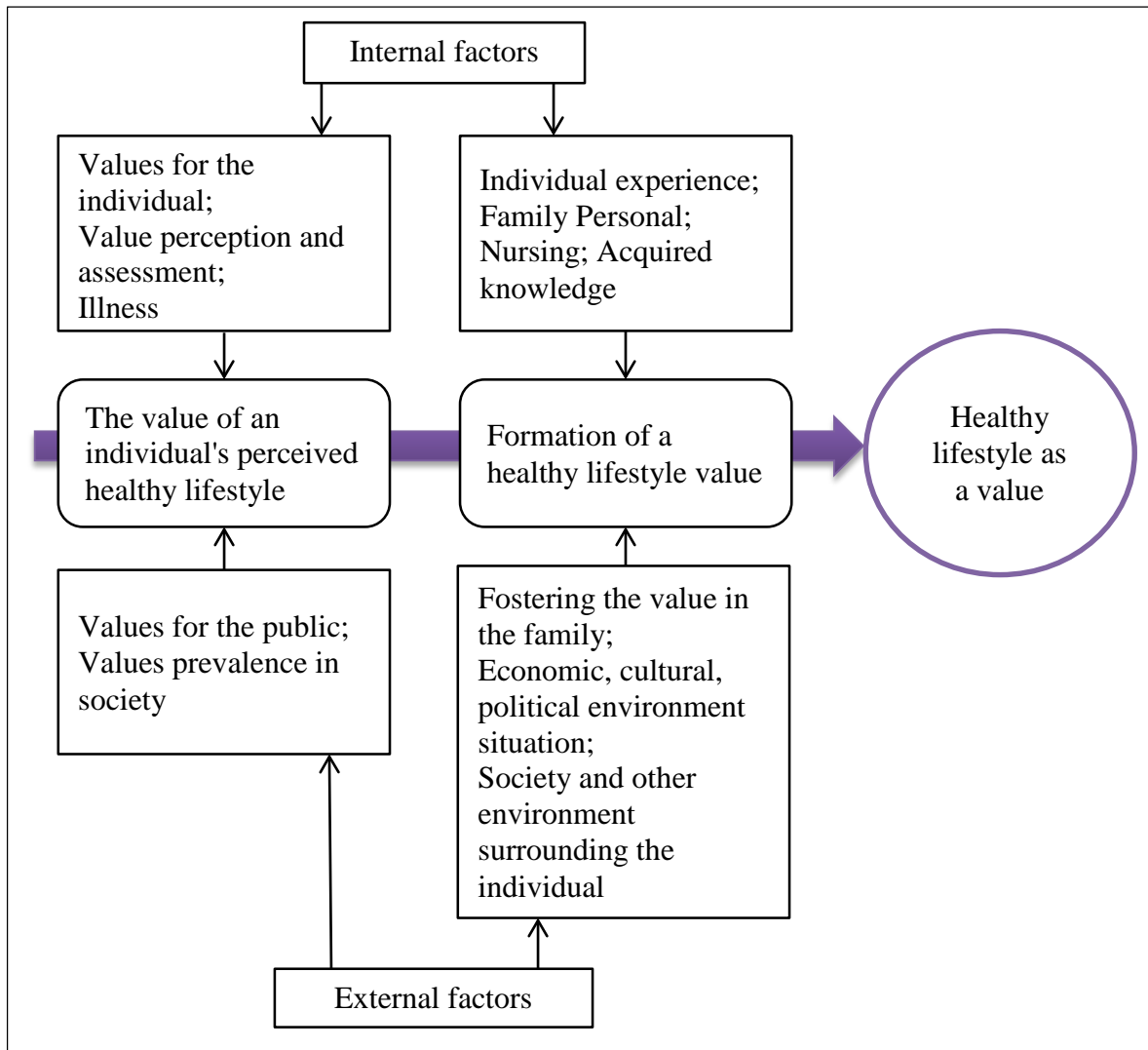


Figure 2. **Environmental impact on individual behaviour**
Research methodology

Quantitative and qualitative research accessibility: ethnographic case research strategy. Methods: semi-structured individual expert interview and anonymous questionnaire. The research was planned for two phases: the first phase of a qualitative study (semi-structured individual expert interview with higher school representatives in Latvia and Lithuanian higher education schools),

the second phase of quantitative research (quantitative study of higher school students' questionnaire). The study provides targeted sampling method – mixed target selection (qualitative research phase) and probability (random) multistage sampling method (quantitative stage of the investigation).

The research of data processing methods: qualitative analysis of the content, context analysis, quantitative analysis with the programme SPSS. The data were analysed and presented structuring them into tables and describing the text i.e. using structural and interpretative analysis of data types in both phases of the research. To present the research data line style was selected, which is also called a linear – analytical style.

Validity of the research (internal/external), reliability and ethics. To support and ensure the internal validity of the research, the researcher participated in the research using mechanical data recording and data storage media, and collected the accuracy of the facts, presenting a research report to the informants. It was also planned to interview a statistically significant number of students. To support and ensure the external validity it was planned to provide most possibly detailed research and report description (interview transcription and abstraction). The research was based on the reliability of pre-prepared research methodology based on scientific Kvale (1996) and Bryman (2016) recommendations of the research instruments, properly collected and analysed research data.

According to the case of the research, research ethics principles group was exceptional - in terms of the ethics of the tested, which was secured on the basis of: voluntary, informative, equivalence, anonymity and confidentiality principles.

Results of the research

When analysing the socio-demographic questions of the quantitative research, it turned out that 45 students of tourists and recreation study area from one higher education institution in Lithuania (code of subjects – LIT) and 27 students of tourism and recreation study area from one higher education institution in Latvia (code of subjects – LAT) participated in the research. Women dominated in both groups (LIT-97.8 %; LAT-92.6 %) with an average age of between 19 and 21-year-old which was of about 70 %. Most of the LIT subjects (73 %) were unemployed, while LAT ones (60 %) were working and studying at the same time, and the average monthly amount of money available to them was different: LIT - from 250 Eur to 450 Eur and LAT – from 250 Eur up to 700 Eur. The level of education of the parents of both groups was similar: LIT: higher - 48.9 %, vocational – 40 %, secondary - 8.9 %, lower secondary -2.2 %, LAT: higher - 40.7 %, vocational – 37 %, secondary - 22.2 %, lower secondary – 0 %. The place of residence of the groups of people was similarly distributed: LIT: with the parents - 24.4 %, the rent of the dwelling in a couple – 24.4 %, dwelling in the dormitory -

37.8 %, LAT: with the parents - 44.4 %, the rent of the dwelling in a couple - 33.3 %, live in a dormitory - 7.44 %.

The first group of questions was designed to find out how students evaluate their health, care for hygiene and how often they are sick, and what are the factors characterizing a healthy lifestyle. Both groups of students distinguished the following factors that mostly characterise healthy lifestyle: healthy and balanced diet, active, sufficiently frequent and regular physical activity, regular and proper rest and sleep mode and suitable emotional state, good emotional well-being, stress-free life. The two groups also noted that they did not sufficiently take care of their health and did not regularly check it (55 %), because they get ill less than twice a year and properly take care of hygiene (washing the teeth twice a day, washing hands as often as possible, and bath 3 to 7 times a week).

The second group of questions was intended to find out whether students live healthy, what people surround them to advocate healthy lifestyle, what factors influence healthy lifestyle, what individual values aspects mainly determine healthy lifestyle promoting and what values students promote, what they consider as the values and what makes influence on them when shaping health as a value.

Student groups responded to the question about the promotion of healthy lifestyle differently: LAT-18.5 % – not propagated, LIT-44.4 % – not propagated. The type or style of the students' lifestyle is mostly influenced by: the family (LAT-55.5 %, LIT-55.5 %), friends (LAT-36 %, LIT-46.75 %), financial situation (LAT-77.9 %; LIT- 71.1 %), Internet (LAT-25.9 %, LIT-42.2 %). Healthy lifestyle and its promotion are not considered as an important value (Table 1):

Table 1 Important values in your life (1- not important at all, 5 – very important)

		1	2	3	4	5
LAT	Family	(3.7%)	(3.7%)	(3.7%)	(3.7%)	(85.2%)
	Freedom	(3.7%)	(3.7%)	(3.7%)	(29.6%)	(59.3%)
	Friends	(3.7%)	(0.0%)	(7.4%)	(33.3%)	(55.6%)
	Respect	(0.0%)	(3.7%)	(11.1%)	(40.7%)	(44.4%)
	Healthy lifestyle	(3.7%)	(22.2%)	(40.7%)	(11.1%)	(22.2%)
LIT		1	2	3	4	5
	Family	(0.0%)	(0.0%)	(0.0%)	(8.9%)	(91.1%)
	Freedom	(0.0%)	(0.0%)	(0.0%)	(22.2%)	(77.8%)
	Respect	(0.0%)	(0.0%)	(2.2%)	(15.6%)	(82.2%)
	Friends	(0.0%)	(2.2%)	(11.1%)	(35.6%)	(51.1%)
Healthy lifestyle	(8.9%)	(8.9%)	(37.8%)	(28.9%)	(15.6%)	

Respondents also noted that their lifestyle habits changed after studying: LAT - eating habits declined (regular eating; fruit and vegetable consumption; drinking water – 41 %); sleep, rest (time of sleep and rest, quality of sleep and

rest – 66 %), and experiencing stress increased (stressful situations, increased nervousness – 67 %); LIT - sleeping and rest declined (time of sleep and rest, quality of sleep and rest – 77 %); experiencing stress increased (stressful situations, increased nervousness - 75.6 %) as well as self (personality) realization - 42.2 %.

The third group of questions exposes aspects of students' rational nutrition. More than half of the respondents do not comply with the diet, but they seek to have breakfast every day. Also, more than half of the students seek to use vegetables and fruits daily and avoid fast food that is eaten less than once a week. Only 30 % of them drink 2 litres of water per day.

The fourth group of questions was designed to find out students' psychological health, that is, whether they feel mentally tired, if they experience stress, how they fight with it and what is the biggest influence for stressful situations, if they take medicines, etc. Both groups of students of the research spend 7-8 hours for sleep on average, but they experience stress at different rates: LAT - 45.4 % (very often and often), LIT - 62.2 % (often and very often). The main causes of stress are studies, specific study requirements, pressure, reconciliation of work and studies, as well as health issues. They struggle with stress in two ways: they try to avoid it or simply do nothing.

The fifth group of questions allows learning the expression of physical activity of students and how it has changed/unchanged after they started to study. Most of the respondents in both groups (about 65 %) do not sport or exercise very passively - up to an hour per week, and there is no particular disruption to it, just do not want to be bored or do not feel the need.

The sixth group of questions refers students' addictions: alcohol, drugs and tobacco consumption habits of gambling. In the LAT group, 40.7 % are smokers, while in the LIT group only 26.7 % of the students smoke. About 10 % of all respondents do not consume alcohol, the vast majority (52 %) of them use alcohol several times a month. None of the groups uses drugs, but they have tried to use it, and it is about 10 % in both groups.

The respondents were asked to evaluate the contribution of the university to the promotion of healthy lifestyles. Students from both groups noted that College/University has been set up to be sufficiently physically active and College/University has opportunity to get help from a psychologist. Majority of them would like to have special training on health in their College/University on these topics: physical exercise, food nutrition, stress management.

The authors also tried to search for certain interfaces:

- Spearman rank correlation coefficient was used to analyse the link between parent education and duration of students' healthy lifestyle promotion, and did not show a statistically significant relationship

($p=0.64>0.05$). Parent education does not affect the duration of the promotion of healthy lifestyles;

- Spearman rank correlation coefficient was used to analyse the link between parent education and how often students consume alcohol and did not show a statistically significant relationship ($p=0.796>0.05$). Parent education does not affect the frequency of alcohol consumption;
- Spearman rank correlation coefficient was used to analyse the link between income and how often students consume alcohol and did not show a statistically significant relationship ($p=0.679>0.05$). Incomes do not affect the frequency of alcohol consumption. Incomes were divided into two groups: up to 250 euros - 40 (55.6 %) and more than 250 euros - 32 (44.4 %).

Qualitative research (semi structured interviews) found that both groups of students studying at the higher education institutions had the opportunity to regularly eat, choose physical or artistic self-expression activities. Unlike the Latvian Higher institution in the Lithuanian Higher institution according to the school regulation, first-year and second-year students have to take exercise at least two hours a week. Although it is compulsory, students are not willing to use school sports facilities, which are equipped with only basic gear. Students tend to go to city fitness gyms due to better equipment. In addition, they express their wishes to take exercise with a coach of certain sport.

Conclusion

1. The concept of healthy lifestyle is a multifaceted concept that emphasizes the individual's behaviour, habits, customs and practices that promote health. Healthy lifestyle components, rational nutrition, physical activity, no harmful habits, work and rest regimes, stress and ability to deal with it, and personal health screening are manifested through the values of a healthy lifestyle that directly affect students' actions, which depend on how they perceive it, appreciate what they know about it, in other words, how they behave in order to be healthy.

2. Research methodological substantiation: quantitative and qualitative research accessibility. Methods: individual expert interview (with higher school representatives) and anonymous questionnaire (students). The study provides targeted sampling method - mixed target selection (qualitative research phase) and probability (random) multistage sampling method (quantitative stage of the investigation). The research of data processing methods: qualitative analysis of the content, context analysis, quantitative analysis with the programme SPSS. The data were analysed and presented structuring them into tables and describing the text i.e. using structural and interpretative analysis of data types in both phases of

the research. To present the research data line style was selected, which is also called a linear – analytical style.

3. After exploring the expression of the components of a healthy lifestyle of students in the study programmes of tourism and recreation, in their behaviour it was revealed that students do not adequately take care of their health and do not check it regularly because they are sick less than twice a year and properly take care of hygiene (washing the teeth twice a day, washing hands as often as possible, and bathing 3 to 7 times a week). More than half of the respondents do not comply with the diet, though seek to have breakfast every day. Also, more than half of the students try to use vegetables and fruits daily and avoid fast food that is eaten less than once a week. Both groups of students drink less than 2 litres of water per day, average sleep time is 7-8 hours and more than half of them often experience stress.

The main causes of stress are considered studies, specific study requirements, pressure, reconciliation of work and studies, and health issues. About one third of the respondents smoke, and those who do not use alcohol all make up about 10 %. None of groups use drug, but have tried to use about 10 % in both groups. Most people do not exercise or exercise only very passively – up to an hour per week, and there is no particular disruption to them. The researchers failed to capture a meaningful link between parental education and the duration of the student's healthy lifestyle promotion; between parents' education and how often students consume alcohol; between income and how often they consume alcohol.

4. Both groups of the respondents distinguished the following factors that characterize the healthiest lifestyle: healthy and balanced diet, active, sufficiently frequent and regular physical activity, regular and proper rest and sleep mode and suitable emotional state, good emotional well-being, stress-free life. The type of way or style of the students is mostly influenced by the family, friends, financial situation, the Internet. Healthy lifestyle and its promotion are not considered to be an important value by the respondents.

References

- Adaškevičienė, E., & Strazdienė, N. (2013). *Vaikų sveikatą stiprinančio fizinio aktyvumo ugdymas*. Klaipėda: Klaipėdos universiteto leidykla.
- Bryman, A. (2016). *Social Research Methods*. London: Oxford University Press.
- Bulotaitė, L., Vičaitė, S. (2016). Su sveikata susijusį elgesį aiškinančios teorijos ir modeliai: kas skatina keisti elgesį. *Public Health, 1* (72), 9-20.
- Deshpande, S., et al. (2009). Factors Influencing Healthy Eating Habits Among College Students: An Application of the Health Belief Model. *Canada Health Marketing Quarterly, 26* (2), 145-164.

- Gochman, D. S. (1997). Health Behavior Research: Definitions and Diversity. In D. S. Gochman (ed.) *Handbook of Health Behavior Research, Vol. I. Personal and Social Determinants*. New York: Ple-num Press.
- Gudžinskienė, V., & Česnavičienė, J. (2013). Sveikos gyvensenos ugdymo įgyvendinimas 5-8 klasių mokinių požiūriu. *Socialinis darbas, 12* (2), 319–329.
- Gustaitienė, L. (2003). *Sveikatos priežiūros politika ir organizacija*. Kaunas: Vytauto Didžiojo universitetas.
- Jankauskas, J., & Jatulienė, N. (2008). *Vilniaus universiteto studentų gyvenimo kokybė*. Vilnius: VPU.
- Kvale, S. (1996). *InterViews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, CA: Sage.
- Narkauskaitė, L. et al. (2011). Psichiką veikiančių medžiagų vartojimo paplitimas tarp Lietuvos aukštųjų mokyklų studentų. *Visuomenės sveikata, 1* (52), 91–97.
- Norkus, A. (2012). *Sveika gyvensena Lietuvos studentų populiacijoje: edukacinis diagnostinis aspektas*. Daktaro disertacija, ŠU.
- Paul, E., & Upadhyaya, H. (2017). Gender Wise Relationship between Values and Moral Judgment of High School Students. *The International Journal of Indian Psychology, 89*, 107-113.
- Proškovienė, R. (2004). *Sveikatos ugdymo įvadas*. Vilnius: Leidykla.
- Stukas, R., & Dobrovolskij, V. (2009). Visuomenės sveikatos studentų mitybos ypatumai. *Sveikatos mokslai, 1* (62), 2147–2153.

HEALTH SAVING STRATEGY AS A FACTOR OF “SOCIETY WELLNESS”

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Abstract. *The article deals with the problem of reducing the motor activity of a modern man, especially a young man, in connection with scientific and technological progress. The results of the presented study confirm these fears: inactive lifestyle is becoming the norm. The importance of promoting the health saving strategy as one of the factors of successful social and economic development of the society is justified.*

Keywords: *active lifestyle, health saving, physical inactivity, physical activity, policy of healing the nation.*

Introduction

The problem of health saving of the population has now become especially urgent. Throughout the world, there is an alarming trend of physical inactivity, associated primarily with a decline in the motor activity of a modern man. Scientific and technological progress has significantly changed the way people live: the share of manual labor of the adult population has significantly decreased in comparison with the last century, total automobilization has led to a significant decrease in the motor activity of both men and women. Nutrition of a modern man is characterized by an abundance of fats and sugar, which leads to an increase in the total caloric intake of daily meals, while energy costs, limited by low motor activity, lead to excess weight, which, in turn, is the cause of a number of diseases.

In this regard, the definition of the optimal mode of motion for adults and its introduction into educational practices of adults refers to a number of particularly topical scientific problems, including the health-saving education.

In addition, it should be specially noted that the process of socialization as well as the choice of a civic position, the acquisition of true spiritual and moral qualities, professional development, healthy lifestyle are becoming a rather difficult problem for young people in the era of global change. Unfortunately, in the course of our scientific research in 2014-2015 we found confirmation of such negative trends as the growth of drug addiction, alcoholism, addictive behavior, the deterioration of the health of young people as a whole, which is connected with insufficient preventive work in all these areas. But it is young people who must live and act in conditions of increasing global competition, increasing the role of innovation and the importance of human capital as the main factor of economic development. In our opinion, the fundamental factor in the successful social adaptation of young people is the state youth policy aimed at the development of both social and physical activity of the younger generation. We consider the health of the population, especially children and young people, to be one of the most important conditions for ensuring the security, stability and mobility of the state. Currently, the formation of a healthy lifestyle, the development of physical culture and mass sports occupies a significant place among the priorities of the policy of any country. Effective policy should provide the society and the state with opportunities for innovative development by creating conditions for the successful socialization and effective self-realization of citizens, the development and effective use of the potential of each person in the public interest.

With reference to the above mentioned, our goal was to conduct a study of the physical activity of the adult population of Russia and Latvia using the International Physical Activity Assessment Questionnaire IPAQ (Biernat & Stupnicki, 2007) and to develop an educational program for the adult population on health saving based on the results of the study.

The theoretical background of the problem

Motor activity is the basic component of human activity and it must be high in order to form a high level of health. The World Health Organization (WHO) recommended physical activity rates for adults, depending on the classification of their professional activities. Thus, for an adult, the level of physical activity is considered insufficient if it is below 150 minutes of moderate or 75 minutes of intense aerobic exercise per week or their equivalent combination (World Health Organization, 2013). The WHO bulletin notes that low rates of physical activity

in the world indicate ineffectiveness of the measures taken to promote it, and society underestimates the importance of active lifestyles.

The classification of motives of active leisure, identified by Ivona Kaczmarek is interesting (Kaczmarek, 2006). She notes that people between 25-35 years of age are attracted by the healthy lifestyle and the benefits of motor activity. The desire for external perfection of the figure, the beauty of movements, the active lifestyle for this age group often has a direct connection with the modern fashion trends, the possibility of self-affirmation in society, a successful career. This age group makes extensive use of tourism and travelling. As a recreation, they often choose ski resorts, mountain tours, rowing and sailing. Women usually do fitness.

As the main motives women aged 36-55 put forward health-improving motives (35 %) and men - entertaining (36 %). The majority of women of this age group associate the improvement of the state of health with the prevention of diseases and the reduction of excess weight, the elimination of the downsides of the figure, the removal of the neuropsychic tension. For men, the organization of free time, the removal of emotional overload after a day's work, the desire to have a hobby are of great importance.

For older people, active recreation with their family is of great importance. The health motives are put forward as the main. Moreover, for older women the desire to improve their health and prevent diseases takes the first place (35 %). Men put forward entertaining motives with the purpose of spending free time, desire of communicating with new people, personal enrichment to the foreground.

On the one hand the analyzed data testify the interest of the adult population in physical activity, and on the other hand, the lack of a productive experience in its implementation.

The idea of Yu. P. Kobayakov (2003) on the importance of social function in human life and its contribution to daily energy costs seems to be productive. Indeed, the time spent on training and in the future on production activities are caused by the reduction of free time, thus creating a problem, including active leisure. The impossibility of the full realization of a person's natural need for movement can be compensated by students' daily compulsory physical training and by adult's self-training.

Materials and methods

In 2016-2017 we conducted a survey of 500 adults of the Russian Federation and 496 adults of Latvia using the International Physical Activity Assessment Questionnaire (IPAQ). The age of the respondents was between 25 and 70, the ratio of males and females was approximately equal, among the respondents there

were representatives who lead both active and inactive life. The results of the study are presented in Table 1.

Table 1 Evaluation of physical activity of adults in Russia and Latvia (% of respondents)

The level of physical activity	Russia	Latvia
Physical inactivity	34	31
Low physical activity	21	24
Optimum physical activity	25	27
High physical activity	20	18

The obtained results indicate that the physical activity of the adults of both countries can be assessed as insufficient. Thus, about a third of respondents (36 % of Russian and 31 % Latvian respondents) scored points indicating that they are physically inactive. Optimum physical activity was noted only in a quarter of respondents.

The overwhelming majority of the respondents (88 % of Russian and 81 % Latvian respondents) do not have intensive physical activity, except for cases related to their professional activities. 60 % of Russians and 56 % of Latvians have non-intensive physical activity, while its duration during the day is slightly higher for Latvians (the average of 58 minutes per day for Latvians and 49 minutes for respondents from Russia). Every day almost all respondents walk, but the duration of this walk is on the average less than 40 minutes. It should be noted that there were no statistically significant differences between the samples of the two countries.

To clarify the results we further identified the motives for physical training among the same group of the respondents (the respondents could name several motives). The results of the survey are presented in Table 2.

Table 2 Motives for physical training of adults in Russia and Latvia (% of respondents)

Motive	Russia	Latvia
Leisure	32	36
Health promotion	71	72
Pleasure	28	35
Other	18	14

The study of motivation showed that only 32 % of the respondents in Russia and 36 % of the respondents from Latvia use physical activity for leisure. Despite this considerable percentage, most of them devote to the movement only 1-2 days a week. At the same time walking is the most important activity among Russians, for the Latvians this list is more diverse and besides walking includes cycling, running and swimming.

At the same time, we do not state the low quality of motor activity of Russians, but only talk about the greater diversity among the inhabitants of Latvia. The role of walking as the most accessible and simple way of physical activity is evaluated in recently performed system meta-analyzes (Boone-Heinonen, 2008; Oguma, 2004; Zheng, 2009), while there is no unique estimate of cycling in such analyzes.

It was found that about 70 % of adults of both sexes in both countries note the importance of motor activity for promoting health, well-being, and longevity. Among the elderly, there is often a hedonist effect of movement - getting bodily pleasure (tone, stimulation, improvement of emotional state, etc.).

We interviewed representatives of the same group about the reasons for the low physical activity of the adult population (respondents could name several reasons), the results of the survey are presented in Table 3.

**Table 3 Reasons for low physical activity of adults in Russia and Latvia
(% of respondents)**

Reason	Russia	Latvia
Lack of free time	47	40
Lack of acceptable conditions	31	18
Laziness	47	52
Low exercise tolerance	25	18
Lack of interest	10	14

As it can be seen from Table 3, the respondents consider the lack of free time (47 % of Russians and 40 % of Latvians) and the lack of acceptable conditions (remoteness of park areas, absence of bicycle paths, etc.) - the dissatisfaction of the Russian respondents is significantly higher: 31 % of Russians compared with 18 % of Latvians - to be the reasons of low motor activity. The internal reasons of low motor activity include laziness (47 % and 52 %), poor health and (or) low tolerance of physical activity (25 % and 18 %), lack of interest in this type of leisure (10 % and 14 %).

The obtained data actually coincide with the results of the study carried out more than 10 years ago by O. S. Schuster (Schuster, 2003). So, according to him, in the study of the reasons preventing physical activity and sport, the lack of free time, employment at work, household duties (41 %) took the first place, they were followed by such reasons as: lack of suitable conditions for doing the desired sport, remoteness of sports centers from home, lack of good coaches (18 %), the third position was taken by laziness and lack of will power (13 %). Our researches showed that laziness as the reason of low physical activity today has taken the first place (47 % and 52 %), and this is the indicator of the growth of the passive life position of the population as a whole.

Proposals for solving the problem

Based on the results of the study, we developed a supplementary education program for the adult population on health saving and optimization of physical activity. The program is based on the strategic concept of socialization of adults by means of education, formulated by I. Yu. Tarhanova (Tarkhanova, 2015). According to this concept, one of the basic principles of adult education is the principle of social adequacy of the educational process, which requires the content and means of creating the social situation in which this process is organized. The objectives of education should be oriented at real social and economic conditions and presuppose the formation of predictive readiness for the realization of various social, professional and life tasks among adults, including health saving objectives.

The program is aimed at the value-semantic personal self-improvement of an adult (transformation of the old and the generation of new, higher professional-personal senses, semantic orientations), which provides the potential for constant development and self-renewal of the sense sphere of the personality on the basis of its ability to create meaning. Thus, noting the general growth of the existential vacuum, feelings of purposelessness and emptiness, Frankl (1946) emphasizes that the main task of modern education is not to be satisfied with the transfer of traditions and knowledge, but to improve the ability that gives a person the opportunity to find unique senses.

The proposed program has modular principles, its content and structure are based on findings drawn from the results of our study. Thus, the diagnostic module is used as the first module of the program, in which students have an opportunity to assess their available level of motor activity, determine the most preferable motives for activating their lifestyle, and identify barriers that prevent it. The next is the psychological module of the program, it includes trainings on the formation of the value of motor activity and motivational consulting. The next module is informational, in the course of its mastering the students get acquainted with the theoretical questions of designing their optimal mode of physical activity, form ideas about its kinds and physiological effects, study the foundations of healthy nutrition. This module also includes the prevention of cardiovascular diseases. The main time of mastering the program is allocated to the practical module, where skills of competent movement are developed. Students learn the techniques of Scandinavian walking, jogging, cycling, together with the teacher they develop exercises for morning gymnastics, learn techniques to relieve muscle tension caused by sedentary work.

The experience of implementing educational programs for adults has shown that the learning process activates the person, since the energy costs for mental

activity can not be ignored. We agree with the opinion of V. G. Zilov (1998) that modern ideas about information homeostasis are more hypothetical in nature, although the importance of information entering the central nervous system from multiple receptors, the status of "real" constants, its coding and urgent information about the work of executive bodies and regulatory mechanisms are beyond doubt. In the conditions of everyday reality, all three processes - metabolism, energy and information exchange - are in continuous and close interaction with each other, manifesting at each moment of time one of its facets.

If you look at the problem of health saving more broadly, not only from the medical and educational point of views, it becomes obvious that during the transformation period the strategy of a healthy lifestyle undoubtedly contributes to the development of an active life position of citizens in general. The initiative to implement this strategy should be assumed by the state, public organizations and each of us, supporting and developing not only adults, but also youth and children's public associations of all levels, creating new forms and mechanisms of interaction.

The role of mass sports and physical education in the formation of patriotic and civic foundations of a person's personality in the process of its socialization cannot be overestimated. It is these fundamentals that primarily determine the national identification of each person, without its mastering and accepting civil self-consciousness cannot be formed.

The general sense of the strategy of a healthy lifestyle is the creation of conditions and incentives for the socialization and life activity of a healthy generation that would promote the manifestation, development and realization of the makings, abilities and talents of citizens with the purpose of social and economic development of the society.

Summary

The study revealed a low level of physical activity of the adults in Russia and Latvia. The main reasons respondents referred to are the lack of free time and a reluctance to make efforts.

Increased physical activity of adults contributes to their viability, so the problem of reduced physical activity of modern adult must be addressed, including through the introduction of educational practices, including in the field of health-education.

School health education of middle and senior citizens should be focused on the real socio-economic conditions and to assume the formation of students' readiness for the implementation of health saving tasks like life tasks. The main content of these programs should be given a working off of skills literacy movement and the development of techniques increase motor activity.

References

- Biernat, E., Stupnicki, R., & Gajewski, A. (2007). International Physical Activity Questionnaire IPAQ. *Physical Education and Sport*, vol.6-7, 4-9.
- Boone-Heinonen, J., Evenson, K. R., Taber, D. R., & Gordon-Larsen, P. (2008). Walking for prevention of cardiovascular disease in men and women: a systematic review of observational studies. *Obesity Reviews*, Vol. 10, 204-217.
- Frankl, V. (1946). *Man's Search for Meaning*. Boston: Beacon Press books Ltd.
- Kaczmarek, I. (2006). *Increased motor activity of the population coming of age means of improving physical training*. Poznan.
- Kobyakov, Y. P. (2003). The concept of human norms of motor activity. *Theory and Practice of Physical Culture: scientific and theoretical journal*, № 11. Downloaded from: <http://lib.sportedu.ru/press/tpfk/2003n11/p20-23.htm>
- Oguma, S., & Shinoda-Tagawa, T.(2004). Physical activity decreases cardiovascular disease risk in women: review and meta-analysis. *Am. J. Prev. Med.* Vol. 26, 407-418.
- Schuster, O. S. (2003). *Psychology of a healthy lifestyle and the media*. SPb.: Publishing house of St. Petersburg University.
- Tarkhanova, I. Ju. (2015). The strategic concept of socialization of adults means of additional vocational training. *Yaroslavl Pedagogical Bulletin: scientific magazine*, № 4, 8 – 12.
- Zheng, H., Orsini, N., Amin, J., Wolk, A., Nguyen, V. T. T., & Ehrlich, F. (2009). Quantifying the dose-response of walking in reducing coronary heart disease risk: meta-analysis. *Eur. J. Epidemiol.* Vol. 24, 181-192.
- Zilov, V. G. (1998). Methodological bases of health. *Meeting of the philosophical problems of modern medicine*. Moscow: Since Ltd., 32-36.
- Why are we failing to promote physical activity globally?* (2013). Bulletin of the World Health Organization; 91:390-390A. Downloaded from: <http://www.who.int/bulletin/volumes/91/6/13-120790.pdf>

ANTHROPOMETRIC CHARACTERISTICS AND ANAEROBIC POWER OF LOWER LIMBS AND THEIR RELATIONSHIPS WITH RACE TIME IN FEMALE SPEED CLIMBERS

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Abstract. Previous research indicates that high results in speed climbing are determined by a high level of explosive strength and muscle power in the lower limbs. However, a literature review shows that no studies have analysed women practicing this climbing discipline. Therefore, the main goal of the study was to assess the level of development of physique and the level of explosive strength and muscle power of the lower limbs of female speed climbers at a representative level. Furthermore, an attempt was made to analyse the relationships between the variables studied and race time in female speed climbers. The study included 5 female players (speed climbers) who were members of the national team in 2016. The measurements were made during the Polish National Team Camp. The analysis was based on the results of the fastest races expressed in seconds. The measurements and indices computed in the study included body height, body weight, lean body mass, BMI and ponderal index. The assessment of the power of the lower limbs was carried out using two jump tests: CMJ with arm swing and CMJ. Power was expressed relative to body weight and to lean body mass. The highest relationships with race time were recorded for body height ($r = 0.94$, $p < 0.05$), body weight ($r = 0.96$, $p < 0.01$) and lean body mass (LBM) ($r = 0.98$, $p < 0.01$). Strong but statistically insignificant relationships were recorded between race time and power indicators of the lower limbs (correlations above $r = -0.66$). In female speed climbing, race time can be determined by the level of physique. Smaller body size can allow female climbers to perform faster and achieve better times in speed climbing. It can be suggested that in female speed climbing, a high level of maximum alactic anaerobic capacity of the lower limbs is an important factor that affects race time. The results of our own research suggest that in female speed climbing, specific body characteristics may to a greater extent determine the race time compared to anaerobic maximum power of the lower limbs.

Keywords: *explosive strength, female speed climbing, lower limbs, maximum anaerobic power, sport climbing.*

Introduction

Sport climbing includes three disciplines which differ depending on motor demands: speed climbing, bouldering and lead climbing. In 2016, the International Olympic Committee made a decision on qualification of sports climbing to the programme of the Olympic Games in Tokyo in 2020. The event format that combines the three climbing disciplines (combined format) means that the best athletes from all the disciplines will compete with each other during Tokyo Olympics. Previous research on sports climbing was performed mainly among climbers who compete in lead climbing (Watts et al., 1993; Mermier et al., 2000; Rokowski & Tokarz, 2007; Rokowski & Żak, 2010; Tomaszewski et al., 2011; Ozimek et al., 2017). The examinations were also performed in groups of boulderers (Michailov et al., 2009; White & Olsen, 2010; Macdonald & Callender, 2011; Ozimek et al., 2017) and speed climbers (Ryepko, 2013; Krawczyk & Ozimek, 2014; Krawczyk et al., 2015a; Krawczyk et al., 2015b).

In light of the analysis of scientific literature related to lead climbing, morphofunctional factors which determine sports result have been sufficiently examined, which allowed for identification of this discipline as an endurance and strength sport. The most important factors in bouldering include: relative strength of fingers, rate of force development over time and maximal anaerobic power of the upper limbs. In light of current research, speed climbing, which has been little explored to date, is characterized by high requirements in terms of strength and speed abilities. The principle difference between individual disciplines consists in the different role of the upper and lower limbs. Unlike in two other disciplines, the major role in speed climbing is played by the lower limbs (Krawczyk et al., 2015a).

In terms of somatic build, it was found that the biggest effect in the context of the achievement of a high sports skill level in sport climbing is from average body build, low body mass and low body fat percentage (Watts et al., 1993; Watts, 2004; Sheel, 2004; Giles & Brandenburg, 2017). Some studies have demonstrated that specific body build proportions can be a factor in sport climbing (Rokowski, 2006; Tomaszewski et al., 2011; Ozimek et al., 2017).

In light of the literature analysis, it can be concluded that no research has been conducted to examine groups of women who competed in speed climbing. Previous research in the area of speed climbing was based on the examinations of male athletes which indicate high importance of maximum alactic anaerobic power of the lower limbs. Therefore, and with consideration for the fact that women will participate in the Olympic Games in Tokyo, the main aim of this study was to evaluate the level of the development of the somatic build and level

of anaerobic capacity of the lower limbs of female speed climbers. Furthermore, the attempt was made to determine the correlations of the analysed characteristics and indices with race time for female speed climbers. This knowledge can be used by coaches in physical fitness preparation during the development of training programs for female athletes.

Material and Methods

The examinations were performed in a group of female elite speed climbers (n=5). At the moment of measurements, the climbers were members of the Polish national team who competed in the discipline of speed climbing. Measurements were made during a camp of the national team in February 2016 in the facilities of the State Higher Vocational School in Tarnów. Body height measurements were performed. Body mass (BM), fat percentage (FM %) and lean body mass (LBM) was evaluated by means of the TANITA model BC-730 according to recommendations Lohmann et al. (1997). These measurements were used to compute ponderal index and BMI. Explosive strength of the lower limbs of climbers were measured using the counter-movement jump with arm swing (CMJ) and counter-movement jump without arm swing (CMJb), with each jump performed twice, with the better result recorded in cm. Jump height was used to compute the level of maximal alactic anaerobic power (Pmax CMJ and Pmax CMJb) expressed in absolute values (W) and relative to body mass (W/kg) and to lean body mass (W/kg LBM). The study also used the equation developed by Sayers et al. (1999). The tests were performed by means of the Optojump Next measurement system (Microgate, Bolzano, Italy).

The statistical analysis of the data collected in the study used the following calculations:

1. Basic descriptive statistics were computed (arithmetic mean, standard deviation and coefficient of variation for each variable);
2. The Shapiro-Wilk test was conducted to evaluate the consistency of the distribution of variables with normal distribution;
3. The linear Pearson's correlations was used and correlation coefficients $r_{(xy)}$ were computed in order to evaluate strength and directions of correlations between the best race time obtained by athletes during training and other variables. Correlation coefficients were presented for the male climbers studied. Analysis of correlations was also performed between the best time and level of explosive strength and anaerobic power of lower limbs for all the athletes studied. The results with correlations coefficients with $p < 0.05$ were adopted as statistically significant. For each value of $r_{(xy)}$ we calculated the coefficient of determination R^2 .

The collected data were developed using the STATISTICA 8 software package (StatSoft®). The graphical representation of the results was prepared using the Microsoft® Excel software from the Office 2007 package.

Results

Table 1 presents mean values of standard deviations and coefficients of variation calculated for all the analysed variables in the climbers studied. Table 2 presents the results of the analyses aimed to determine strength and directions of correlations between the variables examined and climbing race time. The highest and statistically significant correlations were found for body height, body mass and lean body mass. Correlations indicated that higher body mass (body height, body mass and/or lean body mass) are correlated with longer race times. High but statistically insignificant values of the coefficients of correlation with race time were found in this group for the indices of body build such as BMI and ponderal index. Correlations of race time and the level of parameters of the explosive strength and anaerobic relative power of lower limbs were high but statistically insignificant.

Table 1 Statistical characteristics of somatic variables, strength parameters and anaerobic power in female climbers

	<i>x</i>	<i>sd</i>	<i>v%</i>
BH (cm)	163.74	2.72	1.66
BM (kg)	52.74	4.87	9.23
FM %	17.34	2.92	16.83
LBM [kg]	41.34	3.22	7.79
BMI	19.64	1.26	6.42
ponderal index	43.71	0.77	1.76
race time (s)	9.60	1.83	19.08
CMJ (cm)	39.62	4.39	11.07
CMJb (cm)	34.54	3.84	11.11
Pmax CMJ [W]	2739.06	181.57	6.63
Pmax CMJb [W]	2430.70	141.32	5.81
Pmax CMJ [W/kg]	52.23	5.40	10.33
Pmax CMJb [W/kg]	46.34	4.36	9.40
Pmax CMJ [W/kg LBM]	66.55	6.60	9.92
Pmax CMJb [W/kg LBM]	59.03	5.11	8.65

Table 2 Values of Pearson correlation coefficients and coefficient of determination R² between the time of the fastest race and the somatic variables and parameters of anaerobic power

	<i>r (x,y)</i>	<i>R²</i>	<i>p-value</i>
BH (cm)	0.94	0.89	*
BM (kg)	0.96	0.93	**
FM %	0.31	0.10	ns
LBM [kg]	0.98	0.96	**
BMI	0.86	0.74	ns
ponderal index	-0.70	0.49	ns
CMJ (cm)	-0.71	0.51	ns
CMJb (cm)	-0.76	0.57	ns
Pmax CMJ [W]	0.12	0.01	ns
Pmax CMJb [W]	0.26	0.07	ns
Pmax CMJ [W/kg]	-0.72	0.52	ns
Pmax CMJb [W/kg]	-0.72	0.52	ns
Pmax CMJ [W/kg LBM]	-0.66	0.43	ns
Pmax CMJb [W/kg LBM]	-0.67	0.45	ns

* - statistically significant correlation at $p < 0.05$

** - statistically significant correlation at $p < 0.01$

ns – no significant correlation

Discussion

In speed climbing competitions, climbers compete based using the time record format. They ascend a standardized climbing route with height and width of 15 and 3 metres, respectively. Wall inclination is 5°, whereas topographical locations of the holds and footholds are the same for each competitor. Analysis of races during the European Championships in 2017 indicates that race times in female competitions were: 7.68 to 13.11 seconds¹. Duration of the female race leads to the conclusion that this type of exercise is primarily based on the use of anaerobic processes of energy generation. Therefore the high level of anaerobic capacity will be critical to the ability to perform exercise at maximal or very high intensity. It can be also concluded that high phosphagen performance (ATP-PC system) of the energy system will be one of key components of physical performance in speed climbing.

Muscle power is determined by maximal muscle force and speed of muscle shortening (Wilmore & Costill, 1994; Chmura, 2016). Power, i.e. ability to develop a substantial force of muscle contraction over a relatively short time, largely determines speed of movements (Chmura, 2016). In our study, we used a

¹ Source: <http://www.ifsc-climbing.org/index.php/world-competition/results#!comp=6411&cat=24> and <http://www.ifsc-climbing.org/index.php/world-competition/results#!comp=6411&cat=23>

single maximal jump test to measure power. Time of loading in this test was equal to one movement cycle. Gabryś et al. (2004 as cited in Miszczenko 1990) argued that the level of muscle contraction force during a maximal jump is 100 %, whereas the basic factors that limit the loading power include the amount and composition of muscular tissues. The results of statistical analyses indicated (although statistically significant correlations were not found) that high level of alactic anaerobic maximal power and explosive power of the lower limbs can be important factors that impact on race time in women (high values of $r_{x,y}$ and R^2). The results are consistent with the results of previous studies (Ryepko, 2013; Krawczyk & Ozimek, 2014; Krawczyk et al., 2015a; Krawczyk et al., 2015b), which indicated a high level of explosive strength (anaerobic power) of the lower limbs as a significant determinant of performance in this sport. This leads to the conclusion that the development of alactic maximal anaerobic power should represent one of the major goals in training programs dedicated to this climbing discipline. Furthermore, it can be presumed that in the process of recruitment of athletes for this climbing discipline, determination of the level of alactic maximal anaerobic power of candidates should become an inherent component of the process.

In sport climbing, insignificant body dimensions and low level of adipose tissue are conducive to the achievement of high performance in the sport (Watts et al., 1993; Mermier et al., 2000; Sheel, 2004; Giles & Brandenburg, 2017; Michailov et al., 2009). Rokowski et al. (2016) and Ozimek et al. (2016) conducted an analysis of somatic build of both female and male athletes of all climbing disciplines at an elite level. These studies have shown that in the group of women, female speed climbers differed from lead climbers but were similar in their body build to female boulderers. Comparison of our findings concerning body height and body mass in female climbers with the results documented by Ozimek et al. (2016) indicates that female climbers were characterized by similar mean values (body height: 163.74 vs. 167; body mass: 52.74 vs. 55.8; BMI: 19.64 vs. 19.84; ponderal index: 43.71 vs. 43.89). An analysis of the results for means and measures of variability (standard deviation, coefficient of variability) obtained in our research and studies by Rokowski et al. (2016) and Ozimek et al. (2016) indicates that their values were similar. The above reports documented somatic data of athletes classified at top places in the IFSC ranking, which leads to the conclusion that in terms of body build (analysed in these terms), the level of development of somatic characteristics of female climbers from the Poland national team can be treated as a model and that it meets the standards of international-level speed climbers. However, these findings should be approached carefully since our own study and the study by Rokowski et al. (2016) and Ozimek et al. (2016) were performed using the relatively insignificant research samples. This indicates the need for the measurements in bigger groups of athletes.

A high level of development of muscle mass (including skeletal muscle mass, especially with high content of type 2 fibres) has a substantial effect on strength and anaerobic power (Bompa & Haff, 2010) and can significantly impact on the athlete's speed. In light of these findings, the results of the analyses of correlations of LBM in the athletes studied with race times (a high level of LBM is statistically significantly correlated with longer race time) seem to be interesting. This might suggest that substantial muscle hypertrophy in speed climbing and, consequently, increased body mass (also negatively correlated with race time) may lead to worse sports skill level of the athlete. Furthermore, with high correlations (negative) between body height and race time, the female climbers with greater body size can achieve poorer results in speed climbing. Greater body dimensions can have a negative effect on relative indices of strength and power. As results from previous studies, relative strength can substantially improve chances to achieve high level of achievement in climbing sports (Watts et al., 1993; Ruchlewicz et al., 1997; Mermier et al., 2000; Watts, 2004; Sheel, 2004; Rokowski & Staszkiwicz, 2010) and represents a manifestation of the climbing talent (Ruchlewicz et al., 1997). Therefore, it seems that among the somatic characteristics of female climbers, the biggest effect on the level of achievement in the sport is from the morphological muscle structure: high percentage of fast-twitch fibres per relatively low muscle mass. Therefore, it can be suggested that the main and the most important somatic aptitude in this competition is quality (composition) of muscle fibres rather than their quantity (muscle mass).

Conclusion

The findings of this study lead to the following conclusions:

1. Our results suggests that the specific body build of female speed climbers can determine race time to a greater extent compared to maximal anaerobic power of the lower limbs.
2. Race time in female sport climbers can be determined by the level of body size of the athlete. Insignificant body dimensions can be conducive to the achievement of better race times in speed climbers.
3. It can be indicated that a high level of maximal alactic anaerobic power of the lower limbs of female speed climbers has an effect of race time.

References

- Bompa, T., & Haff, G. (2010). *Periodyzacja. Teoria i metodyka treningu*. COS Warszawa.
- Chmura, J. (2016). Kształtowanie szybkości w grach zespołowych. (In:) Zajac A., Chmura J. (Eds) *Współczesny system szkolenia w zespołowych grach sportowych* (pp. 165-206). AWF Katowice.

- Krawczyk et al., 2018. *Anthropometric Characteristics and Anaerobic Power of Lower Limbs and their Relationships with Race Time in Female Speed Climbers*
- Gabryś, T., Borek, Z., Szmaltlan-Gabryś, U., & Gromisz, W. (2004). *Test Wingate. Wybrane zagadnienia diagnostyki wydolności beztlenowej w sporcie*. Beskidzka Wyższa Szkoła Turystyki w Żywcu.
- Giles, L., & Brandenburg, J. (2017). *Physiology of climbing*. (In:) Seifert L., Wolf P., Schweizer A. *The Science of Climbing and Mountaineering*. Routledge, (electronic document).
- Krawczyk, M., & Ozimek, M. (2014). Somatic traits and motor skill abilities in top-class professional speed climbers compared to recreational climbers. *Antropomotoryka, Journal of Kinesiology and Exercise Science*, 66 (24), 25-32.
- Krawczyk, M., Ozimek, M., & Pocięcha, M. (2015b). Poziom wybranych zdolności kondycyjnych i ich związek z wynikiem sportowym we wspinaczce na czas. In: Gabryś T., Stanula A. (Eds). *Trening sportowy I: planowanie - kontrola – sterowanie* (pp. 65-76) Państwowa Wyższa Szkoła Zawodowa im. rtm. Witolda Pileckiego w Oświęcimiu.
- Krawczyk, M., Ozimek, M., & Rokowski, R. (2015a). *Value of select displays of strength and speed abilities in speed climbing at the highest sport level - analysis of cases*. International Scientific Conference, Motor Ability in Sports - Theoretical Assumptions and Practical Implications, At Cracow, 2015a.
- Lohmann, T. G., Houtkooper, L., & Going, S. B. (1997). Body fat measurement goes high-tech. No all are created equal. *ACSM'S Health & Fitness Journal*, vol. 1, no. 1, 30-35.
- Macdonald, J. H., & Callender, N. (2011). Athletic profile of highly accomplished boulderers. *Wilderness Environ Med*, 22 (2), 140-143.
- Mermier, C. M., Janot, J. M., Parker, D. L., & Swan, J. G. (2000). Physiological and anthropometric determinants of sport climbing performance. *British Journal of Sports Medicine* 2000, 34, 359-366.
- Michailov, M. L., Mladenov, L. V., & Schoeffl, V. (2009). Anthropometric and strength characteristics of world-class boulderers. *Medicina Sportiva*, 13 (4), 231-238.
- Ozimek, M., Krawczyk, M., Zadarko, E., Barabasz, Z., Ambroży, T., Stanula, A., Mucha, D. K., Jurczak, A., & Mucha, D. (2017). Somatic profile of the elite boulderers in Poland. *Journal of Strength and Conditioning Research*, 31 (4), 963-970.
- Ozimek, M., Rokowski, R., Ręgwelski, T., & Krawczyk, M. (2016). Charakterystyka różnic w zakresie podstawowych cech somatycznych pomiędzy zawodniczkami specjalizującymi się w konkurencjach: na trudność, bouldering i na szybkość na najwyższym poziomie wyszkolenia. (In:) Szmaltlan-Gabryś U., Stanula A. (Eds) *Trening sportowy II: planowanie – kontrola – sterowanie* (pp. 83-92) Państwowa Wyższa Szkoła Zawodowa im. rtm. Witolda Pileckiego, Oświęcim.
- Ozimek, M., Staszkiwicz, R., Rokowski, R., & Stanula, A. (2016). Analysis of tests evaluating sport climber's strength and isometric endurance. *Journal of Human Kinetics*, 53, 249-260.
- Rokowski, R., & Staszkiwicz, R. (2010). Wspinaczka sportowa – rola i znaczenie przygotowania siłowego dla osiągnięć wspinaczy. *Sport Wyczynowy*, 2, 19-34.
- Rokowski, R., & Tokarz, R. (2007). Znaczenie zdolności motorycznych o podłożu energetycznym we wspinaczce sportowej w konkurencji na trudność w stylu on-sight. *Antropomotoryka*, 40, 81-91.
- Rokowski, R., & Żak, S. (2010). Znaczenie zdolności motorycznych o podłożu energetycznym we wspinaczce sportowej w konkurencji na trudność w stylu on-sight - analiza przypadków. *Antropomotoryka*, 52, 85-96.

- Rokowski, R. (2006). *Główne determinanty morfo – funkcjonalne skuteczności zawodnika we wspinaczce sportowej w konkurencji na trudność w stylu ON SIGHT*. Praca doktorska. AWF Kraków.
- Rokowski, R., Ozimek, M., & Krawczyk, M. (2016). Charakterystyka różnic w zakresie podstawowych cech somatycznych pomiędzy wspinaczami specjalizującymi się w konkurencjach: na trudność, bouldering i na szybkość na najwyższym poziomie wyszkolenia. (In:) Szmatlan-Gabryś U., Stanula A. (Eds) *Trening sportowy II: planowanie – kontrola – sterowanie* (pp. 73-82) Państwowa Wyższa Szkoła Zawodowa im. rtm. Witolda Pileckiego, Oświęcim.
- Ruchlewicz, T., Chwała, W., & Staszkiwicz, R. (1997). Parametry charakteryzujące siłę wybranych grup mięśni u wspinaczy sportowych. *Antropomotoryka*, 16, 79-88.
- Ryepko, O. A. (2013). Feature and functionality of speed and power capabilities of elite climbers and various types of rock climbing. *Physical Education of Students*, 6, 60-65.
- Sayers, S., Harackiewicz, D. V., Harman, E. A., Frykman, P N., & Rosenstein, M. T. (1999). Cross-validation of three jump power equations. *Med Sci Sports Exerc*, 31 (4), 572-577.
- Sheel, A. W. (2004). Physiology of sport rock climbing. *British Journal of Sports Medicine*, 38 (3), 355-359.
- Tomaszewski, P., Gajewski, J., & Lewandowska, J. (2011). Somatic profile of competitive sport climbers. *Journal of Human Kinetics*, 39, 107-113.
- Watts, P. B. (2004). Physiology of difficult rock climbing. *European Journal of Applied Physiology*, 91, 361-372.
- Watts, P. B., Martin, D. T., & Durtschi, S. (1993). Anthropometric profiles of elite male and female competitive sport rock climbers. *Journal of Sports Sciences*, 11, 113-117.
- White, D. J., & Olsen, P. D. (2010). A time motion analysis of bouldering style competitive rock climbing. *Journal of Strength and Conditioning Research*, 24 (5)1356-1360.
- Wilmore, J. H., & Costill, D. L. (1994). *Physiology of sport and exercise*. Human Kinetics.

MĀSZINĪBU STUDENTU KARJERAS IZVĒLES IETEKMĒJOŠIE FAKTORI

Factors Influencing Career Choice among Nursing Students

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Abstract. *Choosing a career is a complex and multi-factorial decision-making process that is based on several personal, situational and organizational factors. The purpose of this study is a literature review to determine factors influencing career choice among nursing students. The literature review displays that nursing students make their career decisions from a combination of personal interests in health care and their desire to help others. From the beginning of the studies students may have strong career preferences. Before they graduate and eventually decide about the future workplace, their career choices undergo several transitions. Career choices are influenced both by the students inclination before starting medical school as well as any exposure during training in medical school. Experiences in chosen specialties during training as well as the social environment of the medical school, the teaching programme and clinical staff role models can influence career preferences.*

Keywords: *career choice, career perceptions, clinical placement, influencing factors, nursing.*

Ievads

Introduction

Veselības aprūpes cilvēkresursu jomā patlaban vērojams medicīnas personāla trūkums, kas īpaši lielā apmērā ir tieši mūsu nodrošinājumā. Pēc Latvijas Māsu asociācijas datiem ik gadu aptuveni 250 personas iegūst māsas kvalifikāciju, bet tikai aptuveni 60 uzsāk darbu slimnīcās.

Profesijas izvēle ir komplekss daudzfaktoru lēmumu pieņemšanas process, kas balstās uz dažādiem personīgiem, situatīviem un organizatoriskiem faktoriem (Briggs, 2006). Literatūras apskats parāda, ka studenti pieņem lēmumu par labu māsas karjerai, apvienojot, galvenokārt, personiskās intereses veselības aprūpē un viņu vēlmi palīdzēt citiem. Šī izvēle saistās arī ar virkni citu faktoru konkrētās profesijas izvēlē. Turpmāko karjeru ietekmē gan studentu nodomi pirms iestāšanās izglītības iestādē, gan arī pats studiju process. Pieredze izvēlētajā specialitātē mācību laikā, kā arī izglītības iestādes sociālā vide, studiju kursu

organizācija un klīnisko darbinieku lomu modeļi var ietekmēt turpmākās karjeras izvēli atbilstoši iegūtajam diplomam.

Ne vienmēr sākotnējie priekšstati par profesiju realizējas. Studiju procesa laikā studentu nodomi, saistībā ar turpmāko karjeru, var mainīties. Liela nozīme ir klīniskajai videi, kurā studenti iziet mācību prakses. Priekšstats par profesiju veidojas, galvenokārt, prakses laikā, kad students saskaras ar reālo darba vidi un pienākumiem un notiek studentu socializācija.

Klīniskajai mācību videi ir nozīmīga ietekme uz topošo māsu karjeras izvēli, tomēr ir dažādi citi faktori, kuri ietekmē studentu turpmākās profesijas izvēli un attīstību. Identificējot profesijas izvēles ietekmējošos faktoros un strādājot pie atsevišķu faktoru uzlabošanas, ir iespējams panākt lielāku jauno māsu ienākšanu un palikšanu veselības aprūpes nozarē.

Darba mērķis. Zinātniskās literatūras pārskats par karjeras izvēles ietekmējošajiem faktoriem māszinību studentu vidū.

Māsas karjeru ietekmējošie faktori *Factors affecting nurse's career*

Turpmākās karjeras attīstību ietekmē gan studentu nodomi pirms iestāšanās izglītības iestādē, gan arī pats studiju process. Karjeru ietekmējošos faktoros var iedalīt divās grupās – faktori, kuri ietekmē māsas profesijas izvēli un faktori, kuri ietekmē māsas turpmākās karjeras attīstību.

Profesijas izvēli ietekmējošie faktori. Māsas profesijas izvēles process saistās ar periodu pirms lēmuma pieņemšanas par labu kādai no veselības aprūpes izglītības iestādēm un dokumentu iesniegšanu tajā. Šeit tiek apjausti un analizēti dažādi faktori, kuri saistās ar māsas profesijas izvēles plusiem un mīnusiem.

Pētījumi liecina, ka veselības aprūpes studenti savus karjeras lēmumus pieņem balstoties uz personiskās intereses faktoriem un viņu vēlmi palīdzēt citiem (Hayes & Shakya, 2013; Tanalp et al., 2012). Vairāki pētījumi liecina, ka altruisms, vēlme rūpēties un palīdzēt citiem tiek atzīts par spēcīgu ietekmējošo faktoru studentiem, kuri izvēlas māsas profesiju (Halperin & Mashlach-Eizenberg, 2013; Wu et al., 2015; Keshishian, 2010; Gallagher et al., 2008).

Iepriekšēja pieredze veselības aprūpē ir minama kā vēl viens ietekmējošais faktors māsas profesijas izvēlē, piemēram, ja ģimenē ir kāds radnieks, kurš strādā veselības aprūpē, kā arī vēlme rūpēties par citiem (Larsen et al., 2003; Price, 2009), saskarsme ar slimību personīgi vai aprūpējot ģimenes locekli, esot veselības aprūpes iestādē un novērojot profesionāļu darbu var attīstīt turpmāko veselības aprūpes speciālista karjeru (Yeager & Cheever, 2007; Drenkard et al., 2002). Šī pieredze var ietekmēt veselības aprūpes karjeras izvēli gan pozitīvi, gan negatīvi.

Akadēmiskie rezultātīvie rādītāji ir kā ietekmējošais faktors mūsu profesijas izvēlei. Iesniedzot dokumentus augstākās izglītības iestādē tiek ņemti vērā rezultāti, ar kādiem pabeigta vidusskola. Ir studenti, kuru vērtējumi neļauj apgūt ārsta, zobārsta vai farmaceita profesiju, kur ir jābūt augstiem iestāšanās rezultātiem, tomēr vēlme saistīt savu karjeru ar veselības aprūpi ir liela. Lai iestātos māszinību programmā, nav nepieciešami tik augsti vērtējumi, tāpēc bieži vien tiek izvēlēta šī studiju programma kā alternatīva (Liaw et al., 2016).

Darba perspektīvas tiek uzskatītas par praktisko mūsu karjeras aspektu, kas varētu ietekmēt karjeras izvēli. Tas ietver vēlmi pēc darba iespējām, darba stabilitātes un labiem ienākumiem. Māsas profesija bieži vien tiek vērtēta kā viegli pieejama darba tirgū un raksturojas ar darba stabilitāti (Tanalp et al., 2012; Dal, 2009), jo vienmēr būs slimi cilvēki, kuriem ir nepieciešama aprūpe. Tomēr māsas profesiju bieži uztver kā slikti apmaksātu darbu (Rezaei-Adaryani et al., 2012).

Praktiski faktori, kas raksturo māsas darba apstākļus, piemēram, autonomija lēmumu pieņemšanā un darba intensitāte ir saistīti ar turpmākās karjeras izvēli. Šeit iezīmējas arī tādas īpašības kā pārāk smags darbs (Brodie et al., 2004) un “netīrs” darbs (Norman, 2015; Hadley et al., 2007), kas attur studentus turpināt darbu māsas profesijā.

Faktori, kas saistās ar sociālo ietekmi – sociālais statuss un profesijas prestižs, atalgojums, sabiedrības pieņemtie stereotipi par sievišķīgu profesiju, kas traucē vīriešu kārtas pārstāvjiem veiksmīgi integrēties darba tirgū un citi nozīmīgi faktori, kas būtiski ietekmē studentu karjeras attīstības lēmuma pieņemšanas procesu (Liaw et al., 2016). Bieži vien vecāki savām atvasēm uztver šo profesiju kā nepievilcīgu. Kāds Lielbritānijā veikts pētījums atklāj, ka studenti atzīst māsas profesiju kā zemas kvalifikācijas „netīru” darbu (Norman, 2015) un šī profesija asociējas ar zemu atalgojumu (Whitehead et al., 2007). Citā pētījumā, kurš tika veikts Kuveitā, autori Al-Kandari & Lew (2005) atklāja, ka Kuveitas skolēni uztver mūsu profesiju kā fiziski nogurdinošu.

Māsas karjeras attīstības ietekmējošie faktori. Pieredze izvēlētajā specialitātē mācību laikā, kā arī izglītības iestādes sociālā vide, studiju kursu organizācija un klīnisko pedagogu lomu modeļi var ietekmēt turpmākās karjeras izvēli atbilstoši iegūtajam diplomam. Kā nozīmīgs mūsu karjeras izvēles un attīstības ietekmējošais faktors tiek minēts klīniskā mācību vide. Apmierinātība ar studiju laikā nodrošināto mācību un klīnisko vidi var atstāt nozīmīgu iespaidu uz turpmākās karjeras attīstību un izvēli, kā arī apmierinātību ar darbu. Tās prasmes, kuras tiek attīstītas studiju laikā, iesakņojas studentā un var izpausties attīstot profesionālo karjeru.

Klīniskās prakses māszinību studentiem ir svarīgas vairākos aspektos un raksturojas kā neaizvietojs māszinību izglītības elements (Tanner, 2006). No izglītības viedokļa, klīniskā mācību vide ir vieta, kur tiek pielietotas, izstrādātas

un integrētas prasmes, zināšanas un attieksmes, kas izstrādātas mācību programmas teorētiskajā daļā (Newton et al., 2010). Vairāki pētījumi atklāj, ka klīniskās prakses pieredze var ietekmēt māszinību studentu attieksmi pret turpmāko darba vietas izvēli (Abbey et al., 2006, Happel & Platania-Phung, 2012, Happel & Gaskin, 2013; Bjørk et al., 2014). No studentu skatu punkta klīniskās prakses izraisa gan stresu (Timmins & Kaliszer, 2002), gan gandarījuma sajūtas (Hartigan-Rogers et al., 2007), un tās uzskata arī par svarīgāko māsu izglītības daļu (Myrick et al., 2006). Absolvējušās māsu apgalvo, ka, visticamāk, meklēs darba vietas tur, kur viņām bija pozitīva pieredze mācību klīniskās prakses laikā (Courtney et al., 2002, Edwards et al., 2004), tādēļ svarīgs uzdevums ir nodrošināt labu klīnisko mācību vidi visās veselības aprūpes iestādēs, kuras izmanto kā mācību prakses vietas.

Studiju programmas ietvaros, klīniskās prakses ir būtiska sastāvdaļa, kas dod iespējas lekcijās apgūto izmantot klīniskā vidē un pieredzēt dažādus ar māsu darbu saistītus aspektus. Klīniskā vide arī kalpo, lai studentus socializētu profesijā un veicinātu profesionālās lomas attīstību.

Studentu profesionālā socializācija *Process of student professional socialization*

Klīniskā apmācība tiek uzskatīta par sarežģītu procesu, kas sastāv no kognitīvo, afektīvo un psihomotoro prasmju integrēšanas. Klīniskā apmācība ļauj studentiem integrēt teorētiskās un klīniskās prasmes, kuras nepieciešamas pacientu problēmu risināšanā, kā arī izmantot kritisko domāšanu, radoši un profesionāli aprūpēt pacientus. Studentiem ir arī jāapgūst profesionālās vērtības un identitāti, izmantojot socializāciju.

Socializācija ir process, kurā cilvēks apgūst sabiedrībā pieņemtās vērtības un normas, sociālo pieredzi un zināšanas, pateicoties tam viņš kļūst par pilntiesīgu un aktīvu sabiedrības locekli (Комаров, 2003)

Veselības aprūpes speciālistu socializācijai var būt divi aspekti. Organizatoriskā socializācija ietver iekļaušanos organizācijas struktūrā, uzturot kontaktu ar kolēģiem, apgūstot organizācijas kultūru un praktiskās vides formālos un neoficiālos noteikumus. Profesionālā socializācija ir vērtību kopums un profesijas kultūras internalizācija (Zarshenas et al., 2014). Turklāt profesionālā socializācija ir process, kurā studenti attīstās kā profesijas pārstāvji, internalizē savas profesijas vērtības un izrāda šīs vērtības ar savu uzvedību (Gaberson et al., 2014). Šis process ietekmē gan karjeras izvēli, gan nodomu palikt izvēlētajā darbā (Day et al., 2005). Profesionālā socializācija sākas studiju pirmajā dienā un turpinās, kad studenti absolvējuši un ienāk darba tirgū. Pedagogi, mācībspēki, mentori, kā arī pacienti un viņu ģimenes, var kļūt par socializējošiem aģentiem (Chitty & Black, 2011). Attieksme pret aprūpi var pāriet no pozitīvas uz negatīvu

caur profesionālās socializācijas procesu, kas ietekmē apmierinātību ar darbu un profesijas saglabāšanu (Mackintosh, 2006).

Profesionālā identitāte ir sociālās identitātes forma, piederības izjūta noteiktai profesijai, profesionāļu lokam, kurā izpaužas spēja pilnveidoties un mainīties kā profesionālim, spēja izjust šīs profesijas atšķirību un vienreizību citu profesiju vidū, kā arī spēju palikt saskaņā ar sevi un savu profesionālo darbību, neskatoties uz vides pārmaiņām un to ietekmi. Profesionālā identitāte attīstās no efektīvas profesionālās socializācijas (MacLellan, Lordly, & Gingras, 2011; Mooney, 2007), un profesionālā socializācija ir efektīvas prakses pamats (Perry, 2009). Māsas profesionālā identitāte veidojas no vērtībām, un tā ietver gan indivīda pašvērtējumu kā mācai, gan māsas tēlu, ko projicē citos.

Profesionālās vērtības, kas ir viens no būtiskiem profesionālās socializācijas elementiem, ir panākumu atslēga praktizējošajai mācai, jo tās veido pamatu profesionālai uzvedībai (Chitty & Black, 2011). Vērtības tiek definētas kā cilvēka dzīves pamatprincipi, kas motivē rīcību, darbojas kā standarti, lai novērtētu un pamatotu rīcību, un kas tiek apgūti gan socializācijas, gan arī unikālās mācību pieredzes ceļā. Daži pētījumi liecina, ka esošās vērtības var ietekmēt karjeras izvēli. Vairāki autori ierosina, ka māszinību studentiem savā karjeras izvēlē jāvadās no tā, vai viņu personiskās vērtības sakrīt ar profesijas vērtībām (Adams et al., 2006).

Secinājumi **Conclusions**

Veselības aprūpes sistēma visā pasaulē saskaras ar veselības aprūpes speciālistu trūkumu. Starp visām veselības aprūpes profesijām māsu profesijā ir vislielākais darbinieku trūkums.

Profesijas izvēle ir komplekss un daudzfaktoru lēmumu pieņemšanas process, ko var ietekmēt dažādi faktori. Literatūras apskats parāda, ka māszinību studenti savus karjeras lēmumus analizē un apzina jau pirms dokumentu iesniegšanas konkrētā izglītības iestādē, balstoties uz personiskās intereses faktoriem un viņu vēlmi palīdzēt citiem, iepriekšējo pieredzi veselības aprūpē, akadēmiskajiem rādītājiem, darba perspektīvām, praktiskajiem faktoriem un faktoriem, kas saistīti ar sociālo ietekmi.

Kā nozīmīgs māsu karjeras attīstības ietekmējošais faktors tiek minēta klīniskā mācību vide. Klīniskās prakses raksturojas kā neaizvietojs māszinību izglītības elements. No izglītības viedokļa, klīniskā mācību vide ir vieta, kur tiek pielietotas, izstrādātas un integrētas prasmes, zināšanas un attieksmes, kas izstrādātas mācību programmas teorētiskajā daļā un klīniskās prakses pieredze var ietekmēt māszinību studentu attieksmi pret turpmāko darba vietas izvēli.

Klīniskās prakses laikā studenti apgūst profesionālās vērtības un identitāti, izmantojot socializāciju. Studentam veiksmīgi iekļaujoties profesionālās socializācijas procesā un attīstot to, tas var pozitīvi ietekmēt gan karjeras izvēli, gan nodomus palikt izvēlētajā darbā.

Summary

There is currently a shortage of medical staff, which is particularly high for nurses in the health care field. Literature review brings information about several key factors influencing the career choice and perceptions towards nursing as a future profession among students.

Nursing students make their career decisions from a combination of personal interests in health care and their desire to help others as well as career decision is affected by prior healthcare exposure, academic performance, job prospects, practical factors and social influences. Important impact of clinical environment on work place choice in future as well as professional socialization has been defined.

Understanding of nursing students' career decision-making process and this decision impact factors gives a possibility to education delivers and clinical practice organisers to improve environment of studies and work environment. The quality of education provided and compliance with the criteria are topical issues that are becoming more and more attention. By identifying impact factors on profession choice and improving certain factors it becomes possible to trigger more nurses choose and stay in medical care field.

Literatūra References

- Abbey, J., Abbey, B., Bridges, P., Elder, R., Lemke, P., Liddle, J., & Thornton, R. (2006). Clinical placements in residential aged care facilities: the impact on nursing students' perception of aged care and the effect on career plans. *The Australian Journal of Advanced Nursing*, 23, 14–19.
- Adams, K., Hean, S., Sturgis, P., & Macleod-Clark, J. (2006). Investigating the factors influencing professional identity of first-year health and social care students. *Learning in Health and Social Care*, 5 (2), 55–68.
- Al-Kandari, F. H., & Lew, I. (2005). Kuwaiti high school students' perceptions of nursing as a profession: implications for nursing education and practice. *Journal Nursing Education*, 44 (12), 533–540.
- Al-Kandari, F. H., & Lew, I. (2005). Kuwaiti high school students' perceptions of nursing as a profession: implications for nursing education and practice. *Journal Nursing Education*, 44 (12), 533-40.
- Bjørk, I. T., Berntsen, K., Brynildsen, G., & Hestetun, M. (2014). Nursing students' perceptions of their clinical learning environment in placements outside traditional hospital settings. *Journal of Clinical Nursing*, 23 (19-20), 2958–2967.
- Briggs, S. (2006). An exploratory study of the factors influencing undergraduate student choice: the case of higher education in Scotland. *Studies in Higher Education*, 31 (6), 705–722.
- Brodie, D. A., Andrews, G. J., Andrews, J. P., Thomas, G. B., Wong, J., & Rixon, L. (2014). Perceptions of nursing: Confirmation, change and the student experience. *International Journal of Nursing Studies*, 41 (7), 721–33.

- Chitty, K. K., & Black, B. P. (2011). *Becoming a nurse. Professional nursing: Concepts and challenges (6th ed.)*. Maryland, WV: Saunders Elsevier.
- Courtney, M., Edwards, H., Smith, S., & Finlayson, K. (2002). The impact of rural clinical placement on student nurses' employment intentions. *Collegian: Journal of the Royal College of Nursing, Australia*, 9, 12–18.
- Day, R., Field, P., Campbell, I., & Reutter, L. (2005). Students' Evolving Beliefs about Nursing: From Entry to Graduation in a Four-Year Baccalaureate Program. *Nurse Education Today*, 25 (5), 636–43.
- Dal, Ü., Arifoğlu, B., & Razi, G. S. (2009). What factors influence students in their choice of nursing in North Cyprus? *Procedia - Social and Behavioral Sciences*, 1 (1), 1924–30.
- Drenkard, K., Swartwout, E., & Hill, S. (2002). Nursing exploration summer camp. *Journal of Nursing Administration*, 32 (6), 354–62.
- Edwards, H., Smith, S., Finlayson, K., & Chapman, H. (2004). The impact of clinical placement location on nursing students' competence and preparedness for practice. *Nurse Education Today*, 24, 248–255.
- Gaberson, K. B., Oermann, M. H., & Shellenbarger, T. (2014). *Clinical teaching strategies in nursing (4th ed.)*. New York, NY: Springer.
- Gallagher, J., Clarke, W., & Wilson, N. (2008). Understanding the motivation: A qualitative study of dental students' choice of professional career. *European Journal of Dental Education*, 12 (2), 89–98.
- Hadley, M. B., Blum, L. S., Mujaddid, S., Parveen, S., Nuremowla, S., & Haque, M. E. (2007). Why Bangladeshi nurses avoid 'nursing': Social and structural factors on hospital wards in Bangladesh. *Social Science & Medicine*, 64 (4), 1166–77.
- Hayes, B. W., & Shakya, R. (2013). Career choices and what influences Nepali medical students and young doctors: a cross-sectional study. *Human Resources for Health*, 11 (1), 5.
- Halperin, O., & Mashiach-Eizenberg, M. (2013). Becoming a nurse – a study of career choice and professional adaptation among Israeli Jewish and Arab nursing students: a quantitative research study. *Nurse Education Today*, 34 (10), 1330–1334.
- Happel, B., & Gaskin, C. J. (2013). The attitudes of undergraduate nursing students towards mental health nursing: a systematic review. *Journal of Clinical Nursing*, 22, 148–158.
- Happel, B., & Platania-Phung, C. (2012). Mental health placements in a general health setting: no substitute for the real thing! *Journal of Clinical Nursing*, 21, 2026–2033.
- Hartigan-Rogers, J. A., Cobbett, S. L., & Amirault, M. A. (2007). Musie-Davies ME. Nursing graduates' perceptions of their undergraduate clinical placement. *International Journal of Nursing Education Scholarship*, 4, 1–12.
- Yeager, S. T., & Cheever, K. H. (2007). A residential nursing camp program: Effects on adolescent attitudes toward nursing careers. *Journal Nursing Education*, 46 (10), 452–9.
- Keshishian, F. (2010). Factors influencing pharmacy students' choice of major and its relationship to anticipatory socialization. *American Journal of Pharmaceutical Education*, 74 (4), 75.
- Larsen, P., McGill, J., & Palmer, S. (2003). Factors Influencing Career Decisions: Perspectives of Nursing Students in Three Types of Programs. *Journal of Nursing Education*, 42 (4), 168–73.
- Liaw, S. Y., Wu, L. T., Holroyd, E., Wang, W., Lopez, V., Lim, S., & Chow, Y. L. (2016). Why not nursing? Factors influencing healthcare career choice among Singaporean students. *International Nursing Review*, 63 (4), 530-538.

- Mackintosh, C. (2006). Caring: The Socialization of Pre-Registration Student Nurses: A Longitudinal Qualitative Descriptive Study. *International Journal of Nursing Studies*, 43 (8), 953–62.
- MacLellan, D., Lordly, D., & Gingras, J. (2011). Professional socialization in dietetics: A review of the literature. *Canadian Journal of Dietetic Practice and Research*, 72 (1), 37-42.
- Myrick, F., Phelan, A., Barlow, C., Sawa, R., Rogers, G., & Hurlock, D. (2006). Conflict in the preceptorship or field experience: a rippling tide of silence. *International Journal of Nursing Education Scholarship, Volume 3, Issue 1, Article 6*.
- Mooney, M. (2007). Professional socialization: The key to survival as a newly qualified nurse. *International Journal of Nursing Practice*, 13, 75–80.
- Newton, J. M., Brian, C. J., Ockerby, C. M., & Cross, W. M. (2010). Clinical learning environment inventory: factor analysis. *Journal of Advanced Nursing*, 66 (6), 1371–1381.
- Norman, K. M. (2015). The image of community nursing: implications for future student nurse recruitment. *British Journal of Community Nursing*, 20 (1), 12–18.
- Perry, B. (2009). *More moments in time: Images of exemplary nursing*. Edmonton, AB: AU Press.
- Price, S. (2009). Becoming a Nurse: A Review and Synthesis of Qualitative Research on Socialization to the Nursing Profession. *Journal of Advanced Nursing*, 65 (1), 11–19.
- Rezaei-Adaryani, M., Salsali, M., & Mohammadi, E. (2012). Nursing image: An evolutionary concept analysis. *Contemp Nurse*, 43 (1), 81–9.
- Tanalp, J., Ilguy, D., Dikbas, I., & Oktay, I. (2012). Demographic profile and future expectations of students enrolled in a Turkish private dental school. *Journal of Dental Education*, 76 (6), 800–809.
- Tanner, C. A. (2006). Thinking like a nurse: a research-based model of clinical judgment in nursing. *Journal of Nursing Education*, 45 (6), 204-11.
- Timmins, F., & Kaliszer, M. (2002). Aspects of nurse education programmes that frequently cause stress to nursing students: fact-finding sample survey. *Nurse Education Today*, 22, 203–211.
- Whitehead, E., Mason, T., & Ellis, J. (2007). The future of nursing: career choices in potential student nurses. *British Journal of Nursing*, 16 (8), 491–496.
- Wu, L. T., Low, M. M., Tan, K. K., Lopez, V., & Liaw S. Y. (2015). Why not nursing? A systematic review of factors influencing career choice among healthcare students. *International Nursing Review*, 62 (4), 547–562.
- Zarshenas, L., Sharif, F., Molazem, Z., Khayyer, M., Zare, N., & Ebadi, A. (2014). Professional socialization in nursing: A qualitative content analysis. *Iranian Journal of Nursing & Midwifery Research*, 19 (4), 432–438.
- Комаров, М. С. (2003). *Социология. Учебное пособие для студентов вузов*. Издательство: Аспект Пресс.

RECREATIONAL ACTIVITY OF WOMEN AGED 50+ IN THE LARGE CITY ENVIRONMENT

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Abstract. *The number of older adults is increasing in all European countries and these tendencies are also noticeable in Poland. Maintaining a good psychophysical status through participation in various forms of activity is known to be the precondition for successful ageing. The family status of older adults is characterized by feminization (the major part of the population of older adults is women). Older adults in Poland report their health status as poor and feel lonely. To address this problem, the Long-Term Senior Policy for 2014-2020 specified the areas of corrective measures where recreational activity takes top place. The best form of physical activity for seniors is physical recreation which is connected with relax while performing stimulating, adaptive, compensating, informational or hedonist functions. Many cities in Poland are engaged in the initiatives aimed at older women and implement extended local programs of activation for older adults. The study presents the forms of support for activity in the urban environment of Częstochowa, with particular focus on recreational activity of women aged 50+.*

Keywords: *activity, recreation, health, women 50+, city.*

Introduction

Recent years have seen an increase in older adults aged 50+, representing an increasing percentage of the Polish society. The most important causes of the increase in the number of people at this age include longer life expectancy and a decline in birth rate. The prognoses of the Central Statistical Office of Poland show that the number of women in Poland aged 50+ increases to 26.5 % (now 16.3 %), with the dynamics of the increase being the highest in Europe. Both current situation and prognoses suggest that the process of ageing in Poland is substantially feminized. Feminization of the population of older adults, expressed by the higher number of women has become substantial, with this index being 38 % in 2015 and expected to increase to 40 % by 2045. Another characteristic feature is territorial variation of the older population, with the highest percentage (22 %) of older adults living in Łódź and Silesian

Voivodeships and the lowest (19 %) in Warmian-Masurian Voivodeship and Subcarpathian Voivodeship. The demographically oldest city is Łódź (ca. 26 %), whereas the youngest is Rzeszów (19 %). As results from prognoses, the biggest percentage of people aged 65+ will be observed in the eastern macroregions (ca. 24 %) and southern-western parts of Poland, whereas the highest percentage of those 80+ will live in southern-western and central parts of the country (ca. 7.5 %). Another tendencies is singularization of the old age, i.e. a high percentage of older adults living in single-person households. By 2030, almost 53 % of one-person households will be composed of people 65+, including 17 % of seniors over 80 years of age (Błądowski & Szatur-Jaworska, 2012).

According to the Eurostat survey, 26 % of Polish women were involved in sports or other physical activities for at least 150 minutes a week. The highest percentage of physically active women was observed in Denmark (57 %), whereas the fewest were found in Romania (4 %). The most frequent form of physical recreation of women in the countries of the European Union is walking and tourism (28 %). It should be also emphasized that greater activity is observed for the population of the Northern Europe compared to its southern part (Życie kobiet i mężczyzn, 2017).

Other popular forms of activity of women in the European Union include participation in cultural and social events (28 %), seeing historical monuments and travelling (27 %), and attending sports events (13 %). (Biernat & Piątkowska, 2012).

The report “Polish women 50 plus” (Raport Polki 50 plus, 2015; rynekseniora.pl, 2017), which included epidemiological analyses and experts' opinions, demonstrated that social, professional, family and health situation of women aged 50+ is much varied. Systematic and political transitions have also led to cultural transformations. More and more women decide to have children in their forties, work, learn new technologies, start their own businesses and use EU funds.

Professional activity is motivating, with women 50+ participating in the workshops of personal development and coaching, learning good time management, assertiveness and positive thinking. Polish women aged 50+ are aware that caring for their body and health is a must in contemporary world while fitness and good body shape is a precondition for being successful.

The focus of the present study is on the social context of ageing of women aged 50+, which are in the period of “mature adulthood”, in the pre-retirement period. The topic of the analyses is activity of women living in the environment of big cities, with particular focus on recreational activity.

Social context of ageing of women 50+

Situation of women aged 50+ is much varied and depends on many factors. Part of them work professionally, some of them look for jobs, others are busy with raising grandchildren and support children in their households.

The period of living of women in the fifth decade of life is a beginning of professional deactivation and the increasing health problems. In the biological aspect, the characteristic feature is menopause, physical and psychical problems related to menopause, and the intensifying metabolic and hormonal changes. This period is marked by the decreasing psychophysical capacity and body adaptation capability. Cardiovascular diseases, bone and articular diseases, diabetes, cancers, obesity and hypertension are more frequently diagnosed or intensify at this age. Obesity in women is becoming not only the aesthetic and psychological problem but it also affects health. In subjective terms, 50 % of women assess their health as good and 20 % - as bad. Among the factors that impact on successful ageing are economic independence, support of the closest family and friends, active lifestyles, cognitive curiosity and interests, and, first and foremost, good health status, fitness and being independent of others (Diagnoza obecnej sytuacji kobiet i mężczyzn 50+, 2013).

There are 74.7 % professional active women aged 45 to 54 years and 28.2 % of those aged 55 to 64 years (Raport Polki 50 plus, 2015). It is estimated that the ratio of people at the age of professional activity compared to the number of retired people in the EU will have reached 2:1 by 2050. In the ongoing discussion about the retirement age in Poland, women's opinions vary. Better educated women, for whom the work is not only the source of income, are for the extension of the retirement age.

Women who perform physical, boring and poorly paid jobs indicate the difficulties in balancing the professional and family life. The employers emphasize the professional assets of women 50+, such as positive attitudes to professional work, reliability, responsibility, independence, emotional stability and that they are calm, can work better in teams and have good professional experience.

Half of working women are planning to retire, whereas 30 % want to continue working (Kobiety i mężczyźni na rynku pracy, GUS, 2017). For these middle-aged women, work is one of the basic stimuli of activity in life, improved motivation to care for psychical and physical fitness. It is often the major source of making a living as the pensions and other benefits are insufficient. Therefore, 30 % of women who obtain benefits, pensions, retirement pensions or other pre-retirement benefits are involved in additional work, working in the so-called grey economy sector. The return of the people aged 50+ is now more and more often emphasized. The Lisbon strategy

developed by the EU assumes e.g. the increase in the employment rate in the group of people aged between 50 and 64 years of age to the level of 50 %, with ca. 27 % in Poland. A substantial unemployment rates were observed in the early nineties of the 20th century in Poland and one of the methods to reduce it was professional deactivation of people aged more than 50 years. People aged 50 to 64 were made redundant within staff reduction programs and forced to start early retirement and obtained pre-retirement benefits. This policy led to a substantial decline in professional activity of people 50+ (Mol, 2008). Currently the employers and politicians do not doubt that the group of people aged 50+ has a substantial and significant potential in the labour market that should be utilized, consequently leading to socio-economic and individual benefits. Incomes of working senior citizens are on average by 1,000 PLN higher than those of people living only from the pension. Family situation of women 50+ is also varied. Over half of them are supported by social benefits (retirement pensions) and their incomes are lower than those earned by men. Every third pensioner and every eight retired person claims that their money lasts them only for bills and food. Women 50+ are burdened by caring of the dependent people (parents, children). This concerns a fourth of women, who spent over 6 hours a day to care for them (Diagnoza obecnej sytuacji kobiet i mężczyzn 50+, 2013). Most of women in the age range of 50 to 59 years are married, with only 1 in 10 living alone. At the age of 60 to 69 years, there are twice more single women. Both widowhood and children leaving the family houses require adaptation to life, replacing family roles and structure of duties: social interactions change and the feeling of loneliness appears (Ostrowska, 2015). The position of women 50+ in Polish families depends on ties and coherence of the family, systems of value and economic and cultural conditions. Nowadays, there are still contradictory views concerning traditional understanding of the role of old people in the family with modern role models derived from the countries of the Western Europe, where anatomy of the members of the family is strongly accentuated and seniors, as a social group, are more and more dependent on the family. The number of older adults living with their children in Poland has significantly reduced.

Recreational activity of women aged 50+ and its conditioning

The importance of activity of older adults has been known and documented scientifically. Doctors, psychologists and employees of social support emphasize the beneficial effect of physical and recreational activity on the process of successful ageing.

Physical activity means planned, conscious and regular human activity, oriented at improving health and requiring physical and psychical effort. Sport

and physical recreation are often termed “sport for everyone” and used as a means of body recovery, improving vitality and is often treated as an entertainment and performed collectively or individually (Dąbrowski, 2006). Due to the level of difficulty, the forms of physical activity can be divided into easy (cycling), medium (swimming, ball games) and difficult (skiing), whereas in terms of the seasons of the year, there are summer (bathing, diving), winter (skating, skiing) and whole-year (outdoor, indoor and field sports) activities. Functions of the sport and recreation have changed over the years. Nowadays, the health, prevention, education, integration, social and economic functions are most often emphasized. The governmental programme for activation of older adults for the years 2014-2020 (Rządowy Program na rzecz Aktywności Społecznej Osób Starszych, 2014) assumes the improvement in the conditions which allow for active participation of older adults in various forms of activity and impact on the health status and the improvement in the quality of life of women at the pre-retirement age. Local environments also implement activities for seniors and people at the 'forefield of old age' (Program działań na rzecz seniorów, 2014). Promotion of active lifestyles of women is more and more often supported by non-governmental organizations, e.g. European 50+ Physical Activity Promotion Association (EPARA 50+), which associates experts on physical activity for people aged 50+. Since 2009, the organization collaborates with the Ministry of Sport and Tourism, with its main aim being promotion of physical activity through implementation of recreational programs and sports events with local and national range. Women participate in physical and recreational classes for three months (Nordic walking, pilates, round dance, aqua fitness), according to the motto “I chose myself” (www.espar-50.pl, 2017). The demographic data of the Central Statistical Office of Poland show that women in Częstochowa account for 53 % of the inhabitants of the city and the feminization rate is 113 (there are 113 women per 100 men). Mean age of women is 45.9 years, whereas there are 66.1 % of the city population are women aged 15 to 64 and 22.2 % of those aged 65+. Furthermore, there are 54.7 % of women at the working age and 31.3 % at the post-working age (59+). 24.1 % of women have tertiary education, 40.5 % - secondary and post-secondary education, 14.5 % - vocational education and 6.4 % - primary education (www.polskawliczbach.pl, 2015). The opportunities for recreational classes in Częstochowa for women at the pre-retirement and retirement age vary. Physical activity classes are organized by local governments, district clubs, the Centre for Senior Activity, the City's Sports and Leisure Centre, senior clubs, the University of the Third Age, the Polish Tourist and Sightseeing Society, and non-governmental organizations e.g. the Athletic Częstochowa Association. There are more and more recreational fields dedicated to inhabitants at different age. They are located in each district and in many settlements and enjoy much

popularity. The campaign “Pogodna jesień - starzej się zdrowiej” (“Happy autumn: age healthier”) offers free sports and recreation classes for seniors. This means gymnastics (3 times a week), zumba and aerobics (3 times a week), dancing clinics (2 times a week). The particular form which is strongly recommended for older women is Nordic walking. This special walking technique improves strength and endurance of arms, relieves load from joints and helps maintain healthy body posture, balance and stability. The equally beneficial forms of activity are water gymnastics, swimming, aqua aerobics, aqua zumba. Zumba gold classes are also organized in the Częstochowa Sports Hall, with great popularity among middle-aged women. A survey was conducted to obtain the answer about the forms of physical and recreational activities which are the most popular in women aged 50+ living in Częstochowa. The survey was responded by 192 women (97 working and 95 professionally inactive).

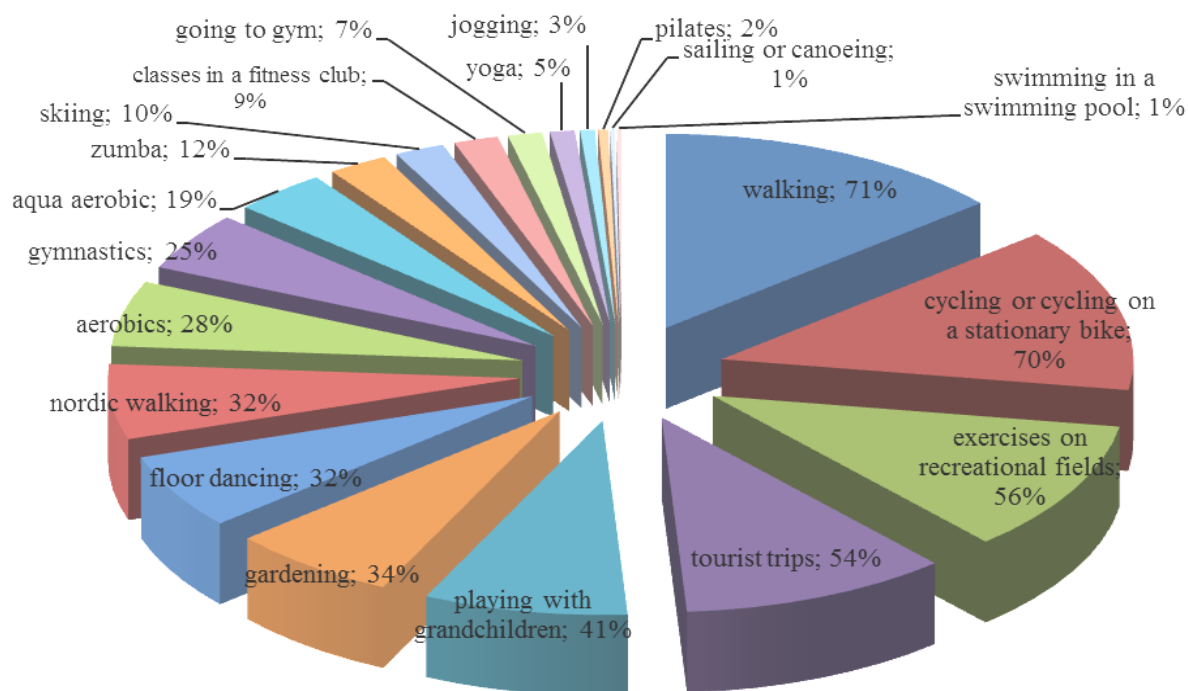


Figure 1. **Forms of recreational activity of professionally active women aged 50+ (multiple choice)**

The forms of activity of working women are multiple. The most frequent include walking (71 %), cycling on a bike or a stationary bike (70 %), exercises on district recreation fields (56 %) and tourist trips (54 %). Gardening is preferred by 34 % of women whereas playing with grandchildren - by 41 %. Few women swim (1 %), jog (3 %) and participate in fitness classes (9 %).

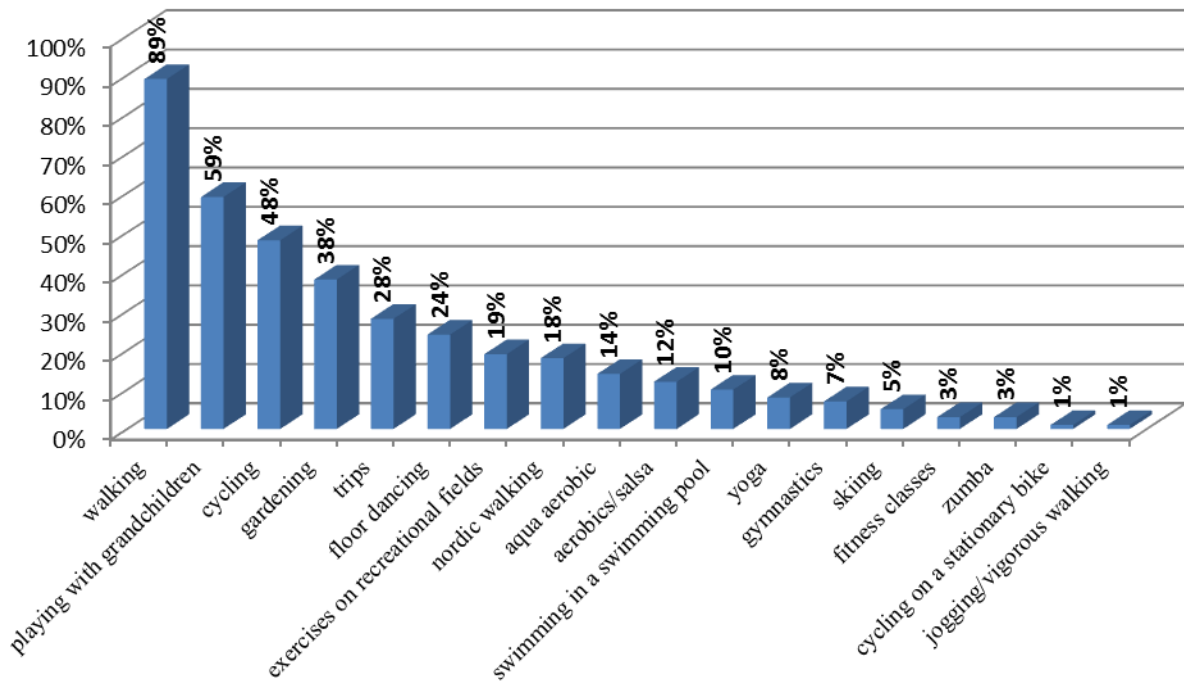


Figure 2. **Forms of recreational activity of professionally inactive women aged 50+ (multiple choice)**

The most frequent forms of activity of professionally inactive women include walking (89 %), playing with grandchildren (59 %) and gardening (38 %). Furthermore, the respondents mentioned trips (28 %), floor dancing (24 %) and exercises in recreational fields (in districts, 19 %). The fewest women do jogging or vigorous walking and cycling on a stationary bike.

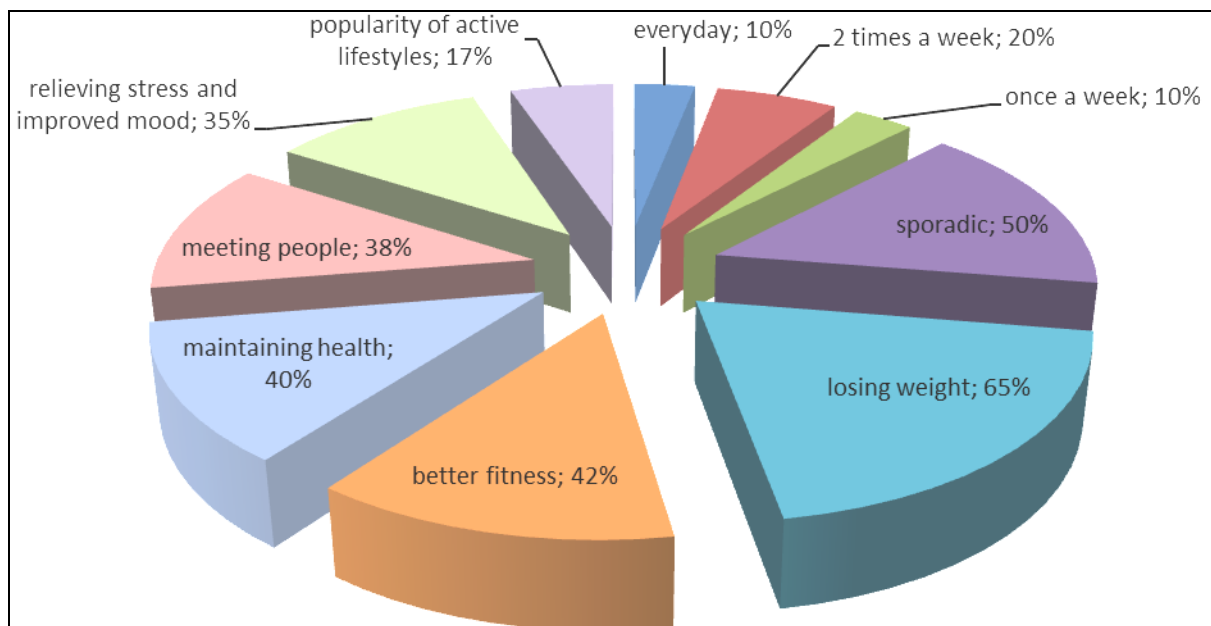


Figure 3. **Frequency and motivations for taking physical activity by women 50+**

Half of the women is involved in sporadic physical activity, 20 % of them do this twice a week and 10 % everyday. Among the motivations for taking up recreational activity, the women reported losing weight (65 %), increasing fitness (42 %) and maintaining health (40 %), opportunity to meet people (38 %) and relieving stress and improving mood (35 %). The conclusions which can be drawn from the analysis of the study results are: Professional work is conducive and motivating for taking up recreational activity. Professionally active women are more physically active and participate in varied forms of activity and are more aware of what the local community offers. Losing weight and improvement in fitness are the main motivations for taking up activating actions in both groups of women 50+. Professionally inactive women spent more time for home and family activities (playing with grandchildren, gardening). However, recreational activity in both groups is sporadic, with only 10 % of women admitting that they take up physical activity on a regular basis.

Conclusions

As voluntary activity, physical recreation results from human needs, offering satisfaction, relax and relieving negative emotions. Decisions on taking up participation in physical activities are varied and result from the type of motivation. A health-hygiene type and social type of motivation is dominant in women 50+, whereas the choice of activity results from maintaining or improving health status, fitness, body shape and beauty and the need for meeting other people. Modern societies reject stereotypes concerning the old age and more and more women understand that physical activity leads to improved health and mood. There are many opportunities offered for older adults aged 65+ in Częstochowa, but few of them are dedicated to women at the pre-retirement age. Obviously, women 50+ can joint older people but many of them do not feel seniors yet and choose individual forms of recreation.

References

- Biernat, E., & Piątkowska, M. (2012). *Rekreacyjna aktywność fizyczna Polaków na tle Europy*. Warszawa: Raport dla Departamentu Analiz i Polityki Społecznej. Ministerstwo Sportu i Turystyki. Retrieved from <http://www.msit.gov.pl/download>
- Błędowski, P., Szatur-Jaworska, B. i inni (2012). *Raport na temat sytuacji osób starszych w Polsce*. Warszawa: Instytut Pracy i Spraw Socjalnych.
- Brzezińska, M. (2011). *Proaktywna starość* oraz Wądołowska, K. (2011). *Polacy wobec ludzi starszych i własnej starości*. Warszawa: raport CBOS. Retrieved from www.cbos.pl
- Dąbrowski, A. (2006). *Zarys teorii rekreacji ruchowej*. Warszawa: DrukTur Sp. z o.o.
- Europejskie Stowarzyszenie Aktywności Ruchowej 50+ (ESPAR 50+)* Retrieved from www.espar-50.org/esppar-50/o-nas_3.html

- Kobiety i mężczyźni na rynku pracy. (2016). Warszawa: GUS, stat.gov.pl/files/gfx/portal_informacyjny/pl (15.08.2017) oraz Wyrównywanie szans na rynku pracy dla osób 50+, Retrieved from 50plus.gov.pl/kobiety-na-ryнку-pracy-60
- Kryńska, E., Krzyszkowski, J. i inni. (2013). *Diagnoza obecnej sytuacji kobiet i mężczyzn 50+ na rynku pracy w Polsce*. Łódź: Raport Końcowy.
- Marc McGovern (2014). Bryn Mawr College, *The Effects of Exercise on the Brain (Od biegania przez rozum do serca)*. „Gazeta Wyborcza” 14 lutego 2014.
- Mol, D. (2008). Osoby 50+ na rynku pracy. Warszawa: *Biuletyn Nr 7 maj 2008*.
- Ostrowska, A. (2015). *Raport Polki 50 plus. Zdrowie i zagrożenia*. Warszawa: PAN i rynekseniora.pl/i/00/15/33/001533.pdf
- Polska - Podstawowe Informacje* Retrieved from www.polskawliczbach.pl/Częstochowa GUS 2015
- Program działań na rzecz seniorów na lata 2014–2020 „Częstochowa seniorom”, Załącznik do Uchwały Nr 965/LIII/2014 Rady Miasta Częstochowy z dn. 26 czerwca 2014 r.
- Rządowy Program na rzecz Aktywności Społecznej Osób Starszych na lata 2014–2020. Monitor Polski, Warszawa 4 luty 2014 poz. 118
- Życie kobiet i mężczyzn w Europie – Portret statystyczny*. Eurostat – urząd statystyczny Unii Europejskiej we współpracy z GUS i Eurostat Union 2017.
<https://stat.gov.pl/obszary-tematyczne/inne-opracowania/inne-opracowania-zbiorcze/zycie-kobiet-i-mezczyzn-w-europie-portret-statystyczny,27,1.html>

STRESS COPING AS A PSYCHOLOGICAL FACTOR FOR CHRONIFICATION OF LOW BACK PAIN

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Abstract. *Stress is a part of our everyday life and it plays an important role in causing various diseases including low back pain and vice versa chronic pain is a stressor that is challenging stress system of the human body. Purpose of the study is to examine stress coping among patients with low back pain in rehabilitation practice in Latvia. Demographic questionnaire, Visual analogue scale and “The Ways of Coping scale” were used. Results. Almost all stress coping strategies scores for patients with low back pain in their first visit are higher than in patients with revisit to Physical Medicine and Rehabilitation doctor and there is statistically significant difference in the use of problem oriented stress coping. Conclusion. This research is meaningful due to the fact it allows to acknowledge and evaluate the spectrum of stress coping ways for patients with low back pain.*

Keywords: *Stress coping, Low back pain, Rehabilitation.*

Introduction

Low back pain (LBP) is a major public health problem worldwide. Most people experience LBP at some point in their lifetime, with two-thirds having a recurrence and one third having periods of disability. LBP is among the leading causes of activity limitation and absence from work (Rozenberg, 2012) and it causes an enormous economic burden on individuals, families, communities, industry and governments (Steenstra et al., 2005; Kent & Keating, 2005; Thelin, Holmberg, & Thelin, 2008).

Based on a 2012 systematic review data prevalence of LBP was higher in women (35.3 % versus 29.4 % in men) and was highest in the groups aged 40 to 49 and 60 to 69 years (Rozenberg, 2012).

Recommendations of LBP management includes an evaluation of flags - risk factors for chronicity. Red flags are signs and symptoms that suggest a specific underlying disease for example tumour, infection, or inflammatory disease. Orange flags identify psychopathological issues that require specific treatment, such as posttraumatic stress disorder, personality disorders, and depression. Patients with orange flags should be referred to specialists and evaluated routinely, particularly in patients on sick leave for longer than 4 weeks (Rozenberg, 2012). There are three categories of psychosocial flags: person's beliefs, feelings and behaviour, associated with workplace and contextual factors. Most of these flags detect risk factors that are potentially amenable to modification: yellow flags identify psychological risk factors such as inappropriate fears or beliefs. Yellow flags have been proven to correlate with both the development of LBP and progression to chronicity (Nicholas, 2011). Researchers suggest that psychological events could be considered as risk factors for the development of chronic pain (Flor & Turk, 2013).

Among studies evaluating the effects of interventions targeting yellow flags, six showed improved outcomes in terms of function and return to work, whereas six others obtained no evidence of efficacy (Nicholas, 2011).

Blue flags assess perceived features of the work environments such as stress, lack of support, and excessive demand (Shaw, 2011) whereas black flags assess objective factors associated with the workplace and other components of the environment (e.g., insurance, family).

Stress is a part of our everyday life and it plays an important role in causing various diseases, including low back pain and vice versa chronic pain is a stressor that is challenging the stress system of the human body. Prolonged activation of the stress regulation system generates breakdowns of muscle, bone, and neural tissue that in turn cause major pain and produce a vicious circle of pain-stress-reactivity (Gatchel, 2004).

According to the theory of Lazarus and Folkman stress coping is constantly changing cognitive and behavioural effort to manage specific external and/or internal demands (Folkman & Lazarus, 1985).

The problems that are related with pain such as depression, anxiety, fear, disability, low self-esteem etc. may be appraised as exceeding person's resources and coping for patients with pain, means coping additionally with previously mentioned multiple stressors (Lazarus & Folkman, 1984; Boothby et al., 1999; Dysvik et al., 2005).

People differ depending on their capacity to cope with stress so it is crucial to investigate the role of the stress and stress coping in connection with low back pain.

Passive coping is a strong and independent predictor of disabling neck and/or back pain. This strong relationship identifies passive coping as a risk marker for disability and can permit the identification of individuals at risk and in need of intervention to aid in improving their overall adjustment (Mercado et al., 2005). Cognitions, such as beliefs, attitudes to work, coping mechanisms, and psychological distress are associated with LBP disability and treatment outcome.

Purpose of study: To examine stress coping among patients with low back pain in rehabilitation practice in Latvia.

Methods

Three research tools were used: a demographic questionnaire developed by the study authors, Visual analogue scale and “The Ways of Coping scale” (Folkman & Lazarus, 1985). Demographic questionnaire consisted of nine questions about patients’ age, gender, education, family status, occupation, smoking, localization of back pain and pain duration.

The score of visual analogue scale was determined by measuring the distance (mm) on the 10-cm line between “no pain” and “severe pain”, providing a range of scores from 0–100 mm (Jensen Karoly & Braver, 1986) Interpretation of the pain scores was made by the recommendation to follow the cut points on the VAS: no pain (0–4 mm), mild pain (5–44 mm), moderate pain (45–74 mm), and severe pain (75– 100 mm) (Jensen, Chen &, Brugger, 2003).

“The Ways of Coping scale” consisted of 66 items which were divided into 8 subscales. Confrontive Coping, Seeking Social Support and Planful Problem Solving corresponded to Problem-oriented stress coping, whereas Distancing, Self-Controlling, Accepting Responsibility, Escapes-Avoidance and Positive Reappraisal refers to Emotional-oriented stress coping. Cronbach’s alfa for The Ways of Coping Questionnaire was 0.93 which means that the survey is consistent.

IBM SPSS version 20 was used for statistical analysis. Normality distribution was determined with *Kolmogorov–Smirnov* and *Shapiro–Wilk* tests. Homogeneity between groups were determined with *Leven’s test*. *Independent sample T test* and *one-way ANOVA* was used to measure mean differences between groups. For analysing correlations *Pearson*, *Spearman* and *Kendell correlations* were used.

Results

Participants (n=74) were aged from 25 to 67; M=48.44±13.6 SD; males – 29 (39.2 %), females – 45 (60.8 %). Sociodemographic and medical data of patients with low back pain are described in the Table 1.

Table 1 **Sociodemographic and medical data of patients with low back pain**

	Scale	N (%)
	Widow/single	17 (22.9%)
	Married/ Cohabitant	57 (77.0%)
Education	Primary education	4 (5.4%)
	Secondary education	16 (21.6%)
	Professional secondary education	22 (30%)
	Highest education	32 (43%)
Pain duration	3 month	4 (5.4%)
	6 month	6 (8.1%)
	1-2 years	20 (27.1%)
	3-5 years	10 (13.5%)
	6-10 years	13 (17.5%)
	>10 years	21 (28.4%)
Visual analogue scale	No pain	8 (10.6%)
	Mild pain	48 (65.4%)
	Moderate pain	15 (20.2%)
	Severe pain	3 (4.1%)

Assessment of the data of mean values of the Ways of Coping Questionnaire (Table 2.) and comparing the data of patients with the data of the control group the following results were obtained - patients with back pain had significantly lower rates in almost all parameters. Besides results show that there was statistically significant difference in stress coping strategies between study participants and control group in few of the strategies.

Leading stress coping strategies of patients with low back pain were Planful Problem Solving (M=1.84±0.56), Self-Controlling (M=1.56±0.49) and Accepting Responsibility (M=1.55±0.53). Data shows that patients with low back pain in rehabilitation practice use more Problem-oriented stress coping (M=1.49±0.44).

There were found statistically significant differences in stress coping strategies between participants and control group. Control group used more such stress coping strategies as Confrontive coping, Accepting Responsibility, Escape-Avoidance, Positive Reappraisal and used more on Emotion-oriented stress coping strategies than patients with low back pain. (Table 2.)

Table 2 Mean values of the Ways of Coping Questionnaire of patients with low back pain comparing to control group

Scale	Patients (n=71)		Control group (n=71)		P-value*
	M	SD	M	SD	
Confrontive Coping	1.22	0.45	1.52	0.50	<0.001
Seeking Social Support	1.49	0.54	1.60	0.62	0.250
Planful Problem Solving	1.84	0.56	1.76	0.59	0.427
Distancing	1.35	0.49	1.44	0.56	0.334
Self-Controlling	1.56	0.49	1.70	0.47	0.068
Accepting Responsibility	1.55	0.53	2.02	0.60	<0.001
Escape-Avoidance	1.26	0.47	1.62	0.53	<0.001
Positive Reappraisal	1.44	0.50	1.62	0.57	0.046
Problem-oriented Coping	1.49	0.44	1.63	0.44	0.073
Emotion-oriented Coping	1.43	0.39	1.68	0.42	<0.001

Statistically significant (<0.05)

*P-value was acquired using independent sampling T-test

In the analysis of the Ways of coping data of patient with low back pain, depending on count of visits to Physical Medicine and Rehabilitation doctor (Table 3.) – there were higher scores in problem-oriented stress coping of patients in a first visit than patients with revisits, moreover these differences are statistically significant. The same scores were found for emotion-oriented stress coping for both groups. It was possible to see that some stress coping strategies of patients in a first visit to Physical Medicine and Rehabilitation doctor such as Confrontive Coping, Planful Problem Solving, Self-Controlling, Escape-Avoidance, Accepting Responsibility were higher than for patients in revisits.

Patients with low back pain in their first visit used more on problem-oriented stress coping strategies than patients in revisits (p=0.043)

Comparing the stress coping data of patients with low back pain with different pain severity (Table 4.) we can see that increasing intensity of pain increases also Emotion-oriented stress coping, Problem-oriented stress coping, Self-Controlling, Distancing as well as Confrontive Coping.

Analysis of Visual analogue scale results showed statistically significant correlation with Confrontive coping (r=0.355, p=0.003), Self-Controlling (r=0.294, p=0.053), Accepting Responsibility (r=0.431, p<0.001), Escape-Avoidance (r=0.353, p=0.001), Planful Problem Solving (r=0.259, p=0.052), Emotion-oriented problem coping (r=0.298, p=0.010).

Table 3 Mean values of the Ways of Coping Questionnaire comparing the visit number

Scale	patients first visit (n=35)		revisits (n=35)		P-value*
	M	SD	M	SD	
Confrontive Coping	1.28	0.45	1.15	0.45	0.220
Seeking Social Support	1.60	0.50	1.37	0.56	0.078
Planful Problem Solving	1.90	0.61	1.74	0.49	0.227
Distancing	1.33	0.47	1.34	0.50	0.967
Self-Controlling	1.59	0.40	1.53	0.56	0.629
Accepting Responsibility	1.61	0.53	1.48	0.52	0.313
Escape-Avoidance	1.28	0.47	1.22	0.47	0.615
Positive Reappraisal	1.44	0.50	1.37	0.55	0.629
Problem-oriented Stress Coping	1.60	0.38	1.38	0.48	0.043
Emotion-oriented Stress Coping	1.46	0.31	1.39	0.45	0.466

Statistically significant (<0.05)

*P-value was acquired using independent sampling T-test

Table 4 Mean values of the Ways of Coping Questionnaire comparing the pain severity by Visual Analogue scale

Scale	No pain (n=8) M±SD	Mild pain (n=48) M±SD	Moderate and severe pain (n=18) M±SD	P-value*
Confrontive Coping	1.04 ± 0.57	1.12 ± 0.40	1.56 ± 0.35	<0.001
Seeking Social Support	1.55 ± 0.47	1.46 ± 0.55	1.73 ± 0.36	0.356
Planful Problem Solving	1.95 ± 0.71	1.74 ± 0.47	2.18 ± 0.42	0.052
Distancing	1.20 ± 0.77	1.34 ± 0.45	1.46 ± 0.45	0.474
Self-Controlling	1.23 ± 0.58	1.54 ± 0.48	1.79 ± 0.37	0.021
Accepting Responsibility	1.12 ± 0.58	1.49 ± 0.46	1.93 ± 0.46	<0.001
Escape-Avoidance	0.98 ± 0.49	1.17 ± 0.46	1.62 ± 0.25	<0.001
Positive Reappraisal	1.42 ± 0.75	1.35 ± 0.51	1.61 ± 0.43	0.244
Problem-oriented stress coping	1.37 ± 0.65	1.44 ± 0.35	1.68 ± 0.51	0.092
Emotion-oriented stress coping	1.19 ± 0.59	1.38 ± 0.34	1.68 ± 0.27	0.004

*P-values were acquired using one-way ANOVA LSD test differences between groups

Visual analogue scale results showed statistically significant correlation (Table 5.) with Confrontive coping (r=0.355, p=0.003), Self-Controlling (r=0.294, p=0.053), Accepting Responsibility (r=0.431, p<0.001), Escape-Avoidance (r=0.353, p=0.001), Planful Problem Solving (r=0.259, p=0.052), emotion oriented problem coping (r=0.298, p=0.010).

Table 5 Spearman correlation coefficients between Visual Analogue Scale and Way of Coping scale in study participants

Ways of coping scale	Confrontive coping	Distancing	Self-Controlling	Seeking Social Support	Accepting Responsibility	Escape-Avoidance	Planful Problem Solving	Positive Reappraisal
VAS	0.355**	0.117	0.294*	0.048	0.431**	0.353**	0.259*	-0.055
<i>P-value *<0.05 and **<0.01</i>								

Discussion

This study applied Lazarus and Folkman stress coping model (Lazarus & Folkman, 1984) to the spectrum of patients with low back pain in rehabilitation practice.

Our study patients with chronic low back pain had lower emotional state and in comparison with control group lower stress coping rates in almost all coping strategies, therefore it is difficult to achieve therapeutic progress and this could be due to the long duration of pain, especially for severe pain, probably causing hopelessness and helplessness.

It should be noted that almost all stress coping strategies scores for patients with low back pain in their first visit are higher than in patients with revisit to Physical and Rehabilitation Medicine doctor and there is statistically significant difference in the use of problem-oriented stress coping. Furthermore, the problem oriented coping score of first visit low back pain patients is almost equivalent to the control group.

Reviews concerning chronic pain have shown that active coping (problem-focused coping) tended to be associated with better physical and psychological functioning so it is possible that patients with low back pain who have appropriate level of problem oriented coping do not need as much revisits but patients who require more revisits tend to be in a state of passive resignation and seek further professional help (Persson & Lilja, 2001).

Problem-focused coping style contributed significantly to higher acceptance of living with low back pain. Using this coping style can be therefore regarded as a marker of good adjustment to low back pain, especially in terms of a balanced attitude toward the disease (acceptance but not giving-up). It is worth noting that

acceptance of life with low back pain was significantly predicted also by a cognitive appraisal of challenge (Janowski, Steuden, & Kuryłowicz, 2010).

In the same way illness perceptions for low back pain patients, especially the consequences of the illness, and coping have a relevant part in the explanation of distress. However, more researches are necessary about the role of coping in relation to long term illness perceptions (Dempster, Howell, & McCorry, 2015).

There are some relevant aspects of psychosocial functioning in patients with back pain. One of them is conscientiousness, which has also been implicated as a personality resource which may prove positive when coping with stress, including disease-related stress. People with higher levels of conscientiousness were shown to prefer thoughtful, task-oriented strategies of coping with stress, showed more endurance when coping with stress and reported greater personal growth following resolution of stressful situations. They also coped with stress usually more effectively than those low in conscientiousness (Costa, Somerfield, & McCrae, 1996; Hewitt & Flett, 1996)

Results of studies about chronic illness patients with higher conscientiousness showed better adaptation to the disease through higher compliance with medical recommendations and through practicing pro-health behaviours (Wiebe & Christensen, 1996).

The main goal of rehabilitation should be to change patient assessment of threat realistically, evaluation of challenge for active participation and problem solving. There is a need of such assessment training with focus of differentiation between specific stressful and changeable situations and global and unchangeable aspects (Folkman et al., 1991). Several authors propose that the treatment for patients with low back pain should be included in a multidisciplinary rehabilitation programme with cognitive behavioural therapy group, working with advance of coping with residual pain and limitations and to change negative attitudes towards work, social situations and disability.

The present study has some limitations. One of the limitation is relatively small sample, second the analysis relied on self-report measures, but our findings are helpful in drawing attention of medical field to the need of assessing psychological factors in patients with low back pain.

Conclusion

This research is meaningful due to the fact it allows to acknowledge and evaluate the spectrum of stress coping ways for patients with low back pain. As chronic pain is described as multidimensional, there is a necessity to pay attention not only to medical treatment of low back pain but also to psychological factors influencing low back pain disorder as well as coping.

It is significant to continue the work with this survey and evaluate the therapeutic results in long-term.

References

- Boothby, J. L., Thorn, B. E., Stroud, M. W., & Jensen, M. P. (1999). Coping with pain. In: R.J Gatchel. & D. C.Turk (Eds), Psychosocial Factors in Pain.Critical Perspectives. *The Guilford Press, New York*, 279-284.
- Costa, P. T., Somerfield, M. R., & McCrae, R. M. (1996). Personality and coping: a reconceptualization. In M. & Zeidner, *Handbook of coping: theory, research, applications* (pp. 44–61). New York: Wiley.
- Dempster, M., Howell, D., & McCorry, N. K. (2015). Illness perceptions and coping in physical health conditions: A meta-analysis. *Journal of Psychosomatic Research* 79, 506–513.
- Dysvik, E., Natvig, G. E., Eikeland, O. J., & Lindstrom, T. C. (2005). Coping with chronic pain. *Int. J.of Nursing Studies*, 42, 297-305.
- Flor, H., & Turk, D. C. (2013). Chronic Pain: An Itegrated Biobehavioural Approach USA. *Cognitive and behavioral Practice* 20,, 117-118.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48 (1), 150-170.
- Folkman, S., Chesney, M., McKusick, L., Ironson, G., Johnson, D. S., & Coates, T. J. (1991). Translating coping theory into an intervention. In: Eckenrode J. (Ed), *The social context of Coping. Plenum Press, New York*, 239-260.
- Gatchel, R. (2004). Comorbidity of chronic pain and methal health: The biopsychosocial perspective. *American Psychologist*, 59, 792-794.
- Giardino, N. D., Jensen, M. P., Turner, J. A., Ehde, D. M., & Cardenas, D. D. (2003). Social environment moderates the association between catastrophizing and pain among persons with a spinal cord injury. *Journal of Pain*, 106, 19–25.
- Hewitt, P. L., & Flett, G. L. (1996). Personality traits and the coping process. In M. E. Zeidner, *Handbook of coping: theory, research, applications* (pp. 410–433). New York: Wiley.
- Janowski, K., Steuden, S., & Kuryłowicz, J. (2010). Factors accounting for psychosocial functioning in patients with low back pain. *Eurpean spine journal*, 19, 613-623.
- Jensen, M. P., Chen, C., & Brugger, A. M. (2003). Interpretation of visual analog scale ratings and change scores: a reanalysis of two clinical trials of postoperative pain. *Journal of Pain*, 4, 407–414.
- Jensen, M. P., Karoly, P., & Braver, S. (1986). The measurement of clinical pain intensity: a comparison of six methods. *Journal of Pain* 27, 117–126.
- Keefe, F. J., Lipkus, I., Lefebvre, J. C., Hurwitz, H., Clipp, E., Smith, J., & Porter, L. (2003). The social context of gastrointestinal cancer pain: A preliminary study examining the relation of patient pain catastrophizing to patient perceptions of social support and caregiver stress and negative responses. . *Journal of Pain*, 103, 151-156.
- Kent, P. M., & Keating, J. L. (2005). The epidemiology of low back pain in primary care. *Chiropr Osteopat*, 13, 13.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer Publishing Company.
- Lidgren, L. (2003). The bone and joint decade 2000–2010. *Bull World Health Organ*, 81, 629.

- McWilliams, L. A., Cox, B. J., & Enns, M. W. (2003). Use of the coping inventory for stressful situations in a clinically depressed sample: factor structure, personality correlates, and prediction of distress. *Journal of Clinical Psychology, 59*, 423–437.
- Mercado, A., C., Caroll, L. J., Cassidy, J. D., & Côté, P. (2005). Passive coping is a risk factor for disabling neck or low back pain Pain. *Journal of Pain, 177*, 51-57.
- Nicholas MK, L. S. (2011). Early identification and management of psychological risk factors (“Yellow Flags”) in patients with low back pain: a reappraisal. *Phys Ther 91*, 737–53.
- Persson. L. C. G., & Lilja, A. (2001). Pain, coping, emotional state and physical function in patients with chronic radicular neck pain. A comparison between patients treated with surgery, physiotherapy or neck collar-a blinded, prospective randomized study. *Disability and Rehabilitation, 23*, 325-335.
- Rozenberg, S. F. V. (2012). Treatment strategy for chronic low back pain. *Joint Bone Spine, 79*, 555-559.
- Shaw WS, M. C. (2011). Addressing occupational factors in the management of low back pain: implications for physical therapist practice. *Phys Ther, 91*, 777–89 .
- Steenstra, I. A., Verbeek, J. H., Heymans, M. W., & Bongers, P. M. (2005). Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: a systematic review of the literature. *Occup Environ Med, 62*, 851–860.
- Sullivan, M. J., Thorn, B., Haythornthwaite, J. A., Keefe, F., Martin, M., Bradley, L. A., & Lefebvre, J. C. (2001). Theoretical perspectives on the relation between catastrophizing and pain. *Clinical Journal of Pain, 17*, 52–64.
- Thelin, A., Holmberg, S., & Thelin, N. (2008). Functioning in neck and low back pain from a 12-year perspective: a prospective population-based study. *J Rehabil Med, 40*, 555–561.
- Wiebe, J. S., & Christensen, A. J. (1996). Patient adherence in chronic illness: personality and coping in context. *J Pers., 64*, 815–835.

SHIFT WORK IMPACT TO SYMPTOMS OF ANXIETY, DEPRESSION AND SLEEP QUALITY AMONG NURSES

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Abstract. Shift work is prevalent in service industries such as hospitals that provide 24-hour coverage. There is no common accepted definition of shift work, but usually shift work is defined as work hours that are scheduled outside daylight (6 am–6 pm) hours. Purpose of study is to compare quality of sleep, anxiety and depression among nurses working daily and shifts in Latvia. In this study 4 research tools were used: a demographic questionnaire, Beck depression survey (BDI), The State-Trait Anxiety Inventory (STAI) and Pittsburgh sleep quality index (PSQI). Research results showed that nurses in shifts have higher mean value scores than day time working nurses in all indicators – depression, anxiety and sleep quality. This research is meaningful due to the fact that it allows to acknowledge and evaluate the role of shift work on nurses health particularly on mood disorders and sleep quality.

Keywords: shift work, nurses, depression, anxiety, sleep quality.

Introduction

Shift work is prevalent in service industries such as hospitals that provide 24-hour coverage. There is no common accepted definition of shift work, but usually shift work is defined as work hours that are scheduled outside daylight (6 am–6 pm) hours (Hughes & Stone, 2004). Shift work start times and lengths vary and may include working part or all of the evening (2 pm–12 am) or night (9 pm–8 am) (Alward et al., 1993). Shift-work assignments are classified as permanent or rotating.

Nowadays, many people are employed in shift and night work and this trend continues to grow. In fact, only about 25 % of workers in Europe have a regular day job. Also, nursing work is closely related to shift work (Parent-Thirion et al., 2007). Shift work is extremely dominant in the field of nursing and therefore there is belief in society that that is normal regimen for nurses.

Many studies have shown how the night shift and work during night hours affects health, for example, deterioration in the quality of work, reduction social activity. Such work schedules have been related to numerous health problems - cardiovascular diseases, digestive disorders, fatigue, cancer, depression/anxiety and sleep problems (Harma & Kecklund, 2010).

There are data that nurses shift work have influence and cause mental health problems and therefore can adversely affect patient safety (Tanaka, Otsubo, & Tanaka, M., 2010; Pei-Chen Lin et al., 2015).

Studies show that shift work could be a source of stress for nurses and researchers have identified that up to a 3 % chance of medical error can result from the stress associated with shift work (Rogers, 2008).

Nurses involved in shift work, who are at risk for decreased health and poor job performance resulting from stress, should be identified and changes should be made to reduce their stress and improve patient safety.

Many studies support the theory that night shift work may increase negative health risks for nurses. Some researchers suppose that the negative effects of long term night shift work may be affected by the circadian disruption, sleep deprivation, and melatonin suppression. This chronic disequilibrium may contribute to the negative health risks that appear to expand with the number of years of working on the night shift (Hughes, 2015).

Studies indicate that in comparison with nurses, who work day shifts, with those, who work rotating shifts or night shifts, were more eventually to have harmful physical and psychological health effects (Brown et al., 2009; Conway et al., 2008).

Purpose of study: To compare sleep quality, anxiety and depression among nurses working daily and shifts in Latvia.

Methods

In this study 4 research tools were used: a demographic questionnaire developed by the study authors, Beck depression survey (BDI) (Beck A. T. et al., 1988). Cronbach's alpha for Beck depression survey 0, 85; The State-Trait Anxiety Inventory (STAI) (Spielberger C. D. et al., 1970) and Pittsburgh sleep quality index (PSQI) (Buysse et al., 1989).

The BDI is a 21-item self-report instrument containing a four point scale for each item ranging from 0 to 3.

The STAI has 40 items, 20 items allocated to each of the Stait-Anxiety and Trait-Anxiety subscales. Responses for the S-Anxiety scale assess intensity of current feelings "at this moment": 1) not at all, 2) somewhat, 3) moderately so, 4) very much so. Responses for the T-Anxiety scale assess frequency of feelings "in general": 1) almost never, 2) sometimes, 3) often, 4) almost always.

PSQI has 19 items measure of sleep disturbance and usual sleep habits, with 0-3 Likert Scale ranging.

Results

The study included 103 nurses, full-time daywork (n 48) and shift work (n 55) employed nurses from Clinical Hospital. Respondents were aged from 23 – 72 years (M=51, 44; SD=8, 71). Sociodemographic data of study participants (n 103) can be assessed in Table 1.

Table 1 Sociodemographic data of study participants (n =103)

Variables	N	%
Age		
18-30	7	6,8
46-55	40	38,8
56≤	22	21,4
Length of service		
0-5 years	9	8,7
6-10 years	6	5,8
11-15 years	15	14,6
15≤ years	73	70,9
Family status		
Married	39	37,9
Single	17	16,5
Cohabitant	14	13,6
Divorced	21	20,4
Widow	12	11,7
Education		
Professional secondary education	47	46,6
First level of higher education	17	16,5
Professional bachelor level	30	29,1
Master	6	5,8

Table 2 Depression, Anxiety and Sleep quality index in study participants

Variable	Mean (SD)
Depression (BDI)	8 (6,81)
State anxiety	35.81 (9,02)
Trait anxiety	38,04 (9,19)
Pittsburgh sleep quality index (PSQI)	4,98 (3,02)

Mean values of Depression, Anxiety and Sleep quality are shown in the Table 2. Depression mean value of study group nurses was 8, it is considered minimal range, as well as mean value State anxiety - 35.81 and mean value Trait

anxiety (38, 04) is seen as normal. It was found that Pittsburgh sleep quality index for this study group of nurses was 4, 98 – it's considered as of crossing point of norm.

Table 3 Depression, Anxiety and Sleep quality index in study participants by age groups

Age group	BDI* M ± SD	STAI** M ± SD	PSQI*** M±SD
18-30 years	6.71±4.23	67.29±13.79	4.86±1.77
31 – 45 years	6.29±5.97	70.31±16.69	3.94±2.56
46-55 years	11.33±7.16	79.63±16.81	5.50±3.23
56 and more years	8.82±6.80	70.86±18.53	5.68±3.28

*Beck depression survey; **The State-Trait Anxiety Inventory; ***Pittsburgh sleep quality index

Depression, Anxiety and Sleep quality by the groups of age are shown in the Table 3. The mean values of the age group 46-55 years of nurses are higher than in other age groups.

The data of comparison of mean values of Depression, Anxiety and Sleep quality index in study participants by the type of work are presented in Table 3. Mean values show the differences depending on type of work, in all positions – Depression, State-Trait anxiety mean values and Pittsburgh sleep quality index are higher in the study participant group of shift work.

Mean values of Depression, Trait Anxiety and Pittsburgh sleep quality index of shift working nurses were higher than norm and these differences comparing the data with daily work study group were statistically significant (Table 4.)

Table 4 Depression, Anxiety and Sleep quality index in study participants by the type of work

	Full-time day work (n 48)		Shift work (n 55)		x ² /F
	M	SD	M	SD	
Beck depression survey	7,40	6,08	10,26	6,58	X ² = 10.11; p = .00**
State anxiety	33.8	8,55	37.51	9.14	X ² = 5,20; p = 0,74
Trait Anxiety	35,75	1,30	43,26	8,72	F=3.6; p=0.02*
Pittsburgh Sleep Quality Index survey	3,91	2,26	6,16	3,86	X ² = 10.19; p = 0.01**

P-value *<0.05 and **<0.01

Discussion

Evaluation of the Beck depression questionnaire scores showed that the mean values of the survey was 8.00 (SD = 6.81). Achieved results in this study show that mean values are lower compared to other data obtained in Latvia in 2013 (Circenis, Millere, & Deklava, 2011)

It was found that there is a statistically significant difference between day and shift workers in BDI results. ($X^2 = 10.11$, $p = 0.00$). The day working nurses BDI scores are lower than for shift work nurses. The mean value for day working nurses 7.40 (SD = 6.08), but for shift work nurses BDI values 10.26 (SD = 6.68).

The data from studies are different, for example, a group of authors in their work studied the effects of nurses shift work on depression, comparing to day working nurses. The results indicated that the shift work nurses had higher mean values of BDI scores with the mean of 13.25 (SD = 10.80), but the day working $M = 9.94$ (SD = 7.06) accordingly. Mean BDI scores are in general higher than in this study, but the difference between the average values can be seen as similar (2.86 and 3.31) (Halvani et al., 2012)

Another study results indicated that shift working nurses were not statistically significantly different in depression indicators in comparison with the daily working nurses (Selvi et al., 2010)

Analysis of data shows that there are statistically significant differences between different age groups in BDI mean values – in the age group of 46-55 years BDI scores were significantly higher. It is known that ageing may be associated with an advanced intolerance to shift work due to diminished psycho-physical fitness, the reduced restorative quality of sleep, and a higher proneness to the internal desynchronization of circadian rhythms (Costa, 2003). In turn no statistically significant difference was found between the groups of different levels of education and amount of working hours per month.

Evaluation of the results showed that State anxiety mean values were 35.81 (SD = 9.02), but Trait anxiety mean values accordingly 38.04 (SD = 9.19). Anxiety scores by age groups didn't showed statistically significant differences. Relatively higher mean values were in the age group 46-55 years both in State anxiety and Trait anxiety subscales ($M = 38.20$ and $M = 41.43$). It should be noted that there was found statistically significant difference in Trait anxiety subscale mean values in the different groups of work organization - in nurses group, who were working in shift work, the mean values of Trait anxiety subscale are higher than in nurses group who work daily - $M = 43.26$ (SD = 8.72) and $M = 35.75$ (SD = 1.30) accordingly. In the similar study authors found that shift working nurses also have higher Anxiety scores compared to daily working nurses ($t = -2.384$, $p = 0.019$) (Selvi et al., 2010)

Another study showed that shift work affects oxidative stress and anxiety symptoms in nurses, the researchers found that mean values of Anxiety for daily working and shift working nurses do not differ: $M = 38.93 \pm 6.07$ daily working and $M = 38.80 \pm 5.30$ shift working nurses (Ulas et al., 2012).

Evaluating the data of PSQI it was found that the mean value was 4.98 (SD = 3.02). Positive correlation ($r = 0.34$; $p < 0, 05$) between the age of the respondents and sleep parameters was found. The highest rates were in the age group of 56 and more ($M = 5.68$, $SD = 3.28$). There is a statistically significant difference between daily and shift working nurses in PSQI results ($p = 0.01$). The daily working nurses PSQI scores were statistically significantly lower than in the group of shift workers. The daily working nurses PSQI results showed mean value 3.91 (SD = 2.26), but shift working nurses indicators were higher: $M = 6.16$ (SD = 3.86). Comparing our study results with other studies it was found that the data are different. A study revealed that PSQI average score for shift working nurses was 7 of 7 (SD = 2.60), but for daily working nurses mean value was 5.80 (SD = 2.80). The researchers concluded that shift work nurses compared to daily working nurses have a higher level of fatigue and worse sleep quality (Kunert, King, & Kolkhorst, 2007).

Shift work and with it associated health problems are important topic in healthcare, as its possible negative influence on professional's health and patient safety. The recognition of the mechanisms of shift-related problems could also be important to shift work planning (Saksvik, 2011).

It should be noted that adverse consequences for health and diminished quality of life at an individual level can result in remarkable employers' costs shifting employers, as well as increasing accidents and errors in health care (Emerson & Wickwire, 2017).

Several studies have shown that failure to gain appropriate sleep is a relevant contributor to medical errors, and a lack of sleep cause caregivers, including nurses, more predisposition to irritability and anger toward patients. This often convey to guilt, anxiety, depression, and even more sleep problems (Subhashni & Singh, 2010).

Conclusion

1. Shift work nurses are more depressed (according to BDI) than daily working nurses.
2. Nurses, who work in shift work, have higher anxiety traits than nurses, who work daily.
3. Shift work nurses compared to daily working nurses have a higher level of fatigue and worse sleep quality.

This research is meaningful due to the fact that it allows to acknowledge and evaluate the impact of shift work on nurse's health particularly on mood disorders and sleep quality. These findings suggest that we still need more studies to resolve some of the questions regarding the shift work effects on health.

References

- Alward, R. R., Monk, T. H., & American Nurses' Association. (1993). *The nurse's shift work handbook*. Washington, D.C.: American Nurses Publishing.
- Beck, A. T., Steer, R. A., & Carbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, Vol. 8*, Issue 1, 77-100.
- Brown, D. L., Feskanich, D., Sanchez, B. N, Rexrode, K. M., Schernhammer, E. S., & Lisabeth, L. D. (2009). Rotating night shift work and the risk of ischemic stroke. *Am J Epidemiol 2009; 169*, 1370-7.
- Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research 28*, 193-213.
- Circenis, K., Millere, I., & Deklava, L. (2011). Stress-related Psychological Disorders Among Surgical Care Nurses in Lavia. *Rewiev of Global Medicine and Healthcare Research*, 131-138.
- Conway, P. M., Campanini, P., Sartori, S., Dotti, R., & Costa, G. (2008). Main and interactive effects of shiftwork, age and work stress on health in an Italian sample of healthcare workers. *Appl Ergon 2008; 39*, 630-9.
- Costa, G. (2003). Shift work and occupational medicine:an overview. *Occupational Medicine*, 83-88.
- Emerson, M., & Wickwire, J. G.-B. (May 2017). Shift Work and Shift Work Sleep Disorder: Clinical and Organizational Perspectives. *Chest, Volume 151*, Issue 5, 1156-1172.
- Halvani, G. H., Nodoushan, I. S., Mojahede, H., Nodoushan, S., Nodoushan, R. J., & Hajian, N. (2012). Effect of Shift Work on the Frequency of Depression in Nursing Staff of Yazd University of Medical Science. *Journal of Community Health Research*, 104-109.
- Harma, M., & Kecklund, G. (2010). Shift work and health - how to proceed?. *Scand J Work Environ Health, 36*, 81-84.
- Hughes, V. (2015). Health Risks Associated with Nurse Night Shift Work: A Systematic Review. *GSTF Journal of Nursing and Health Care (JNHC) Vol.2*, No.2, 39-44.
- Hughes, R., & Stone, P. (2004). The perils of shiftwork: Evening shift, night shift and rotating shifts: Are they for you? *American Journal of Nursing 104* (9), 60-63.
- Kunert, K., King, M. L., & Kolkhorst, F. W. (2007). Fatigue and sleep quality in nurses. *J Psychosoc Nurs Ment Health Serv*, 30-37.
- Parent-Thirion, A., Fernández Macías, E., Hurley, J., & Vermeylen, G., Eurofound. (2007). *Fourth European Working Conditions Survey*. Luxembourg: Publications Office of the European Union.
- Pei-Chen Lin, Chung-Hey Chen, Shung-Mei Pan, Yao-Mei Chen, Chih-Hong Pan, Hsin-Chia Hung, & Ming-Tsang Wu. (2015). The association between rotating shift work and increased occupational stress in nurses. *J Occup Health 2015; 57*, 307-315.

- Rogers, A. E. (2008). The effects of fatigue and sleepiness on nurse performance and patient safety. In A. E. Rogers, *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. (pp. 509-533). USA: Agency for Healthcare Research and Quality.
- Saksvik, I. B. B. B. (2011). Individual differences in tolerance to shift work – A systematic review. *Sleep Med Rev, 15*, 221–35.
- Selvi, Y., Özdemir, P. G., Özdemir, O., Aydın, A., & Beşiroğlu, L. (2010). Influence of night shift work on psychologic state and quality of life in health workers. *The Journal of Psychiatry and Neurological Sciences*, 238-243.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Subhashni, D., & Singh Joy, A. K. (2010). Predicting depression in nurses. *American Journal of Nursing, 110* (2), 63-64.
- Tanaka, K., Otsubo, T., Tanaka, M. et al. (2010). Similarity in predictors between near miss and adverse event among Japanese nurses working at teaching hospitals. *Ind Health 48*, 775–782.
- The effects of fatigue and sleepiness on nurse performance and patient safety, *Patient Safety and Quality: (2008)*. In A. E. Rogers, *An Evidence-Based Handbook for Nurses*.
- Ulas, T., Buyukhatipoglu, H., Kirhan, I., Dal, M. S., Eren, M. A., Hazar, A., Demir, M. E., Aydogan, T., Karababa, F., Uyanikoglu, A., & Kurkcuoglu, I. C. (2012). The effect of day and night shifts on oxidative stress and anxiety symptoms of the nurses. *European Review for Medical and Pharmacological Sciences (16)*, 594-599.

MEN AND SPORT SOCIALIZATION TO MASCULINITY

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Abstract. *Socialization as a long-life process is an extremely important element of every human's life. From a early years every child is taught the right behaviour in the social space. One of the areas in which we are socialized are the behaviours and the roles of each gender. Little girls are taught behaviours based on empathy and care while boys are guided towards diverse physical activities. Sport then becomes a space where boy learns behaviours that are considered by the society to be proper for the men. Features described as "typically male" which boys learn while doing sports include domination, aggression or competition. Learned desire to dominate in this space is one of the determinants of Pierre Bourdieu's habitus of men. Domination structures are also the product of endless reproduction processes which results in the duplication of behaviour patterns including in the case of gender roles. Men and women are the main victims and prisoners of contemporary dominant cultural ideas. Not only the fact of doing sports is perceived as an appropriate socialization for masculinity but also being a fan is an area of "proper gender socialization". Sport as a space of manifestation by men of their strength and courage is also an exemplification of the hegemonic masculinity presented by Raewyn Connell.*

Keywords: *habitus of men, hegemonic masculinity, masculinity, men, socialization, sport.*

Introduction

The following text will deals with the issues of socialization of young boys, and adult men through sport to masculinity. Diverse physical activity allows people to express themselves, their worldview and helps in creating their identity. Physical recreation, within which sport is located is understood as "(...) different kinds of activities, undertaken in free time, voluntarily, for pleasure, self-expression, formation of one's personality, renewal and multiplication of psychophysical forces" (Wolańska, 1997: 59).

Practicing sport can mean belonging to a specific social circle and fulfilling a specific role in it. "As research shows, gender and related whit it roles and stereotypes significantly determine the structure of time use - this also applies to free time" (Chmura-Rutkowska, Głowacka-Sobiech, & Nowak-Kluczyński, 2012: 485).

From the dawn of time, sport was a man's thing, "(...) in its early stage, sport was seen primarily as a way to masculinity of both players and viewers" (Uliński,

2011: 164). In Ancient Greece only men could compete in Olympiads, a similar situation was in the Middle Ages, where only knights competed with each other in sports arenas. For many years” the sports training and sports shows were a place of meeting and socialization of men in their own community, mutual grounding of identity and self-value and consolidation of male intergenerational bonds” (Uliński, 2011: 161).

Thanks to sport, men shape their identity. “Sport is an example of one of many cultural practices that influence the shape of male identity” (Kluczyńska, 2010: 87). This is because sport is still seen as an area where you can confirm your strength and dominance of male power. Sport teaches people discipline, which, especially young men, can learn how to become a “real man” (Kluczyńska, 2010). At a time when people often talk about the feminisation of society, men are lost and are looking for a way to show their value and authority. Thus “sport has become one of the last bastions of male power and exaltation over - and separation from - feminization of society and transformation boys into men” (Kluczyńska, 2010: 88.). It was therefore perceived as a basic element of proper development of boys, so that he could belong to the world of real men must be characterized by endurance, physical strength, must be ambitious and persistently strive for victory.

This article aims to review and analyze literature that rise a subject of socialization, sport and masculinity. Performed interpretation and in-depth analysis of the topic will allow for proper knowledge and understanding of the issues discussed in the text below.

Gender socialization

The process of socialization that lasts from the moment of birth, everyone to life in society. “Socialization is a process based on the acquisition of norms, values, rules of social life, whose knowledge will provide the individual's place in society” (Karkowska, 2006: 119). By acquiring knowledge and skills of appropriate behaviour in the social world from childhood, we become full-fledged members of society. This process is complex and multifaceted and consists in learning appropriate behaviours, “thanks to which a man, a biological being, becomes a social being, a member of a specific society and a representative of a specific culture” (Szacka, 2003: 137). It is a process of putting yourself on the side that the social environment expects.

Gender socialization refers to messages about shaping an individual's identity in the context of his gender. “Her content focuses primarily on the value of messages and norms related to gender roles” (Karkowska, 2006: 119). In this process, ways of fulfilling gender roles are also transmitted, and „(...) gender is constructed and transmitted socially” (Dziekanowska, 2008:5 8). The ways of

socialization, and what is being handed on in it, are conditioned by the cultural and social contexts in which it takes place. Katarzyna Gawlicz pointed that that gender-shaping processes take place “in a context determined by dominating discourses that set norms regarding the behaviour of women and men (and girls and boys) and constitute a powerful force limiting individuals in their thinking and behaviour”(Gawlicz, 2009: 89).

Humans are not born with the skills that allow recognizing the gender, but he acquires them in the process of socialization. Despite the fact that the child is not aware of his or her gender from birth, his parents give him certain characteristics before birth and attribute properties typical for boys or girls (eg. Brannon, 2002; Mandal, 2003). As Linda Brannon (2002) points out, in the early months of life the child begins to recognize the faces of women and men, but their differences can be noticed mainly on the basis of the length of hair, without understanding the gender difference. “But when children start talking, they quickly learn words that indicate to gender” (Brannon, 2002: 199). Around the age of two the child accurately uses gender labels. Linda Brannon emphasizes that a much faster development of this skill can be seen in those children whose parents paid attention to gender, and they themselves often manifested the traditional / stereotypical attitudes assigned to each gender (Brannon, 2002). Children, observing their relatives, mainly parents, learn what behaviours are adequate for their own and which are for the opposite gender (Pankowska, 2005).

Eugenia Mandal in her book *Femininity and Masculinity* (2003: 37) indicates that already in “24 hours after birth, parents differentiate their description of the child depending on his sex. Girls are considered to be more delicate, weak and less mobile than boys”. The very fact of choosing a name or colour of a layette for a child is also conditioned by gender. Parents treat their children in a different way, depending on whether it is a boy or a girl, they give them different requirements, expect other behaviours. “With age, boys and girls are offered other games, plays, interests or literature” (Chmura-Rutkowska & Ostrouch, 2007: 26). Fairy tales, which are reading for young children very often contain a stereotypical image of gender. Most of the characters in children's literature are boys or men. These figures are characterized by “typically masculine” features, which are “(...) ingenuity, bravery, perseverance, achievements, sport (...)” (Pankowska, 2005: 82) and are much smarter and more active characters.

Analyzing toys it is easy to notice that depending on whom they are addressed, they influence the development of various traits and skills (Renzetti & Curran, 2005). Already for a boy who is just a few years old are offered electronic, constructional toys that encourage inventiveness, manipulation of elements, competition and aggression. Young boys have also been encouraged to participate in various sports activities since childhood, because sport is perceived as the place of “(...) identification with traditional masculine identity” (Melosik,

2015: 315). Another place that requires from each gender different behaviours is school. “Teachers from the first years of schooling have a tendency to put tasks to the children according to their own concept of student-boy and student-girl. Girls receive tasks that require careful work, boys - tasks requiring independence” (Mandal, 2003: 38). In addition to the requirements set by teachers, peers play a very important, and sometimes even much more important role in the process of socialization. Contemporaries socialization exerts intense pressure on young boys and on their behaviour. The pressure from contemporaries groups is much bigger compared to boys than girls. The boys are “(...) forced to hiding these character traits that conflict with the image of hardness, masculinity, bravery” (Bradley, 2008: 41).

Sport beyond the extremely important role - activating and influencing a healthy human life, also has a socializing role. “Young men in a sports competitions they are look for recognition, acceptance, self-value, and finally their own identity. They learn the fact that, to be accepted person you must won” (Modzelewska & Ostrouch-Kamińska, 2015: 147). Urszula Kluczyńska indicate that “if a boy wants to belong to the dominant mainstream of masculinity (referred to as the main one), he must be characterized by physical strength and toughness, he must strive for success and compete, fighting for victory” (Kluczyńska, 2010: 88). Sport can therefore be described as an immanent feature of boys' development. “Sport defines aggressive behaviour, strength and hardness as a norm - the norm of masculinity - and socializes to it. Constructs the identity of young men and reproduces male hegemony, because the sports hero is perceived as a real man. Athletes are becoming heroes and authorities, who are adored, exalted and elevated to the cultural pedestal” (Kluczyńska, 2010: 89).

Masculinity in sport

Not only during childhood and early youth, man is subject to the process of socialization. This process is constant and it lasts all the time. Thanks to socialization, an individual creates and constructs a sense of them own “I” and identity. One of the areas of shaping the man identity, also in the early stages of his life, is a variety physical activities, while the sport itself is often associated with competition and domination, which is culturally assign to masculinity. Sport is one of the most “important and at the same time perfectly clear areas of celebration [male - O.M.] dominance (...)” (Kluczyńska, 2011: 67), and the fact of connecting it with prestige and respect further underlines its importance in society.

Constant changes and evolutions of social life have awake in some people a sense of fear of excessive feminisation of the whole society. One of the reactions to this state was the escape of men in sport, which was to become “(...) a place of

supremacy and separation from women” (Arcimowicz, 2003: 65). Sport is an area of confirming the traditional power of masculinity, strength and violence (Kluczyńska, 2011). The established order, structure, values and principles transmitted within it are confirmed in the concepts of dominant, traditional masculinity. “The world of sport is an important cultural arena that partially serves to socialize boys and young men in values such as hierarchy, competition, aggression” (Messner, 1987: 66).

It is pointed out that the concept of masculinity and femininity emerges as part of sport. Young men are looking for respect through the results they get in sports. This social sphere of life emphasizes the importance of rivalry and strength and the simultaneous domination of men. It also helps in the socialization of young boys not only as an indication of masculine attributes, “but it can also be used to humanize men” (Arcimowicz, 2003: 65). However, sport, is a sphere where strength and competition are extremely valued features, is supporting the view of male domination and helps in the construction of men's hegemony (Arcimowicz, 2003; Kluczyńska, 2011). Sport can be described as a kind of field of reproduction of hegemonic masculinity, but also of violence and aggression (Jakubowska, 2017b: 28).

Some researchers, however, indicated that aggression is an inseparable element of the so-called “male sports” (Jakubowska, 2017a: 136) Jolanta Miluska (1996) pointed that such sports can include football, boxing or hunting, but you can also include here various types of motor sports, in which “both contestants and viewers are mainly men, which contributes to the perception of this discipline as typically masculine. What's more, the car, competition and risk as the main attributes of motor sports are traditionally reserved for men” (Brzuszkiewicz, 2013: 129). These sports are very often high-risk activities. Many times they are called as an extreme sports, that is, disciplines, “(...) which practicing requires above-average skills, courage and action in conditions of high risk, often life-threatening. Participation in them involves overcoming extreme external difficulties, psychological limitations and emotions associated with it” (Muszkieta & Gembiak, 2004: 478). People who practice extreme sports to a large extent are guided by the desire to test their abilities and skills in conditions of increased risk. “In such circumstances, man forgets about the surrounding reality and becomes a hero not only in his own eyes, but also in the face of crowds of gathered fans. It is a great form of releasing, giving enormous complacency. Practicing extreme sports gives the feeling of accomplishing something extraordinary, regardless of whether the person treats them as a form of establishing new opportunities for people or as just great fun”(Muszkieta & Gembiak, 2004: 487).

Performing extreme sports requires participants not only to be properly physically fit, but also to have psychological resilience and perseverance. Strong

psychology and strong nerves are sometimes much more important and more significant at critical moments, where contestants must face not only a specific task, but also themselves, emphasizing their masculinity and the fact of being a “real man”. Therefore, during the training of young boys next to physical fitness, it is extremely important to shape the psychological immunity. Often a stereotype of a man is reproduced in society as a person who is strong psychic, which is additionally confirmed by proper sports training.

Michał Lenartowicz (2012: 51) indicates that “sport and physical recreation in free time were in the past and are still used as distinguishing features of social belonging (...)”, which in turn connects with the concept of habitus presented by Pierre Bourdieu. The author of this theory describes habitus as “ (...) matrices of perception, thinking and action (which - O.M.) could be called transcendent historical, because they are universally imposed on all members of society as transcendent: as a consequence, the androcentric images of biological and social reproduction are inscribed into the objectivity of common sense (...)” (Bourdieu, 2004: 45-46). Therefore, it can be stated that, for example, male domination in sport is one of the determinants of men's habitus determined for this sphere of life. While “gendered habitus are getting, among other in the process of socialization” (Jakubowska, 2014: 158).

Pierre Bourdieu points out that domination structures are the result of constant reproduction processes (Bourdieu, 2004), which in turn results in mapping behaviour patterns among other in reference to gender roles. The author adds that the main prisoners and victims of the currently prevailing cultural ideas are men, because, as he states, the dispositions “which confirm the supremacy and execution of dominance, are not written in nature but they are subject to the process of construction - they are the creation of a long process of socialization, that is, the active process of gender differentiation” (Bourdieu, 2004: 63). Socialization to gender roles imposes on men some kind of behaviour, that is, the above-mentioned habitus. In addition, men are required “(...) to constantly prove their masculinity in opposition to femininity” (Pankowska, 2005: 15). Men live in a world that requires them to constant subordination to the framework of behaviour imposed by society.

The world in which we live nowadays has created around some disciplines and sports events the atmosphere of the holiday sometimes on the rank of a national holiday. Polish society, like many others considers football- which is the most popular sport in the world - as its national sport. This discipline has a lot of fans, and the very matches of the national team are followed by the majority of the society. Football players become the idols of young boys who dream of becoming an outstanding sportsman enjoying the fame and recognition of society as their idols. “Sport gives the young boys a tempting promise - it is a promise of admiration, appreciation or even worship” (Kluczyńska, 2010: 97). This situation,

especially in the case of young boys, highlights the fact that our society is very much attached to doing sport. Boys from an early age are encouraged to play football, and in later years in sports activities at school this type of activity is also very promoted. As indicated by Zbyszko Melosik, “football is undoubtedly a sport connected with the *“culture of men”*, embodying the homogeneity of this gender” (Melosik, 2015: 313). In addition, as indicated by U. Kluczyńska (2011: 84) “..football is an important way to shape the dominant masculinity and identity of men”.

Apart from active participation in this sport, the fact of supporting and being a fan plays a large role in Polish society. Zbyszko Melosik emphasizes that the support culture has archetypically masculine character (Melosik, 2015). It is worth mentioning the period when in 2012 in Poland the European Football Championship was played. The whole country was interested in this sporting event. Media broadcasts were dominated by the coverage of continuous games, and the broadcasts themselves were watched by a huge audience, which were not only great fans, but also people who are not interested in this sport every day. At that time, the fact of following the Championships was an important social experience.

Conclusion

Summarizing the considerations above, at this point it is possible to try to formulate a few general conclusions about discussed topic.

At first, sport is now one of the most spectacular phenomena of contemporary culture and constitutes a space in which gender segregation is common and generally accepted (Uliński, 2011: 161), and “(...) helped and helps to ground the symbolic and cultural advantage of masculinity in society” (Dziubiński, Organista, & Mazur, 2017: 86).

Secondly, sport and various physical activities in the patriarchal society is developed mainly by and for men. Zbigniew Krawczyk indicates that “(...) one can and should consider sport as a form of human searching for its essence and ways of *“transgressing itself”* (Krawczyk, 2000: 45). It is also a practice that to a very large extent shape the identity of a man and his social position - its defines masculine hegemony, becoming “one of the central areas of social production of masculinity”, as indicated U. Kluczyńska (2010: 97) based on the text of Davis Whison (1990: 19).

Thirdly, send to children, often unconsciously, the content and requirements for the behaviour of each gender including gender stereotypes can have a very negative impact not only on the perception of the world and diversity, but can also inhibit the self-development of children, and raise the fear of going beyond the learned framework of gender behaviour.

And finally the considerations discussed above regarding sport and socialization to masculinity by sport are only one of the possible points of view. Obviously, not all men are able to meet social expectations in the same way and become a perfect example of a “suitably socialized” individual. Each of the men shapes his gender identity in a different way through sport, which takes a different place in his life. Therefore, it is worth mentioning here the concept of hegemonic masculinity Raewyn Connell, which indicates that in the modern world there is not only one pattern of masculinity, but there are many, because they depend on historical, geographical or socio-cultural conditions. This masculinity pattern “embodied the currently most honored way of being a man, it required all other men to position themselves in relation to it, and it ideologically legitimated the global subordination of women to men” (Connell & Messerschmidt, 2005: 832). According to Connell, hegemonic masculinity is the configuration of “(...) gender practices that accept and legitimize patriarchy, guaranteeing the simultaneous dominant position of men and the subordination of women” (Connell, 1987: 77). This concept is often used by the researchers to understand the popularity of body contact confrontational sports—which function as an endlessly renewed symbol of masculinity—and in understanding the violence (...) in sporting milieus” (Connell & Messerschmidt, 2005: 833). In this concept sport emphasizes hegemonic masculinity and sport is regarded as the most 'male' social institution.

Gender socialization through sport constantly communicates a stereotypical set of characteristics and requirements for each gender. Young boys, but also adult men who are shaped in such a way often without reflection reproduce only the patterns of behaviour, male habits and do not reflect on possible alternatives of constructing their own “I”.

References

- Arcimowicz, K. (2003). *Obraz mężczyzny w polskich mediach*, (pp. 65-66). Gdańsk.
- Bourdieu, P. (2004). *Męska dominacja*, (pp. 45-47, 63). Warszawa.
- Bradley, H. (2008). *Płeć* (p. 41). Warszawa.
- Brannon, L. (2002). *Psychologia rodzaju*, (pp. 199-200). Gdańsk.
- Brzuszkiewicz, A. (2013). *To nie jest sport dla kobiet - Analiza dyskursu wykluczającego na przykładzie wyścigów Formuły 1* (p. 129), „Człowiek i Społeczeństwo” t.XXXVI - z.1-2013.
- Chmura-Rutkowska, I., Głowacka-Sobiech, E., & Nowak-Kluczyński, K. (2012). *Męska natura- męskie rozrywki. Zdrowie mężczyzny w kontekście męskich pasji i czasu wolnego we współczesnych czasopiśmiech hobbistycznych wydawanych w Polsce*, (p. 485). “Nowiny lekarskie”, Nr 5.
- Chmura-Rutkowska, I., & Ostrouch, J. (2007), *Mężczyźni na przełęczu życia. Studium socjo pedagogiczne*. (p. 26). Kraków.
- Connell, R. W. (1987). *Gender and Power*, (p. 77). Cambridge.

- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic Masculinity. Rethinking the concept, *Gender & Society*, Vol. 19, No. 6, 832-833.
- Dziekanowska, M. (2008). Męska płć kulturowa w perspektywie socjologicznej, In: Radomski, A., Truchlińska, B. (Eds.) *Męskość w kulturze współczesnej* (pp. 58). Lublin.
- Dziubiński, Z., Ogranista, N., & Mazur, Z. (2017). O męskości konstruowanej medialnie: zarys zagadnień teoretycznych i przykład analizy empirycznej (p. 86). „*Kultura i Społeczeństwo*” 61/2017.
- Gawlicz, K. (2009). Negocjowanie znaczenia kategorii płci. Pomiędzy różnicowaniem płci a przekraczaniem granic, In: Kopciwicz, L., Zierkiewicz, E. (Eds.), *Koniec mitu niewinności? Płć i seksualność w socjalizacji i edukacji* (p. 89). Warszawa.
- Jakubowska, H. (2014). *Gra ciałem. Praktyki i dyskursy różnicowania płci w sporcie*. Warszawa.
- Jakubowska, H. (2017). Płć, In: Jakubowska H., Nosa P. (Eds.), *Socjologia sportu*. Warszawa.
- Jakubowska, H. (2017). Emocje, In: Jakubowska H., Nosa P. (Eds.), *Socjologia sportu*, (p. 28). Warszawa.
- Karkowska, M. (2006). Socjalizacja rodzajowa dziewcząt i chłopców a ukryty program edukacji szkolnej. In: Chomczyńska-Rubacha, M. (Eds.), *Role płciowe. Kultura i edukacja*. Łódź.
- Kluczyńska, U. (2010). Sport jako obszar konstruowania tożsamości mężczyzn. Znaczenia wpisane w sport i możliwości ich definiowania. In: Dąbrowska, M., Radomski A. (Eds.) *Męskość jako kategoria kulturowa* (pp. 87-89, 97). Lublin.
- Kluczyńska, U. (2011). Męska dominacja i piłka nożna. Analizy medialnych prezentacji, In: Wojnicka K., Ciaputa E. (Eds.), *Karuzela z mężczyznami. Problematyka męskości w polskich badaniach społecznych* (pp. 65,67, 84). Kraków.
- Krawczyk, Z. (2000). *Sport w zmieniającym się społeczeństwie* (p. 45). Warszawa.
- Lenartowicz, M. (2012). Klasowe uwarunkowania sportu z perspektywy teoretycznej Pierre'a Bourdieu. *Kultura i Społeczeństwo*, nr 3.
- Mandal, E. (2003). *Kobiecość i męskość*. Warszawa.
- Melosik, Z. (2015). Społeczno-Kulturowe konstrukcje piłki nożnej: Męskość, kolektywna tożsamość i japonizacja. *Studia Edukacyjne*, nr37/2015, 313-315.
- Messner, M. A. (1987). The life of a Man's Season. Male Identity in the Life Course of the Jock, In: Kimmel M.(Eds.) *Changing Men. New Direction in Research on Men and Masculinity*. (p. 66). Newbury-London-New Delhi.
- Miluska, J. (1996). *Tożsamość kobiet i mężczyzn w cyklu życia*. Poznań.
- Modzelewska, O., & Ostrouch-Kamińska, J. (2015). Dominacja i współziałanie. Sposoby doświadczania męskości przez off-roadowców, *Szkice Humanistyczne*” XV nr 3-4 (vol. 38), 147.
- Muszkiet, R., & Gembia, M. (2004). Uwarunkowania i motywy uprawiania sportów ekstremalnych, In: Dziubinowski Z. (Ed.), *Edukacja poprzez sport*, 478, 487.
- Pankowska, D. (2005). *Wychowanie a role płciowe* (pp. 15, 71, 82). Gdańsk.
- Renzetti, C. M., & Curran, D. J. (2005). *Kobiety, mężczyźni i społeczeństwo*. Warszawa.
- Szacka, B. (2009). *Wprowadzenie do socjologii*. Warszawa.
- Uliński, M. (2011). Sport jako obszar modelowania męskości i kobiecości, In: Bartosz B. (Ed.) *Wymiary kobiecości i męskości* (pp. 161, 164). Warszawa.
- Wolańska, T. (1997). *Leksykon Sport dla wszystkich – rekreacja ruchowa*. Warszawa.
- Whitson, D. (1990). Sport in the social construction of masculinity, In: Messner M. A., Sabo D. F. (Eds.) *Sport, Men, and the Gender Order: Critical Feminist Perspectives* (p. 19). Champaign: Human Kinetics

MANIFESTATION OF SOCIETAL ATTITUDE TOWARDS THE SOCIAL WORKER'S PROFESSION IN LITHUANIA AND THE UKRAINE

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Abstract. *The paper focuses on the issues of societal attitude towards the social worker's profession. Aiming to reveal the societal attitude towards manifestation of the social worker's profession in Lithuania and the Ukraine, a quantitative research method has been chosen, using a semi-standardised questionnaire. The research data analysis employed a non-parametric statistical method – Kruskal-Wallis test. The hypothesis raised at the beginning of the research has been partly proven: it is likely that society has no clear vision on what are the characteristics of the content of professional activities of a social worker. The answers of the respondents (N=784) suggest that they cannot exactly say what social work is; but understand where and with what kinds of people's groups the staff can work. They do not single out professional competences; however, they name the knowledge, abilities which are required for a social worker. They understand the values which are not attributed to general values but rather particularly oriented to a client, and know real material condition of a social worker, i.e. that this job is low paid.*

Keywords: *social work, society attitude, professional competence of a social worker.*

Introduction

Social work was not acknowledged as a profession at once. Like any other profession, the latter develops as a response to the demand for this profession, and uniqueness of this profession supposes that it is a social profession whose object is a man – an individual, a family, a group of people having difficulties or problems which should be solved. A social worker must feel the pulse of societal well-being, social integration, conditions to harmonious functioning of the man and environment; and, when the pulse becomes irregular, to provide social support meeting clients' (consumers' of services) needs. Largest endeavours have been focused for that purpose by social workers in the USA. This work was carried out on the voluntarily basis and much was contributed to give social work the status of a profession and further professionalization of this performance would continue (Kavaliauskienė, 2010). In Lithuania and the Ukraine, social work is not a new

social phenomenon; the profession of support to an individual has been developing and is being developed by an intensive shift of the social-educational paradigm, in a situation of social transformations; however, nowadays intensive professionalization of this phenomenon is going on. This process has always been and is slow. Living in the twenty-first century, we can observe how the world and its problems are becoming relevant to all. Therefore, the profession based on full-fledged support to an individual must adjust to the development of the world (Dirgėlienė, 2013; Ivanauskienė & Pakrijauskaitė, 2015). However, in society, still there is no image on what are the limits of social worker's competences formed; therefore, social work is characterised quite unfavourably. A negative impact is rendered to social worker's prestige in society, constant facing with negative phenomena of life, undefined criteria for assessment of work results, large amounts of clients, overtime etc. (Kiaunytė, 2008). Influence of social work on society is low. Having compared different countries, quite high differences appear; they are determined by law, prevailing culture and economic opportunities of each of the countries.

In contemporary society, a certain stereotype that mass media are that social institute which is most trusted has formed. This means of information renders quite limited, stereotypical or negative information about the surrounding social reality, certain socio-cultural groups (Ališauskienė & Markauskaitė, 2014). However, mass media and their various forms make a biggest influence in formation of the status of the profession and when anchoring it among other professions. In mass media, the social work profession is usually depicted by presenting ambiguous information, emphasising drawbacks of social workers and discrepancies; information is presented without considering the image of the social work profession being shaped, and information itself is insufficiently detailed and clear. Despite that, mass media publish articles which form the image of a social worker which becomes a stereotype being positioned as representing societal attitude. Having explored the Western social context, it is obvious that society without services of social work professionals is unimaginable. This profession is treated as a profession of a modern society. Its contribution is enormous everywhere; nevertheless, in Lithuania it is insufficiently or unclearly perceived (Pivorienė & Večerskytė, 2005; Varžinskienė, 2008; Kavaliauskienė, 2010; Wagner, 2014 etc.).

Problematic research issues. Observing information on the social worker's profession presented by mass media, an impression that society incompletely understands what functions are executed by representatives of this profession, what activities they are involved in and does society have sufficient information on social work at all appears. This supposes a problem research question related to perception and assessment of social work as a profession: Does society have sufficient information on the social worker's profession and its activities?

The hypothesis: it is likely that society has no clear vision of what are the characteristics of the content of social worker’s professional activities.

The object of the research is manifestation of the attitude towards the social worker’s profession.

The aim of the research is to reveal manifestation of societal attitude towards the social worker’s profession in Lithuania and the Ukraine.

Samples and methodology of the research. The research sample has been formed by applying the methods of non-probability and convenience sampling. The research sample was calculated on the ground of experience of the Public Opinion and Market Research Company *Factus* (2013), by carrying out quantitative research. The spreadsheet enabled finding out what sample of participants was required to obtain representative data. The survey involved 784 respondents from Lithuania (N=416) and from the Ukraine (N=368). The questionnaire was applied to get the results of the research. Empirical data has been processed using the SPSS 17.0 (Statistical Package for Social Sciences). The descriptive statistical methods (means (M), standard deviations (SD), percentage, characteristics frequencies), a non-parametric independent sample Kruskal-Wallis T Test were applied. The results of the survey have been processed and analysed at significance level value $p \leq 0.05$. The medians (M) are calculated with Anova test.

The research results and discussion

The content of social worker’s professional activities in societal attitude. Analysis of this *diagnostic field of characteristics of professional activities in social work* aimed at finding out how much Lithuanian and Ukrainian respondents (hereinafter referred to as LT and UK) representing their societies are familiar with social work(see Table 1).

Table 1 Knowledge of social work respondents from Lithuania and the Ukraine (N=784)

Structural parts	Lithuania (N=416)		the Ukraine (N=368)	
	M	p<0.05	M	p<0.05
Social activities	2.35	0.32	1.79	0.135
Caring for the sick	2.09	0.37	2.53	0.063
House cleaning	2.78	0.319	1.97	0.296
Solution of different issues for socially insecure families	1.57	0.032	1.79	0.294
Charitable activities	2.68	0.049	1.74	0.707
Providing various services to abandoned and people with disabilities	1.68	0.993	1.72	0.032
Children’s rights representation problem families	1.69	0.493	1.89	0.001

Lithuanian respondents regard social work as *house cleaning* (M=2.78) and *charitable activities* (M=2.68). Whereas the respondents from Ukraine claim that social work implies *caring for the sick* (M=2.53) and *house cleaning* (M=1.97). Few respondents mentioned activities that actually denote the field of social work such as solving issues of socially insecure families (LT M=1.57, UK M=1.79), providing various services to abandoned people and people with disability (LT M=1.68, UK M=1.72), children's rights representation problem families (LT M=1.69, UK M=1.89). The comparison of the responses given by the respondents from both countries implies that the respondents do not have a clearly delineated concept of social work and the functions they attribute to a welfare officer may also be performed by other professionals. The statistically significant difference ($\chi^2=53.685a$, $df=16$, $p=0.049$) confirms the fact that Lithuanian respondents regard social work as *charitable activities*. Social work is not a highly-paid job; therefore, its reward is defined as a charity activity. Such attitude may be associated with the origin of this professional activity. Social work was being formed under the influence of the ideas of the social movement of early philanthropy and Christian church. Movements of charity organisations and community centres/homes are treated as direct prototypes of professional social work (Cox & Pawar, 2013) successfully implementing their activities in present-day society, too. On the other hand, social work is characterised as paid professional activities aiming at helping people having serious problems in their lives by providing them with services of care and security as well as counselling and social support (Pierson & Thomas, 2010). An assumption can be drawn that the formation of respondents' attitudes was influenced by the situation that social work is a little-paid professional activity; therefore, the associations with the profession's salaries name it charity work. The statistically significant difference in responses of Lithuanian respondents regarding *the solution of different issues for socially insecure families* ($\chi^2=4.619$, $df=1$, $p\leq 0.032$) as well as in answers given by the respondents from Ukraine about *provision of various services to abandoned and people with disabilities* ($\chi^2=4.606$, $df=1$, $p\leq 0.032$) and *children's rights representation problem families* ($\chi^2=11.009$, $df=1$, $p\leq 0.001$) signifies that social work in the mentioned fields has been better promoted/ is more familiar to the respondents.

The analysis of the research data has indicated other professionals being able to perform the duties of social workers (see Table 2).

The respondents from both countries chose *a manager* most often (LT M=3.14; UK M=2.58); they also thought that *a police officer* could implement the duties of social workers (LT M=2.78; UK M=2.28) as well as *a public figure* (LT M=2.77; UK M=2.11). The statistically significant difference in dwelling places of the respondents and the choice of a police officer ($\chi^2=6.118$, $df=2$, $p\leq 0.047$) suggests that many respondents found professional functions of a social worker

and police officer complimentary as one of the services a police officer provides is assisting people experiencing difficulties. There is a statistically significant difference in the responses of Ukrainian respondents regarding their dwelling places and professional choice of a *psychologist* ($x^2=8.925$, $df=2$, $p\leq 0.012$) and *social pedagogue* ($x^2=13.876$, $df=2$, $p\leq 0.001$).

Table 2 **Representatives of other professions who are able to perform functions of social workers from the point of view of Lithuanian and Ukrainian respondents (N=784)**

Other professions	Lithuania (N=416)		the Ukraine (N=368)	
	M	p<0.05	M	p<0.05
Health care professional	2.26	0.191	1.94	0.515
Psychologist	2.06	0.58	1.69	0.012
Educator	2.20	0.527	1.84	0.135
Manager	3.14	0.37	2.58	0.077
Police officer	2.78	0.047	2.28	0.697
Social pedagogue	1.61	0.215	1.54	0.001
Special educator	2.00	0.128	1.81	0.476
Public figure	2.77	0.607	2.11	0.972

Working with clients of various ages, attributed to different social groups, a social worker performs many *functions*: analyses a particular situation, sets aims, plans, models, organises, coordinates, educates and teaches, consults, controls, defends human rights etc. (DuBois & Miley, 2014; Hepworth et al., 2010; Максимов, 2015). Due to these diverse abundant functions attributed to a social worker, the corresponding professional *roles* of a social worker are singled out, such as mediator, defender, educator/teacher, changer of behaviour, consultant, service provider, case manager etc. (Hepworth et al., 2010). In professional performance of a social worker, these roles/functions are not separated; they usually are intertwined and a specialist must perform several roles of a social worker at once. Some functions performed by representatives of some professions actualised by the respondents are close to those being carried out by social workers (control, consulting, representation, formation of social skills etc.). An assumption can be drawn that the respondents mostly identify those social worker's functions which are mostly positioned in public space.

Socialworker's professional abilities, knowledge, value attitudes in the societal attitude. The profession of a social worker is acknowledged at an international level, and functions of this work must be performed by competent staff. Professional competence of a social worker may be characterised as a dynamic combination of knowledge, abilities and value attitudes contributing to professional authoritative solution of some issues and enabling proper performance of activities (Makštutytė & Vaškevičiūtė, 2011). Each profession

requires a specific combination of competences; however, it is not easy to name and standardise professional competences of a social worker (Ruškus & Kiaunytė, 2010). A social worker is a specialist whose work purpose is to enhance the abilities of man's adjustment to the surrounding environment, to restore relations with a community helping to integrate into society and stimulating full-fledged social functioning of an individual. Such complex activity requires not only specific knowledge on social work but also on other fields; this is acknowledged in specific spaces closely related to social work (scientific, academic, practical). The research aimed to find out what knowledge is required in professional activities of social work exactly from the point of view the respondents representing the general/ societal attitude (see Table 2). According to the results of the survey, both Lithuanian and Ukrainian respondents considered *expertise in psychology* the most significant in professional education (LT 95.6 percent; UK 96.5 percent), which implies that psychological background is vitally important in social work for professionals dealing with different socially disadvantaged groups of individuals (people with disabilities, social inadequacy, the homeless, etc.), in undefined and complex situations.

Table 3 Attitude of Lithuanian and Ukrainian respondents towards importance of knowledge required for a social worker (N=784)

Knowledge	Lithuania	the Ukraine	Lithuania	the Ukraine	Lithuania	the Ukraine	Lithuania	the Ukraine	p<0.05	
	Vocational		Secondary		College		Higher education			
	Accept									
	Percentage									
Legal	73.5	58.6	42.5	88	33.4	70	44.7	79.8	0.004	0.000
Psychological	89	98.4	95	100	100	91.4	100	94.7	0.000	0.096
Ethic	86	86.7	90	100	97.4	72.9	97.1	82.9	0.000	0.046
Cultural	84.4	81.4	85	84	91	81.4	90	81.5	0.022	0.005
Social policy	81.3	81.4	85	42	89.8	74.1	82.1	80.6	0.026	0.343
Philosophy	67.2	77.7	67.5	44	57.7	55.8	59	58.7	0.285	0.161
Sociology	90.7	95.4	85	96	78.2	81.2	71	80.1	0.076	0.129
Management	43.7	74.5	50	64	50	48.6	42	61.7	0.233	0.33

The analysis of the survey results has indicated a statistically significant difference in attitudes towards the importance of expertise in social work (LT $x^2=94.554$, $df=16$, $p\leq 0.000$). The respondents with college emphasised *ethic expertise* (LT 90.7 percent, $x^2=79.146$, $df=16$, $p\leq 0.000$; UK 87.5 percent, $x^2=31.719$, $df=20$, $p\leq 0.046$). The statistical significance (LT $x^2=23.300$, $df=16$, $p\leq 0.022$; UK $x^2=40.292$, $df=20$, $p\leq 0.005$) suggests *cultural expertise* being important. A social worker is expected to follow ethical guidelines, to respect different cultures and be sensitive to cultural differences as well as take care and provide social support to all national, religious and cultural minorities. The respondents also emphasised the importance of *legal knowledge* (LT $x^2=34.925$, $df=16$, $p\leq 0.004$; UK $x^2=53.012$, $df=20$, $p\leq 0.000$) and *expertise in social policy* (LT $x^2=28.645$, $df=16$, $p\leq 0.026$). Actualisation of knowledge in the areas of law and social policy allow drawing an assumption that the respondents identify the knowledge which is important to a social work relating this professional activity to the context of protection of human rights.

Table 4 Abilities required for a social worker in the attitude of Lithuanian and Ukrainian respondents (N=784)

Skills	Lithuania (N=416)		the Ukraine (N=368)	
	M	SD	M	SD
Entrepreneurship	2.56	0.96	2.17	1.19
Project development and management	2.30	0.93	2.03	1.12
Public activity	1.92	0.84	1.90	1.04
Negotiating skills	1.91	0.88	1.73	0.90
The ability to organize human and financial resources	1.90	0.74	1.99	1.04
Self-evaluation and self-assessment	1.87	0.79	1.84	1.01
The ability to use information technology	1.77	0.75	1.72	0.90
Action research, analysis and evaluation	1.74	0.75	1.62	0.84
Information analysis	1.70	0.70	1.63	0.83
The ability to influence the social environment	1.69	0.73	1.67	0.88
Ability to work independently	1.52	0.67	1.64	0.93
The ability to create a safe and supportive environment	1.52	0.65	1.68	0.88
Quick orientation	1.48	0.60	1.53	0.82
Problem identification and resolution	1.47	0.63	1.58	0.84
Communication	1.44	0.63	1.47	0.71
The ability to apply the knowledge gained in practice	1.41	0.55	1.46	0.75
The ability to care for others	1.36	0.54	1.45	0.68

The aim of the research was to identify the most significant competences (skills) necessary in the field of social work (see Table 4).

The respondent from both countries claim that a social worker needs many skills from the list of common competences, i.e. entrepreneurship (LT M=2.56, UK M=2.17), project development and management (LT M=2.30, UK M=2.03), the ability to organize human and financial resources (UK M=1.99) as well as public activities (LT M=1.92). Nevertheless, the respondents from both countries did not find some other professional competences decisive and the following skills may be attributed to the latter: negotiating skills; capacity to investigate, analyse and access processes; ability to influence social environment; capability to identify and solve problems as well as looking after the others. The present fact implies that the respondents did not consider what skills certain competences include, whereas they acknowledged the ability of a welfare officer to realise their skills in practise.

Values of social workers constitute one of the most essential areas of professional competences, comprising a subjective fundamental of social work (Kavaliauskienė, 2010). As welfare offices deal with people from socially sensitive groups, it is vitally important for them to continually nourish their professional values as well as ethics in their personal and professional behaviour. The respondents were given a list of values defining the contents of communication between the client and welfare officer. There should be emphasised that assumptions of both Lithuanian and Ukrainian respondents were very alike (see Table 5).

Table 5 Social worker's professional values according to their importance in the attitude of Lithuanian and Ukrainian respondents (N=784)

Values	Lithuania (N=416)			the Ukraine (N=368)		
	M	SD	p<0.05	M	SD	p<0.05
Customer's right to choose	2.06	0.84		1.69	0.89	
Individualization	2.04	0.87		1.71	0.96	
Empowerment	1.96	0.81		1.74	0.96	
Acceptance	1.83	0.81	0.000	1.69	0.96	
Controlled emotional involvement	1.81	0.79		1.62	0.89	0.022
Sharing knowledge	1.71	0.72	0.022	1.70	0.90	
Social justice	1.51	0.67		1.56	0.82	
The effort for the customer	1.51	0.64		1.74	0.98	
Confidentiality	1.46	0.74	0.04	1.43	0.78	
Professional responsibility	1.44	0.61		1.42	0.69	

The respondents from both countries emphasised that all the listed values are important, however, some of them are more significant. Lithuanian respondents found *choose* (LT M=2.06), *empowerment* (LT M=1.96) and *individualisation* (LT M=2.04) essential. Ukrainians justified Lithuanian choices, however, complimented the list with *efforts to help the client* (UK M=1.74). The respondents consider that the possibility of *choice* to operate freely, assessing the current situation, like *individualisation*, *empowerment*, are important values; however, statistical significance has not been noticed. The analysis of the survey results with regards to the age of the respondents implies that the respondents from different countries distribute the values differently. The results of the research have revealed the statistically significant difference in attitudes towards the values complying with differences in age of the respondents. Lithuanian respondents from two different age groups (46-55 years old and above 56) found the value of *knowledge sharing* important (LT M=1.79, M=1.83), which is verified by the statistically significant difference between the variables and age groups ($\chi^2=11.422$, $df=4$, $p\leq 0.022$); therefore, one may assert that sharing professional knowledge with others as well as transferring personal experience is sensible and important to senior people. Ukrainian respondents from senior groups also emphasised the importance of this value (UK M=1.80), however, the statistically significant difference has not been identified in their case. Another value accentuated by two different age groups from Lithuania was the value of *acceptance* (aged 26-35 M=1.97; aged 46-55 M=1.99) which has been supported by the statistically significant difference ($\chi^2=20.161$, $df=4$, $p\leq 0.000$). Ukrainian respondent of senior age also expected social workers to accept all people despite their social backgrounds or cultural differences (M=1.84, M=1.80). Lithuanian respondents did not find confidentiality very important, however, the importance of this value has been established by the statistically significant difference ($\chi^2=10.015$, $df=4$, $p\leq 0.004$). In regards to the different age groups, Lithuanian respondents did not accentuate the following values: *social justice*, *professional responsibility* or *efforts to help the client*. Aside from the afore mentioned values, in regards to the age groups, the respondents from both countries marked *empowerment* as an important value (LT aged 46-55 M=2.06, aged 36-45 M=1.98; UK aged 36-45 M=1.75, above 56 M=2.0). Ukrainian respondents from the youngest (under 25 M=1.80) and senior (above 56 M=1.80) groups accentuated the value of *efforts to help the client*, whereas among Lithuanian respondents this value was accentuated in the groups of young people (aged 26-35 M=1.57) and middle-aged (aged 46-55 M=1.58). The value of *controlled emotional involvement* seemed to be important to Ukrainian respondents and this has been confirmed by the statistical difference ($\chi^2=11.476$, $df=4$, $p\leq 0.022$). In regards to the age groups, the respondents from both countries agreed that afore

mentioned values are important in communication or dealing with problems as well as establishing interpersonal relations.

Conclusions

On the ground of the performed empirical research, the following can be stated:

- Both in Lithuania and the Ukraine, respondents cannot exactly say what social work is; Lithuanian respondents give priority to charity and home clearing activities, whereas Ukrainian respondents emphasise that this means provision of various services to abandoned and people with disabilities as well as representation of child rights in problematic families.
- Respondents do not divide competences to general, professional or specialised. For them it is important that social workers would have such abilities which enable them to successfully realise themselves in professional activities. Respondents acknowledge the values of social work and treat them as important; however, respondents of both countries understand and single out different values as seen after comparing their age groups. According to age groups, Lithuanian respondents consider the following values as more important: *acceptance, sharing of knowledge and confidentiality*; whereas Ukrainian respondents emphasise *controlled emotional involvement*. To respondents' opinions, psychological preparation for this work is among most important ones because the staff must work with various groups of clients. Moreover, knowledge of ethical principles, cultural knowledge enable the workers to perform their duties better when working with various ethnical, religious and cultural minorities.

The hypothesis *that it is likely that society has no clear vision on what are the characteristics of the content of professional activities of a social worker* raised at the beginning of the paper has been only partly proven. The answers of the respondents suggest that they do not know what social work is; but they identify certain content/functions of social worker's professional activities. They do not single out professional competences; however, they name the knowledge, abilities which are required for a social worker. They understand the values which are not attributed to general values but rather particularly oriented to a client, and know real material condition of a social worker, i.e. that this job is low paid.

References

- Ališauskienė, M., & Markauskaitė, G. (2014). Religinės įvairovės reprezentavimas Lietuvos internetinėje žiniasklaidoje. *Kultūra ir visuomenė*, 5 (1), 65–83.
- Cox, D., & Pawar, M. (2013). *International social work: issues, strategies, and programs*. Los Angeles; London: Sage.
- Dirgėlienė, I. (2013). Profesinio streso rizika socialinio darbo procese: supervizijos taikymo perspektyva. *Sveikatos mokslai*, 1, 31–36.
- DuBois, B., & Miley, K. K. (2014). *Social work: an empowering profession*. Boston: Pearson.
- Hepworth, D. H., Rooney, R. H., Rooney, G. D., Strom-Gottfried, K., & Larsen, J. (2010). *Direct social work practice. Theory and Skills*. USA: Brooks/Cole, Cengage Learning.
- Ivanauskienė, V., & Pakrijauskaitė, A. (2015). Tarptautinio socialinio darbo ypatumai: socialinės pagalbos teikėjų pabėgėliams ir prieglobsčio prašytojams Lietuvoje bei Švedijoje požiūris. *Tiltai*, 1, 141–155.
- Kavaliauskienė, V. (2010). Refleksijos kultūra – socialinio darbuotojo profesinės veiklos raiškos aspektas. *Acta Paedagogica Vilnensia*, 25, 159–171.
- Kiaunytė, A. (2008). Pokyčius patiriantys socialiniai darbuotojai: supervizijos taikymo galimybės. *Socialinis darbas*, 7 (2), 119–130.
- Makštutytė, R., & Vaškevičiūtė, L. (2011). Socialinio darbuotojo profesionalumas komunikacinės kompetencijos aspektu. *Socialinis darbas. Patirtis ir metodai*, 8 (2), 23-37.
- Pierson, J., & Thomas, M. (2010). *Dictionary of social work: the definitive A to Z of social works and social care*. Maidenhead: McGraw-Hill.
- Pivorienė, J., & Večerskytė, J. (2005). Socialinio darbo įvaizdis interneto svetainėse. *Socialinis darbas*, 4 (2), 132–141.
- Public Opinion and Market Research Company *Factus* (2013). Downloaded from: <http://www.factus.lt/main-calculator>
- Ruškus, J., & Kiaunytė, A. (2010). Socialinių darbuotojų elgsenos modelių identifikavimas sprendžiant profesinius konfliktus. *Filosofija. Sociologija*, 2, 112–121.
- Varžinskienė, L. (2008). Socialinio darbo profesijos statuso ypatumai socialinių darbuotojų ir jų partnerių požiūriu. *Socialinis darbas*, 7 (1), 100–107.
- Wagner, H. (2014). Socialinio darbo profesijos (ne)galia visuomenėje. *STEPP: socialinė teorija, empirija, politika ir praktika*, 9, 7–20.
- Максимов, Е. К. (2015). Концепция социальной работы с персоналом в современных условиях. *Интернет-журнал «Наукovedenie»*, 7 (2), 1–16. Downloaded from: <http://naukovedenie.ru/PDF/35EVN215.pdf>

COGNITIVE-BEHAVIORAL APPROACH AND THE ROLE OF PHYSICAL ACTIVITY IN THE TREATMENT OF MUSCULOSKELETAL PAIN IN ATHLETES

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Abstract. *The importance of a cognitive-behavioral approach is richly documented in world scientific literature. In the light of the current knowledge about the determinants of pain treatment, the significance of psychological factors for the course and effects of analgesic therapy becomes more comprehensible. Many psychological processes have an influence on both the experience of pain and the treatment outcome. The factors like cognitive interpretation of pain, level of activity and emotional states of musculoskeletal pain sufferers are very important.*

The research referred to in this work makes a part of a long-term research programme the subsequent stages of which are analysed based on the literature of the subject that can assist in interpreting the new findings within dependencies between psychological factors and functioning in the case of the persons who cope with pain. Integration of psychological findings about attitude to pain into physical therapy treatment would seem to have potential to enhance outcomes. In this work we are presenting the problem in a context i.e. in the context of a role of cognitive-behavioral approach approach. The purpose of the article is to present the role of cognitive-behavioral approach in the field of applications that aim at supporting people who are involved in sport activity and cope with musculoskeletal pain-related ailments.

Keywords: *cognitive-behavioral approach, pain treatment, health, physical activity.*

Introduction

Along with the biopsychosocial understanding of the phenomenon of pain in many cases pain cannot be reduced to a simple reflexive reaction. An assumption was made psychological attitude has a big impact, playing an active role in both pain treatment patients with musculoskeletal pain. Because psychological processes have an influence on both the experience of pain and the treatment outcome, the integration of psychological principles into physical therapy treatment would seem to have potential to enhance outcomes

(Linton & Shaw, 2011). In the literature of the subject within the last decades there have been many works from health psychology that concern the perspective

of a biopsychosocial model based on the corresponding research (Eccleston, 2001; Gallagher, 2006; Ortenburger et al., 2017). The biopsychosocial model includes the interaction between biological, psychological, social and cultural factors. Among these factors is cognitive attitude and level of physical activity. The process of pain consists of many stages. The psychic factors: cognitive interpretation of pain and emotional states of pain sufferers are very important. Cognitive and emotional factors have a surprisingly important influence on pain perception. The relationship between pain and emotions is multidimensional. Emotion (anxiety, fear, anger) can exacerbate the sensation of pain or can exist as the consequence of chronic pain. Anger can be the most difficult emotion and reaction to modify (Lisiecka et al., 2016).

Not only does experiencing pain make the result of interaction between sensory impression and emotional response to this reaction. Previous experience and emotional response of that experience also count here (e.g. if it was accompanied with the feeling of helplessness or if certain degree of control that something can be done in order to soothe discomfort was present).

Contemporary knowledge makes it obvious that there might be many factors influencing on an illness and on treatment. Research suggests that higher levels of self-reported physical activity are associated with more pain inhibition and less pain facilitation on quantitative sensory test in healthy adults (Naugle et al., 2017). Today's society needs educated and competent people who are able to make use of existing knowledge and are ready for further development, which includes the idea of perfection and progressive changes (Usca, 2016: 152).

This article refers to the research that was partly published in the work concerning the problematics of psychological strategies of coping with pain in a group of people practicing martial arts, during therapy due to muscular-skeletal pain caused by injuries during sport activity and other reasons (Ortenburger et al., 2016).

In this work we are presenting the problem in a wider context i.e. in the context of a role of cognitive and behavioural approach. The approach makes a common plane of influences in sport, including professional competitive sport, as well as in rehabilitation. That is why the aim of the article is to present the role of behavioural and cognitive approach in the field of applications that aim at supporting people who are involved in sport activity and cope with pain-related ailments (of muscular and skeletal character). The research referred to in this work makes a part of a long-term research programme the subsequent stages of which are analysed based on the literature of the subject that can assist in interpreting the new findings within dependencies between psychological factors and functioning in the case of the persons who cope with pain (especially sportsmen representing different fields of sport).

Cognitive-behavioural approach - selected assumptions and selected research studies

Cognitive-behavioural approaches to pain management are based on the assumption that a patient's thoughts, feeling, beliefs and behaviours are important (Crombez et al., 1999; Adams et al., 2008; Turk & Okifuji, 1994).

The biopsychosocial literature describes the phenomenon of reduction and even the reduction of pain that is referred to as post stress analgesia. The phenomenon of lowered or even reduced pain in the effect of stress present during fight (including fight of a sport character), referred to as post stress analgesia, is becoming more and more common in science. However, despite much research, certain mechanisms of this phenomenon have not been recognized yet.

Many research suggests that higher levels of self - reported physical activity are associated with more effective pain inhibition (Vlaeyen & Linton, 2012; Wąsik & Wójcik, 2017).

From the general- biological perspective the sense of post stress analgesia means the reduction of motion and affective reactions for the benefit of the ones that allow the body for overcoming immediate effects of stress such as e.g. pain. The biopsychosocial model assumes that the psychological processes of attention (processes of intentional management of attention) play a significant role in shaping the emotional reaction on pain. Generally speaking, due to the mechanisms of attention, filtration of information to consciousness is possible: attention can widen its scope or make it smaller, increase or decrease its intensity. One of the motives of martial arts practicing is eagerness (desire) of a better dealing with weaknesses and overcoming limitations. In the light of referential literature concerning health psychology, we may relate it to main types of beliefs and psychological strategies concerning individual abilities of coping with pain. Pain perception, together with cognitive-behavioral strategies of coping with pain, are under the influence of one's personality, physical activity level and temporary mediating variables (Ortenburger et al., 2016; Crombez et al., 2016; Vlaeyen & Linton, 2012). Coping with pain has been defined as intentional efforts to deal with the negative impact of particular this stressor (Eccleston, 2001; Gallagher, 2006; Gunnarsson, 2006).

In accordance with the literature about health psychology, there exist principal types of beliefs concerning individual abilities of coping with pain: they reflect how a man himself regards the possibilities of having influence on his own situation under the condition that pain is lowered (its intensity and frequency). The "W"- type beliefs and strategy is referred to as relying on oneself, one's internal possibilities of coping with ailments and pain. In the „L"- type beliefs regarding considerations over the possibilities of influencing the situation, there exists the dominance of health-related belief according which, first of all, medical

doctors have major influence on the situation and can reduce ailments (as for the intensity and frequency of pain). In the case of „P”- type beliefs of a particular person, there is the dominance of health beliefs that experience, mood, intensity and frequency of pain neither depend on doctors nor the person himself, but on accidental events and external effects (Ortenburger et al., 2016).

The Table1 describes: a) the main goals of the cognitive-behavioral method, such as the change in the perception of pain, the change of the patient's attitude to the problem (from that of passivity and helplessness to that of activity), or teaching the patient some of the more adaptive methods of coping with pain; b) stages of the cognitive-behavioral therapy (reconceptualization, gaining skills, consolidation of the skills gained, generalization and maintaining the skills, positive attitudes).

Table 1 Cognitive-behavioral to musculoskeletal pain - selected assumptions

From that of passivity and helplessness to that of activity in treatment of musculoskeletal pain - selected assumptions				
<i>Individualizing, setting goals</i>	<i>Active involvement in therapy</i>	<i>New skills, specifying steps to achieve goals</i>	<i>Self-efficacy expectancies in chronic pain</i>	<i>Perception of pain, thoughts, appraisal</i>
Individualizing the treatment to suit the client's (patients sportsman, other) needs. Reappraisal. Behaviour is reciprocally determined by both the individual and environmental factors.	Getting the client to play an active role in the treatment and accept some responsibility. Gaining skills, consolidation of the skills gained, generalization and maintaining the skills). Conscious way of living.	Participating to acquire new skills and participate in exercise programme. Teaching the patient some of the more adaptive methods of coping with pain.	Encouraging a client's self – efficacy. Increased behavioural activities. Individuals can learn more adaptive ways of feeling and behaving	The change in the perception of pain. Reconceptualization. Coping strategy: diverting attention, reinterpreting pain sensations, pain control, pain decrease. Thoughts can elicit and influence mood, affect physiological processes; Conversely, mood, physiology can influence the nature and content of thought processes.

Materials and methods

The paper compiles the results of research conducted in two groups that are considerably different in respect of their physical fitness (at the area of the Silesian Voivodeship in Poland). The first group was composed of 29 people who practise

taekwon-do (TDK), age average 30.5±8.9 years. In the sample group, the majority practise 2-3 times a week, some people practise once or twice a week, and almost the same number of people 4 or more times. The minority practise every day. The second group comprised 30 patients aged average 33.5±11.9 years (in City Polyclinical Hospital Czestochowa). Questionnaires used in psychology and health promotion and a self-made questionnaire including open and close question were applied in the study (Ortenburger et al., 2016). These measures concern cognitive and behavioural coping strategies that patients can use to help them manage pain. Adjustmen to the patients with chronic pain, or the ability to manage pain, can be measured using the Coping Strategies Questionnaire (Rosenstiel & Keefe, 1983).

Research Results

In the mentioned research, that is referred to in this work, the psychological factors of a cognitive character were examined as they perform a very important role in sportsmen’s approach to the challenge that is participating in trainings despite ailments. The obtained data underwent statistical analysis, including the measurement of the parameters of variability such as mean, and standard deviation (statistical significance at the level, $p < 0.05$). The obtained results are presented in tables 2-5.

Table 2 Strategies for coping with musculoskeletal pain (based on Ortenburger et al., 2016)

Explanatory variable	Athletes N=29		Patients N=30	
	Mean (I-36)	SD	Mean (I-36)	SD
W- type strategy	20.03	3.95	13.79	6.89
L -type strategy	10.87	4.09	11.71	5.02
P-type strategy	11.53	3.91	13.68	4.64

W - coping with the situation on one’s own, L - appeared, the strategy based on “trusting doctors”, P - experience, intensity and frequency of pain neither depend on doctors nor the individual.

The obtained data contained in Table 2 indicate that athletes use the active strategy to cope with pain on their own more frequently than others people, also demonstrate higher proactivity, which is a rather active strategy coping with pain.

Table 3 Proactivity (based on Ortenburger et al., 2016)

Explanatory variable	TDK N=29		Patients N=30	
	Mean (I-10)	SD	Mean (I-10)	SD
Proactivity	7.55	2.48	4.63	2.18

**Table 4 Proactivity and “W” - type strategy – taekwon-do group
(based on Ortenburger et al., 2016)**

Explanatory variable	Cluster 1		Cluster 2		Variance between clusters	Variance inside clusters	F	p
	Mean	SD	Mean	SD				
Proactivity	8.17	1.94	6.50	3.03	15,02	139,43	2,58	0,12
W-type strategy	22.35	1.69	15.60	2.36	287,70	94,33	73,19	0,00

W- coping with the situation on one’s own, appeared

**Table 5 Proactivity and “W”- type strategy – patients group
(based on Ortenburger et al., 2016)**

Explanatory Variable	Cluster 1		Cluster 2		Variance between clusters	Variance inside clusters	F	p
	Mean	SD	Mean	SD				
Proactivity	3.01	0.82	5.05	1.95	21,16	70,94	9,95	0,00
W-type strategy	6.10	3.07	18.05	4.05	918,86	363,84	65,66	0,00

W- coping with the situation on one’s own, appeared

In the research we have analyzed the way in which sportsmen and patients cope with ailments including muscular and skeletal pain. Such pain often appears in a group of people of a high level of physical activity, due to overtraining, injuries, and not enough regeneration.

Due to the fact that the obtained data are of self-descriptive character (they derive from questionnaires), the analysis was performed applying methods recommended for proceeding “non-acute” imprecise data that frequently appear in the humanities and health science. Explorative techniques that aim at identifying subgroups within multidimensional data collection were applied as well. Among others, cluster analysis with the use of k-means clustering was carried out. Thanks to the above, clusters that possibly differ from one another were identified (Table3) (Ortenburger et al., 2016). The obtained results indicate that within each examined group there are subgroups (clusters) that are different from one another with respect to an average result within the variable “proactivity” and the variable “W” - type strategy of coping with pain. The strategies were used by patients in chronic pain therapy and people performing taekwondo (Table 3). The research revealed that the values of other index of the analyzed strategies of dealing with pain do not differ considerably in the taekwondo group and in the group of patients. Strategy value index „L”: in the taekwondo group equaled 0,5 and in the group of patients covered by the pain treatment programme equaled 1,2. On one hand, the research proved that

taekwondo practitioners reveal higher proactivity than patients covered by the pain treatment programme and more often rely on themselves, trying to reduce ailments. They also attempt to limit the negative consequences of ailments on their own more often. On the other hand, both-patients and taekwondo practitioners use these active strategies to a different degree. Within the patients' group and within the taekwondo group the occurrence of smaller subgroups that differ from one another was identified. In summary, observational studies provide compelling evidence that regular physical activity and a high fitness level are associated with a reduced risk of musculoskeletal pain.

Pain cannot be eliminated from our life completely and there is no need for it, risk is part of many sports (Bakota et al., 2018; Wąsik, 2011; Wąsik & Gora, 2016). Every man tries to deal with it using, among others, different strategies that are more or less adaptive. However, for some people (due to their character) the process of adaptation to this may be more difficult (Turk & Okifuji, 1994). They pay a high price for it- they experience unpleasant psychosomatic disorders. One of positive factor is high level physical activity connected with positive mental attitude.

Conclusions

Cognitive-behavioral approach in the treatment of musculoskeletal pain in athletes requires further attention. Future research should pay careful attention to the outcome measures (objective measures of physical activity behavior), studies will be continued. The results indicated that light physical activity significantly predicted pain inhibitory function on the conditioned pain modulation test. Physical activity behavior predicts endogenous pain modulation (Naugle et al., 2017). Contemporary knowledge makes it obvious that there might be many factors influencing on an chronic musculoskeletal pain illness (Sogabe, 2013; Uher & Švedová, 2013). Looking at a man as a bio-psycho-social individual one must assume that all factors, including psychological factors, play a certain role and can make the element favorable for the increase of an illness or recovery. That is why it is so considerable for both: the course of an illness as well as treatment. There is also the dependency of a contradictory direction: psychological factors can have protective meaning, facilitating dealing with chronic pain and recovery.

References

- Adams, H., Thibault, P., Davidson, N., Simmonds, M., Velly, A., & Sullivan, M. J. (2008). Depression augments activity-related pain in women but not in men with chronic musculoskeletal conditions. *Pain Research & Management, 13* (3), 236–242.
- Bakota, D. (2017). Medallists of the Olympic Games from the Dąbrowa Basin (Southern Poland) in the period of communism (1944-1989). *4th International Multidisciplinary*

- Scientific Conference on Social Sciences & Arts SGEM 2017, Conference Proceedings, Book 2, Ancience Science, vol. II, Anthropology, Archaeology, History, Philosophy, Medieval & Renaissance Studies, Albena - Bulgaria, 285–291.*
- Crombez, G., Vlaeyen, J. W., Huets, P. H., & Lysens, R. (1999). Pain-related fear is more disabling than pain itself: evidence on the role of pain-related fear in chronic back pain disability. *Pain, 69*, 231–236.
- Eccleston, C. (2001). Role of psychology in pain management. *BJA: British Journal of Anaesthesia, 87*, 144–152.
- Gallagher, R. M. (2006). Pain intensity, emotional state, and personality trait: which comes first? *Pain Med., 7* (6), 471–472.
- Gunnarsson, H., Grahn, B., & Agerström, J. (2016). Increased deep pain sensitivity in persistent musculoskeletal pain but not in other musculoskeletal pain states. *Scandinavian Journal of Pain, 13*, 1–5.
- Linton, S. J., & Shaw, W. S. (2011). Impact of psychological factors in the experience of pain. *Physical Therapy, 91*, 700–711.
- Lisiecka, K., Cieślak, M., Kolisetska, A., Wyszomierska, J., Stachowicz, M., Ortenburger, D., Bakota, D., & Wąsik, J. (2016). Constructive and destructive methods of coping with anger at students-measurement trial in an international perspective. *Physical Activity Review, 4*, 200–203.
- Naugle, K. M., Ohlman, T., Naugle, K., Riley, Z., & Keith, N. (2017). Physical activity behavior predicts endogenous pain modulation in older adults. *Pain 158*, 383–390.
- Ortenburger, D., Rodziewicz-Gruhn, J., Wąsik, J., Marfina, O., & Polina (2017). Selected problems of the relation between pain-immunity and depression. *Physical Activity Review, 5*, 74–77.
- Ortenburger, D., Wasik, J., Bukova, A., & Gora, T. (2016). Comparison of strategies used by patients undergoing treatment for chronic pain people performing taekwon-do – a pilot study. *Ido movement for culture. Journal of Martial Arts Anthropology, 16* (3), 40–46.
- Sogabe, A. (2013). Influence of difference in knee alignment on site of pain and psychological state after long-distance walking. *Physical Activity Review, 1*, 1–9.
- Rosenstiel, A. K., & Keefe, F. J. (1983). The use of coping strategies in chronic low backpain patients: relationship to patient characteristics and current adjustment, *Pain, 7* (1), 33–44.
- Turk, D. C., & Okifuji, A. (1994). Detecting depression in chronic pain patients: adequacy of self-reports. *Behaviour Research and Therapy, 32*, 9–16.
- Uher, I., & Švedová, M. (2013). Long and prosperous life paradigm. *Physical Activity Review, 1*, 38–44.
- Usca, S. (2016). The Physical Balance of Adolescents and its Connection with Social and Emotional Balance. *Studia Paedagogica Ignatiana, 19* (4), 151–162.
- Vlaeyen, J. W., & Linton, S. J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on, *Pain, 153* (6), 1144–1147.
- Wąsik, J. (2011). Kinematics and Kinetics of Taekwon-do Side Kick. *Journal of Human Kinetics, 30*, 13–20.
- Wasik, J., & Gora, T. (2016). Impact of target selection on front kick kinematics in taekwondo – pilot study. *Physical Activity Review, 4*, 57–61.
- Wąsik, J., & Wójcik, A. (2017). Health in the context of martial arts practice. *Physical Activity Review, 5*, 91–94.

ĀRSTNIECĪBAS PERSONU TIESISKĀ INFORMĒTĪBA KĀ KVALITATĪVĀS DARBĪBAS PAMATNOTEIKUMS DARBĀ AR NEPILNGADĪGIEM PACIENTIEM

Medical Personnel's Legal Awareness as the Key of Principal Quality of Work with Minor Patients

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Abstract. Nowadays increasing attention is paid to the issues of the relationships between minor patients and medical personnel. There are several problematical issues in relationships mentioned above and one of the most significant is the legal regulation awareness of people providing medical services. The aim of the study is to make evaluation of the legal knowledge of medical personnel who work with minor patients and find out the main problems medical personnel deal with in particular area. Material and methods: the first group consisting of 70 medical personnel completed the questionnaire about knowledge of legal regulations by medical personnel. As the result the participants possess the low level of knowledge in providing information to minor patients about their health status. Insufficient knowledge is resulting in low quality of legal perspective of provided services. And this fact puts medical personnel at risk of being liable for breaching the laws.

Keywords: minor patients, medical personnel's awareness, patient's rights.

Ievads

Introduction

Jautājums par ārstniecības personu tiesisko informētību pēdējos gados kļūst aizvien aktuālāks. Ar ārstniecības personu tiesisko informētību jāsaprot ārstniecības personu apgādātības līmenis ar tiesiskā, proti, tiesību normās noteikta, rakstura informāciju. Jāatzīmē, ka problēmas un neskaidrības ārstniecības personu vidū lielā mērā rodas attiecībā uz tiesiskās informētības jautājumiem darbībā ar nepilngadīgiem pacientiem. Starp ārstniecības personu nerealizētajām tiesiskī - sociālajām problēmām attiecībā uz veselības aprūpes sniegšanu nepilngadīgiem pacientiem biežāk tiek iezīmēts praktiskā rakstura jautājums par nepilngadīgo personu tiesību ievērošanu to ārstniecības procesā. Minētais norāda uz iespējamiem trūkumiem ārstniecības personu izglītības līmeņa kvalitātes sistēmā attiecībā uz noteikta rakstura informācijas apgūšanu.

Lai nodrošinātu kvalitatīvāku un veiksmīgāku ārstniecības personu darbību, kas skar nepilngadīgo pacientu ārstēšanu ir nepieciešamas izmaiņas specifisku zināšanu apguves sistēmā, kas no vienas puses aptver teorētiskā rakstura problemātikas apskatu, savukārt no otrās puses ietvertu sevī praktiskās informācijas kopumu, kas balstīta uz judikatūru, augstskolu pedagoģisko pieredzi, spēkā esošajiem normatīvajiem aktiem, Eiropas Cilvēktiesību tiesas spriedumiem, kā arī valstī notiekošajām tiesiskā rakstura pārmaiņām attiecībās starp ārstniecības personām un nepilngadīgiem pacientiem.

Pētījuma tēmas aktualitāti nosaka vairāki faktori. Pirmkārt, aizvien biežāk sabiedrībā parādās jautājumi par pacientu, tai skaitā nepilngadīgo pacientu tiesību ievērošanas problēmām, kur sabiedrība norāda uz ārstniecības personu zemu zināšanu līmeni tieši pacientu tiesību ievērošanas un realizācijas jomā. Otrkārt, ārstniecības personu tiesiskās informētības jautājums kļūst par vienu no jautājumiem, kas arvien biežāk tiek apspriests Eiropas Savienības līmenī.

Papildus jānorāda, ka mūsdienās, ir vērojams progress medicīnas tiesību attīstības jomā. Par to liecina Latvijas Republikas tiesās un Veselības inspekcijā iesniegto pieteikumu, sūdzību skaits. Tā, piemēram, jautājumā par veselības aprūpes kvalitāti sabiedrības aktivitāte augt ik gadu. Par to liecina Valsts veselības inspekcijas statistika par saņemto pacientu sūdzību skaitu par veselības aprūpes kvalitāti. (Veselības inspekcijas 2014., 2015., 2016. gada publiskie pārskati). Uz medicīnas tiesību progresu pēdējos gados norāda arī izmaiņas vairāku augstskolu izglītības iestāžu programmās, piemēram, tiesību zinātņu programmas ar studiju kursiem, kuros tiek skatītas tēmas par pacientu un ārstniecības personu tiesībām un pienākumiem. No vienas puses minētais norāda ne tikai uz sabiedrības informētības līmeņa paaugstināšanu, bet arī uz sabiedrības aktivitātes pieaugumu attiecībā uz savu tiesību aizstāvēšanu. No otras puses tas arī rāda zināmu spriedzi, piemēram, ārstniecības personu un pacientu attiecībās.

Šī pētījuma mērķis ir sniegt ieskatu ārstniecības personu tiesiskajā informētības līmenī, kas ir svarīgs kvalitātes darbības pamatnoteikums darbā ar nepilngadīgiem pacientiem.

Pētījuma objekts ir tiesību normas un attiecīgi radušās tiesiskā rakstura attiecības, kas saistītas ar ārstniecības personu tiesisku informētību darbā ar nepilngadīgiem pacientiem.

Pētījuma izstrādes gaitā tika izmantotas tādas izpētes metodes kā, zinātniskās literatūras apkopošana un analīze, salīdzināšanas metodes, vēsturiskā un izziņas metode.

Jēdziena “informācija” raksturojums un ārstniecības personu tiesiskās informētības būtība

Definition of “information” and the essence of medical personnel’s legal awareness

Tiesiskās informētības jēdziena būtība ir normatīvajos aktos noteiktā rakstura informācijas pieejamība attiecīgajām sabiedrības grupām. Pētījuma kontekstā jānorāda tieši uz ārstniecības personu apgādātības līmeni ar tiesību normās noteikto kārtību, kas regulē ārstniecības personu un nepilngadīgo pacientu attiecības.

Pētot jautājumu par tiesiskā rakstura informācijas pieejamību ārstniecības personu vidū, tika izpētīts vārda “informācija” jēdziens. Minētais jēdziens ir ārkārtīgi plašs, un, izpētot tā būtību, secināms, ka jēdziena definīcija tiek sadalīta vairākās daļās, atkarībā no tās lietošanas mērķa. Neskatoties uz ļoti plašu jēdziena “informācija” lietošanu tā izpratne arī mūsdienās izraisa lielas diskusijas zinātnē. Zinātnieku vidū ir arī viedoklis, ka jēdziena “informācija” definīcija nevar pastāvēt, ņemot vērā šā termina plašumu un apjomu (Моисеев, 1995). Savukārt jāatzīmē, ka tomēr jēdziena “informācija” universālai definīcijai ir jāpastāv, jo tai ir ārkārtīgi svarīga loma vairāku, ne tikai tiesiska rakstura procesu veidošanā. Ņemot vērā minēto, turpmāk tiks analizētas vairākas termina “informācija” definīcijas, lai sniegtu ieskatu minētā jēdziena nozīmīgumā, veidojot izpratni par tā izmantošanu ārstniecības personu tiesiskās informētības kontekstā.

Termins “informācija” (lat. Informatio) ir nācis no latīņu valodas. Viens no izplatītākajiem šā termina skaidrojumiem ir “izskaidrojums”, jeb “zināšanu kopums”, kas tiek nodots no viena cilvēka otram, gan rakstveidā, gan mutiski vai kā savādāk (Mūsdienu latviešu valodas vārdnīca, LU Latviešu valodas institūts, I. Zuicena).

Vienlaikus, ar informāciju saprot arī datu nodošanu vai saņemšanu. Vēlāk, paplašinot šo izpratni, par zināšanu kopuma nodošanu saka runāt ne tikai kā par to nodošanu no viena cilvēka otram, bet arī nodošanu starp iestādēm, ierīcēm utt. (English Oxford living Dictionary). Literatūrā sastopamā arī šāda “informācijas” definīcija. Informācija – ir zināšanas par apkārtējo pasauli, kā arī par tajā norietošiem procesiem, kurus nodrošina cilvēks vai speciālas ierīces (Ожегов, 1989).

Latvijas Zinātņu akadēmijas akadēmiskajā terminu datubāzē var atrast arī sekojošu jēdziena “informācija” skaidrojumu. Informācija tiek definēta kā vispārīgas ziņas, kas komunikācijas procesā sniedz zināšanu vairošanu.

Informācija tiek definēta arī kā detaļas, kas kaut ko izskaidro. Fakti vai apstākļi, kas sniedz zināšanas attiecīgajā jomā.

Tādejādi, apkopojot vairāku termina “informācija” skaidrojumus autore piedāvā savu redzējumu uz termina “informācija” definīciju. Informācija ir

zināšanu kopums, kuru iegūst no dažāda veida avotiem, ar mērķi veicināt sabiedrības attīstību un pilnveidošanu dažādās jomās. Minētais norāda uz to, ka informācijai kā tādai ir ārkārtīgi svarīga loma jebkurā darbības laukā. Tā palīdz attīstīt jau izveidojušos procesus vai izzināt jaunus. Tas attiecināms arī uz ārstniecības personu darbības lauku attiecībā uz nepilngadīgiem pacientiem.

Ārstniecības personu pārziņā esošā informācija ir priekšnoteikums kvalitatīvā pakalpojuma sniegšanai. Taču, kā tika minēts iepriekš, informācijas jēdziens ir plašs. Svarīgs aspekts pētījuma ietvaros ir ārstniecības personu tieši tiesiskās informācijas apguve, jeb tiesiskā informētība.

Pētot ārstniecības personu tiesiskās informētības līmeni, tika izpētīta (kontekstā ar jēdziena "informācija" skaidrojumu) arī jēdziena "informētība" nozīme. Informētība tiek definēta kā informācijas, zināšanu esamība kādas tēmas ietvaros (Ожегов,1992). Cits termina skaidrojums norāda uz to, ka informētība ir situācijas izpratne, kas balstīta uz zināmu pieredzi, kas savukārt tiek piemērota attiecīgu situāciju risināšanas procesā. Vai arī konkrētas jomas zināšanu iegūšana (Cambridge Business English Dictionary).

Tiesiskās informētības būtība izriet no jēdzieniem "informācija", "informētība" un "tiesiskums". Taču atkarībā no jēdziena "informācija", t.sk. "informētība", kura skaidrojums ir pieejams dažādos avotos (Latvijas normatīvajos aktos, Eiropas Savienības tiesību aktos un zinātniskajā literatūrā), tiesiskās informētības jēdziens nav definēts. Tādējādi, ir jāpievēršas tiesiskās informētības definīcijai, uzmanību galvenokārt veltot tiesiskuma nozīmei. Vārdu "tiesiskums" mūsdienās saprot ar atbilstību likumam vai noteikumiem (English Oxford living Dictionary). Tiesiskums nozīmē arī sociālās dzīves parādību (tiesību subjektu darbības vai tās rezultātu) atbilstību prasībām, kas noteiktas valstī noteiktajos normatīvajos aktos. Tiesiskums šajā gadījumā tiek ietverts ne tikai tiesību subjektu darbībā, bet arī juridiskajos (tiesiska rakstura) dokumentos. Tiesiskums izslēdz jebkādas novirzes no normatīvo aktu ievērošanas (Сухарев, et.al., 2003.).

Eiropas Komisijas 2014.gada 11.marta paziņojumā Eiropas Parlamentam un Padomei norādīts, ka "tiesiskums ir jebkuras modernas konstitucionālas demokrātijas pamatā. Tas ir viens no pamatprincipiem, kas izriet no visu ES dalībvalstu kopējām konstitucionālajām tradīcijām, un kā tāds – viena no galvenajām vērtībām, uz kā balstās Savienība." To apstiprina ne tikai Līguma par Eiropas Savienību 2. pants, bet arī līguma preambulas un ES Pamattiesību harta. Tā, piemēram, saskaņā ar Līguma par Eiropas Savienību 49. pantu tiesiskuma ievērošana ir priekšnosacījums dalībai Eiropas Savienībā. Tiesiskums līdzīgi kā demokrātija un cilvēktiesības ir viens no trim Eiropas Padomes balstiem, kas nostiprināti Eiropas Cilvēktiesību konvencijas preambulā. Eiropas Komisijas 2014.gada paziņojumā Eiropas parlamentam un padomei norādīts, ka tiesiskums ir juridiski saistošs konstitucionāls princips. Tas vienbalsīgi ir atzīts par vienu no

pamatprincipiem, kas pastāv visu Eiropas Savienības dalībvalstu konstitucionālajās sistēmās. Bet, protams, jāatzīmē, ka tiesiskuma standarti un no tiesiskuma izrietošo principu kopums, vērtību saraksts var atšķirties valstu līmenī.

Vienlaikus, Venēcijas komisija savā 2011. gada 4.aprīļa ziņojumā par Pētījumu Nr. 512/2009 (CDL-AD(2011)003rev) noteica vairākas tiesiskuma pazīmes, starp kurām tai skaitā ir arī likumība.

No augstāk norādīta secināms, ka apkopojot terminu “informācija”, “informētība” un “tiesiskums” jēdzienu skaidrojumus, veidojas lakoniska tiesiskās informētības definīcija. Tiesiskā informētība ir normatīvajos aktos noteiktas informācijas par tajos iestrādāto prasību ievērošanu un attiecīga rakstura zināšanu apguve, kā arī to piemērošana un tālāk nodošana.

Tiesiskās informētības būtība ir ne tikai pienākums zināt un ievērot normatīvajos aktos noteiktas prasības, bet arī piemērot iegūtas zināšanas, lai uzlabotu un pilnveidotu konkrētas jomas darbību. Proti, ārstniecības personu tiesiskā informētība nozīme ārstniecības personu pienākumu nepārtraukti veicināt savu, kā profesionāļu tālāk izglītošanu ar mērķi pilnveidot zināšanas tiesību jomā. Jo ārstniecības personu un nepilngadīgo pacientu sadarbības pamatā ir ne tikai medicīniskā rakstura dokumentu un normatīvo aktu kopums, bet arī normatīvie akti, kas nosaka pušu tiesības un pienākumus, tai skaitā aizsargā nepilngadīgo pacientu fundamentālās tiesības, piemēram, tiesības uz veselību un dzīvību. No ārstniecības personu tiesiskās informētības līmeņa ir atkarīgs ne tikai pats ārstēšanas process, bet tā kvalitāte un tajā iesaistīto personu tiesību ievērošana.

Tiesiskās informētības loma ārstniecības personu un nepilngadīgo pacientu attiecībās

The importance of legal awareness in relations between Medical personnel and minor patients

Saskaņā ar Latvijas Republikas Pacientu tiesību likumā noteikto Nepilngadīgais patients līdzīgi kā pilngadīgais pilsonis, ir apveltīts ar noteiktā rakstura tiesībām vērsties pēc medicīniskā rakstura palīdzības, kā arī saņemot to. Nepilngadīgo pacientu ārstēšanas specifika ir saistīta ar šo pacientu tiesību realizācijas nodošanu viņu likumiskiem pārstāvjiem, kā arī ārstniecības personām, kas piedalās ārstniecības procesā.

Runājot par nepilngadīgo pacientu tiesībām, jāmin tādas tiesības kā tiesības tikt uzklautam un atbilstoši savam vecumam un briedumam piedalīties ar ārstniecību saistītā lēmuma pieņemšanā, tiesības saņemt no ārstniecības personas savam vecumam un briedumam saprotamu informāciju utt. (Pacientu tiesību likums). Kopumā, jautājums par iepriekš norādīto nepilngadīgo pacientu tiesību ievērošanu tiek aktīvi skatīts Eiropas Savienības dalībvalstu līmenī.

Tiesībām, ar kuru palīdzību ārstniecības personas nodrošina nepilngadīgo pacientu tiesību ievērošanu ir liela loma. Minēto tiesību zināšanas no ārstniecības personas puses ir arī pamatnoteikums ārstniecības personu profesionālās uzvedības nodrošināšanai un īstenošanai. Jāatzīmē, ka ārstniecības personu tiesiskā informētība ir maz pētīts un diezgan komplicēts jautājums.

Ir nepārprotami skaidrs, ka nepieciešams veikt ārstniecības personu darbības medicīniski tiesisko analīzi, kurā īpaša uzmanība jāvelta nepilngadīgo pacientu, viņu likumisko pārstāvju mijiedarbībai ar ārstniecības personām un no tās izrietoša sniegtā pakalpojuma kvalitāti. Veicot attiecīgo analīzi jāidentificē likumsakarība starp pakalpojuma saņēmēja, t.i. nepilngadīgo pacientu (arī likumisko pārstāvju) apmierinātību ar pakalpojuma kvalitāti un pakalpojuma sniedzēju, t.i. ārstniecības personu tiesisku informētību jautājumā par nepilngadīgo pacientu tiesību ievērošanu un realizēšanu.

Jāatzīmē, ka pamatproblēmas, runājot par ārstniecības personu tiesiskās informētības līmeni jautājumā par nepilngadīgo pacientu tiesību ievērošanu, rodas tai skaitā arī nepilngadīgo pacientu likumisko pārstāvju vājas informētības dēļ. Kā rezultātā arī ārstniecības personu motivācijas līmenis realizēt nepilngadīgo pacientu tiesības praksē samazinās.

Ārstniecības personu tiesiskās informētības līmeņa praktiskā analīze *Practical analysis of the level of legal awareness of medical personnel's*

Lai identificētu ārstniecības personu tiesiskās informētības līmeni, jeb informācijas par nepilngadīgo pacientu tiesību realizēšanu un tās zināšanu līmeni, 2018. gada janvārī tika veikta pirmā aptauja, kurā tika noskaidrots ārstniecības personu informētības līmenis attiecībā uz nepilngadīgo pacientu tiesību realizāciju. Aptaujā piedalījās 70 ārstniecības personas no Rīgas plānošanas reģiona, kas strādā gan valsts, gan pašvaldības, gan arī privātajās medicīnas iestādēs. Tikai 28 no 70 ārstniecības personām spēja nosaukt normatīvo aktu, kurā noteiktas nepilngadīgo pacientu tiesības. Un no tām tikai 9 varēja norādīt konkrētas (ne visas) nepilngadīgo pacientu tiesības. Papildus jānorāda, ka tikai 8 respondenti sniedza pareizu atbildi uz jautājumu par to, no cik gadu vecuma nepilngadīgais patients var lemt par savu ārstniecību.

Aptaujas rezultāti parādīja, ka, piemēram, kritiski zems informācijas līmenis respondentiem ir par nepilngadīgo pacientu tiesībām atteikties no ārstniecības, vai arī sniegt savu piekrišanu ārstniecībai. Papildus jāatzīmē, ka tikai 7 ārstniecības personas spēja sniegt pareizo atbildi par nepilngadīgo pacientu likumisko pārstāvju tiesībām pieņemt lēmumus par nepilngadīga pacienta ārstniecību. Būtiski ir tas, ka tikai 41 respondents bija informēts par nepilngadīgo pacientu tiesībām iepazīties ar informāciju, kas saistīta ar ārstniecības procesu un medicīniskā rakstura dokumentāciju. Aptaujas rezultātā tika konstatēts, ka paši

respondenti augsti novērtē savu zināšanu līmeni jautājumā par normatīvajos aktos noteiktajām pacientu tiesībām. Aptaujas rezultāti parādīja, ka tikai 26 respondenti no 70 strādājot ar nepilngadīgiem pacientiem, kas sasnieguši 14 gadu vecumu, lūdz nepilngadīgā pacienta atļauju attiecībā uz lēmumu viņa ārstēšanu.

No iepriekšminētā secināms, ka ārstniecības personu vidū pastāv tiesiskās informētības problēma attiecībā ar nepilngadīgiem pacientiem. Vairāku iemeslu dēļ, nesāņemot pietiekošo informācijas apjomu, ārstniecības personas neapzināti diskreditē nepilngadīgo pacientu tiesības, tai skaitā arī rupji pārkāpj normatīvajos aktos noteikto regulējumu. Ārstniecības personu nepieciešamās informācijas trūkums veicina nepilngadīgu pacientu pamattiesību pārkāpšanu, kas ir ne tikai valsts līmeņa, bet arī starptautiskā līmeņa jautājums.

Lai sekmētu ārstniecības personu tiesiskās informētības uzlabošanu ir jāveic virkni praktiskā rakstura pasākumu, tai skaitā problēmjautājumus jārisina tādos līmeņos kā – valsts, pašvaldības, kā arī nevalstisko organizāciju (piemēram, Latvijas Ārstu biedrība utt.) līmenī, īpašu uzmanību pievēršot izglītības sistēmai, tālāk apmācības mehānismam un attiecīgo tēmu par nepilngadīgo pacientu tiesībām iekļaušanu organizāciju, augstskolu utt, apmācību, konferenču, semināru utt. darba kārtībā.

Secinājumi **Conclusions**

1. Latvijā nav attīstīts ārstniecības personu tiesiskās informētības jēdziens, kas ir ļoti svarīgas jebkuras ārstniecības personas darbībā.
2. Ārstniecības personu tiesiskās informētības problēma tiešā mērā aizskar nepilngadīgo pacientu pamattiesības.
3. Lai nodrošinātu ārstniecības personu tiesiskās informētības uzlabošanu, ir jāuzsāk nopietns darbs pie izglītības sistēmas pilnveidošanas, sagatavojot jaunas paaudzes speciālistus – ārstniecības personas.
4. Nepieciešams nodrošināt iespēju esošajām ārstniecības personām, kā arī medicīnas fakultāšu studējošiem iegūt zināšanas medicīnas tiesību jomā, tai skaitā uzsvaru liekot uz pacientu, nepilngadīgo pacientu tiesībām.
5. Ir jāapzinās ārstniecības personu tiesiskās informētības nozīmīgumu darbā ar nepilngadīgiem pacientiem. No ārstniecības personām tiešā veidā ir atkarīga nepilngadīgo personu fundamentālo tiesību nodrošināšana un ievērošana atbilstoši Latvijas, kā arī starptautiskiem tiesību avotiem.
6. Pacientu tiesību likumā ir atrunātas nepilngadīgo pacientu tiesības, taču, to piemērošana praksē ir grūti izprotama. Normatīvajā aktā ir neskaidri atrunāta ārstniecības personu loma nepilngadīgo pacientu tiesību ievērošanā. Tādejādi, ne vienmēr pastāv iespējas sniegt atzinumu par ārstniecības personu darbības atbilstību Pacientu tiesību likuma normām.

7. Gan ārstniecības personu vidū, gan arī sabiedrībā nepieciešams rīkot tematiskās diskusijas par problēmas aktualitāti, īstenot sociālās kampaņas. Ārstniecības personu tiesiskā informētība darbā ar nepilngadīgiem pacientiem ir svarīgs kvalitatīvas darbības pamatnoteikums, taču jāapzinās, ka nepilngadīgo pacientu likumisko pārstāvju un sabiedrības informētība kopumā var veicināt jautājuma ātrāku risināšanu.

Summary

The issue of medical personnel's legal awareness in recent years has become topical. The legal awareness of medical personnel shows how informed are medical professionals in the field of legal issues. It should be noted that the problems and uncertainties among medical personnel and patients mostly arise due to legal awareness issues with minor patients.

Often, the most important problem regarding the relationships between medical personnel and minor patients is marked by the practical questions of the rights of minors in the process of treatment. This illustrates the quality of medical personnel's educational system in relation to the acquisition of certain kind of legal information. In order to ensure better and more successful treatment system of minor patients, changes in the system of specific knowledge acquisition are needed.

On the one hand big attention must be paid to the theoretical problems of medical personnel's level of information, on the other hand attention must be paid to the practical information based on case law, the pedagogical experience, applicable laws and regulations, judgments of the European Court of Human Rights, as well as legal changes on the state level in relations between medical practitioners and minor patients. The aim of this article is to provide a small insight to the level of legal awareness of medical personnel, which is an essential framework for high quality work with minor patients.

It is important to research some key meanings and definitions, such as "information" and "legal awareness" that will provide and will help to understand the main idea of the article. The essence of the legal awareness of medical personnel is the availability of information of the nature specified in regulatory enactments to the relevant groups of the society.

Summarizing several explanations of the term "information", the author presents her vision for the definition. Information is a collection of knowledge from different sources, with the aim to promote and develop, and also improve the society in different fields. It shows that information plays a vital role in any field of activity. It helps to develop existing processes or to discover the new ones. This also applies with regards to medical personnel's legal awareness in the work with minor patients. The legal awareness of medical personnel's is a prerequisite for the provision of a quality service for minor patients. The author provides as well the definition of medical personnel legal awareness. Legal awareness is a set of information provided in the legal regulations in compliance with requirements and the acquisition of appropriate knowledge, as well as their application and transfer. The idea of legal awareness is not just the obligation to know and comply with the requirements specified in legal documents, rules, regulations, but also to apply the acquired knowledge in order to improve particular field. Namely, legal awareness is an obligation for medical personnel to continuously promote their further education in order to improve their knowledge in the field of law. The cooperation between medical personnel and minor patients is based not only on a set of documents and medical nature legislation, but also on rules and regulations which determine the rights and

obligations of the parties, including the fundamental rights of minor patients, such as the right to the health and life that must be protected. The level of medical personnel's legal awareness depends on how important for them are the rights of those who are involved in the process. A minor patient, like an adult has the rights to receive not just qualitative medical care, but also professional attitude to the minor patients' rights protection. There is an existing problem of legal awareness among medical personnel in relation with minor patients. Medical personnel doesn't know specific information about minor patients' rights and thus cannot protect the minor patients' rights providing health care services. The lack of necessary information promotes violations of the fundamental rights of minor patients from the medical personnel side which is not only a national, but also an international issue. A number of practical measures have to be taken in order to improve the legal awareness of medical personnel in particular field. But the main one is to improve the education system by the means of preparing a new generation of medical personnel with the better legal awareness and to develop the educational program not only on the university level, but also in non-governmental, private and public sectors.

Literatūra References

- Cambridge Business English Dictionary*, Downloaded from <https://dictionary.cambridge.org/dictionary/english/awareness>
- Dictionary of Law* v1.0. Peter Collin Publishing 1999 - EC Translation Service-Terminology and Language Support Services, June 1996 Downloaded from <http://iate.europa.eu/SearchByQuery.do>
- Eiropas Komisijas 2014. gada 11. marta paziņojums Eiropas Parlamentam un Padomei*. Downloaded from <http://eur-lex.europa.eu/legal-content/LV/TXT/PDF/?uri=CELEX:52014DC0158&from=LV>
- Eiropas Cilvēktiesību konvencijas preambula, Eiropas Padomes Statūtu 3 .pants*. Downloaded from <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/001>
- English Oxford living Dictionary*. Downloaded from <https://en.oxforddictionaries.com/definition/information>
- English Oxford living Dictionary*. Downloaded from <https://en.oxforddictionaries.com/definition/legitimacy>
- Latvijas Zinātņu akadēmijas akadēmiskā terminu datubāze*. Downloaded from <http://termini.lza.lv/term.php?term=inform%C4%81cija&lang=LV>
- Līguma par Eiropas Savienības darbību konsolidēta versija*. Downloaded from <http://eur-lex.europa.eu/legal-content/LV/TXT/?uri=celex%3A12012E%2FTXT>
- Mūsdienu latviešu valodas vārdnīca*, LU Latviešu valodas institūts, Red. Dr. philol. I. Zuicena. Downloaded from: <http://www.tezaurs.lv/mlvv/>
- Pacientu tiesību likums*. Downloaded from <https://likumi.lv/doc.php?id=203008>
- Veselības inspekcijas 2014., 2-15., 2016., gada publiskie pārskati*. Downloaded from <http://www.vi.gov.lv/lv/sakums/publikacijas-un-statistika>
- Сухарев, А. Я., Крутских, В. Е., & Сухарева, А. Я. (2003). *Большой юридический словарь*. М.: Инфра-М.
- Моисеев, Н. Н. (1995). *Современный рационализм*. М.: МГВП КОКС, 376 с.
- Ожегов, С. И. (1989). *Словарь русского языка*. М.: «Русский язык» б 4-е изд. с.375.

WORKLOADS OF YOUNG SOCCER PLAYERS

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Abstract. *The purpose of this study is to present a comparison of the workload demonstrated by young soccer players during the phases of warm-up (WU), first half (FH) and second half (SH) of a league match. Eleven young Polish soccer players took part in this research, playing a league match after completing the WU. During the WU, FH and SH of the match the following variables were recorded: total distance run, maximal and average speed achieved during the runs, number of sprints, distances run in the different speed zones, durations of increased heart rate (HR) in specific ranges, and the maximal, mean and minimal HR. The variables were recorded by means of the Global Positioning System (GPS). The research showed that there were significant differences between the WU, FH and SH in the total distances run ($F=30.107$, $p<0.001$), the average speed achieved during the runs ($F=37.731$, $p<0.001$), the distances run at different speeds ($p<0.001$), the duration of increased HR in specific zones, and HR_{mean} ($p=0.002$) and HR_{min} ($p<0.001$). Post hoc analysis confirmed that, for the majority of the analyzed parameters, the WU provided a smaller load for the body than did the FH or SH, the intensity of which in some part was higher than that encountered at the anaerobic threshold. In conclusion, it has been shown that the WU and the two halves of the match load the body to varying degrees, the former doing so to a lesser extent than FH or SH.*

Keywords: *heart rate, running load, soccer.*

Introduction

Previous studies using computer software for recording physical activity and physiological responses to soccer players' workloads during training and matches have determined that the distances run by a high-class soccer player during a soccer game can vary from 9 to 13 kilometers. However, it is covered at a level of low-intensity effort, using the relatively small amounts of energy required for walking or jogging (Rampinini et al., 2007). A high-intensity run (sprint) occurs less frequently (Di Salvo et al., 2010). However, the number of runs at a high-intensity loading (around 24 km/h) differs significantly between the initial and final parts of the match (Bradley et al., 2009). A single sprint usually lasts no longer than 5 seconds (Andrzejewski et al., 2013). When matches are being won, central defenders perform fewer sprints and the forwards perform significantly more, compared to matches that are being lost (Bradley et al., 2013). The ability to perform at and sustain a level of high intensity effort is a distinguishing characteristic of players in terms of their physical performance during match conditions. On the other hand, it has been observed that having better technical skills means that the distance covered at high intensity or in a sprint becomes smaller (Di Salvo et al., 2009). A similar relationship was observed by Bradley, Noakes et al. (2013), who showed that soccer players of the worst-ranked teams (relegated to a lower division for the next season) covered during matches a greater distance at the level of high-intensity effort than players of the best-ranked teams (promoted to a higher division for the next season), despite the fact that their physical condition was similar. Rampinini et al. (2007) observed increased running activity of a professional soccer team in matches against better opponents.

An important indicator characterizing the match activity of soccer players, apart from the variation in distances run at different speeds, is heart rate (HR). Analyzing the workloads of young players, Capranica et al. (2001) observed that during 85 % of a match HR fluctuated within 170 bpm. The players' workload should theoretically be similar in both halves of a match and to this element of the physical stresses of a match researchers have attached a lot of importance. Relatively less attention from the research point of view has been attached to the pre-match warm-up (WU); it is also the case that coaches and players themselves do not always pay enough attention to this part of competitive sport preparation. Most frequently the WU is considered to be an element of anti-traumatic prophylaxis (Pilis et al., 2017), and its versatile potential for preparing the body for the coming loads of a submaximal, maximal and supramaximal intensity is forgotten (Sander et al., 2013). However, as an example of thinking more creatively about the WU, it has been found that using the Pilates program during a WU may improve muscular balance and correct the body posture of athletes (Horbacz et al., 2013). The above data was collected by numerous authors using

technologically advanced devices that are at the beginning to be widely available and that is why it is possible to register training loads even in smaller soccer centers and also among young soccer players.

Recognizing the importance of both the warm-up and the main part of the match, the present study was constructed to compare the running load and body response in terms of heart rate of young soccer players during the warm-up, first and second halves of a league match.

Material and Methods

Eleven young Polish soccer players (18.03 ± 0.27 years; 69.15 ± 4.72 kg; 177.61 ± 4.96 cm), members of the central professional juniors' league, participated in the study. Recording of the somatic workload was conducted during the warm-up (WU), first half (FH) and second half (SH) of a match. The WU was performed in such a way that its duration was equivalent to either half of a match, with static and stretching exercises in the first stage, after which running exercises of increasing intensity were introduced. During the WU, FH and SH the following variables were recorded: total distance run, maximal and average speed during the runs, number of sprints, distances run at different speeds, durations of effort at specific HR zones, and maximal, average and minimal HR values, both absolute and relative. The durations of effort at specific HRs were recorded in five ranges (zones): (I) 50-59 % HRmax; (II) 60-69 % HRmax; (III) 70-79 % HRmax; (IV) 80-89 % HRmax; (V) 90-100 % HRmax. The distances covered were also recorded in five speed run ranges (zones): (1) 3.00-6.99 km/h; (2) 7.00-10.99 km/h; (3) 11.00-14.99 km/h; (4) 15.00-18.99 km/h; (5) 19.00 km/h and above. The recording of these parameters was made possible by using the Global Positioning System (GPS, Polar Team Pro Finland - Sensor GPS (10Hz), MEMS Motion Sensor (200 Hz), which was attached to the skin of each player's chest. The parameters were read using Polar Team Pro.

The study was conducted with the permission nr KB-1/2013 of Ethical Committee of Jan Długosz University in Częstochowa.

The arithmetic means and standard deviations were calculated in order to provide a statistical description of the data. Then one-way analysis of variance with repeated measurements and Bonferroni test post hoc analysis was used. Statistically significant values were taken as $p < 0.05$.

Results

Numerical data characterizing the running loads and the circulatory system reactions occurring during the WU, FH and SH are presented in Tables 1, 2 and 3 respectively.

Table 1 Values of variables describing the warm-up

Variables	Match phase: Warm-up				
	Mean	Median	Stan. Dev.	Skewness	Kurtosis
HRmin [bpm]	77.91	84	18.02	-1.28375	0.60183
HRmean [bpm]	136.64	140	10.69	-0.4977	-0.5775
HRmax [bpm]	186.55	187	12.72	0.75817	0.92533
HRmin [%]	39.18	42	8.92	-1.24824	0.52585
HRmean [%]	68.46	70	5.35	-0.4275	-0.63759
HRmax [%]	93.55	94	6.36	0.67023	0.67643
HR duration in zone I [s]	516.09	504	242.97	0.09315	-0.42657
HR duration in zone II [s]	832.64	844	247.64	0.01127	-0.97232
HR duration in zone III [s]	832.82	852	234.57	0.05565	0.04418
HR duration in zone IV [s]	476.55	362	349.41	0.66699	-0.93809
HR duration in zone V [s]	47.09	47	50.11	0.41709	-1.57529
Total distance [m]	2663.73	2746	192.39	-1.50998	2.42628
Maximal speed [km/h]	27.91	29.22	4.19	-1.02232	0.26079
Average speed [km/h]	3.52	3.6	0.21	-1.10058	0.55746
Sprints [number]	11.91	11	3.91	0.85588	3.03901
Distance covered in zone 1 [m]	1295.55	1302	61.81	-0.05929	-1.12299
Distance covered in zone 2 [m]	650.82	620	110.25	0.60156	0.59812
Distance covered in zone 3 [m]	330.18	360	106.95	-1.00286	0.25524
Distance covered in zone 4 [m]	87.55	76	44.59	0.66274	1.61029
Distance covered in zone 5 [m]	46.55	48	30.96	0.4868	-0.00378

The arithmetic mean values of the tested variables obtained in Table 1 indicate a significant load of the tested athletes and the changes in skewness and kurtosis are relatively small.

The values of arithmetic means of the variables examined in Table 2 indicate the maximum load of the tested athletes and the changes in the skewness and kurtosis value are in some cases significant.

Table 2 Values of variables describing the first half of the match

Variables	Match phase: First half				
	Mean	Median	Stan. Dev.	Skewness	Kurtosis
HRmin [bpm]	117.46	120	18.69	-0.03711	-2.15061
HRmean [bpm]	169.46	172	15.15	-2.08301	5.55417
HRmax [bpm]	192.18	195	11.06	-1.36036	3.48776
HRmin [%]	59	60	9.25	-0.00185	-2.13001
HRmean [%]	85	86	7.51	-2.05337	5.46546
HRmax [%]	96.36	98	5.41	-1.43956	3.5427
HR duration in zone I [s]	51.46	0	163.72	3.31457	10.99004
HR duration in zone II [s]	247.82	71	538.79	3.13859	10.09674
HR duration in zone III [s]	424.18	314	261.42	0.73803	-0.97576
HR duration in zone IV [s]	1141.82	1287	545.45	-0.79256	0.20847
HR duration in zone V [s]	1008.27	983	655.45	0.36922	0.1606
Total distance [m]	5324.09	5626	1066.20	-1.80025	4.11438
Maximal speed [km/h]	27.80	28.59	4.23	-1.5696	3.66956
Average speed [km/h]	6.931	7.34	1.37	-1.80534	4.06507
Sprints [number]	13.18	11	8.29	0.7521	0.01532
Distance covered in zone 1 [m]	1667	1635	105.23	0.1049	-1.6085
Distance covered in zone 2 [m]	1208.82	1237	353.90	-0.97266	2.09908
Distance covered in zone 3 [m]	1209.46	1202	452.43	-1.27427	2.79522
Distance covered in zone 4 [m]	632.73	647	286.99	-0.73714	1.35176
Distance covered in zone 5 [m]	393.27	353	231.61	-0.03423	-0.83874

The arithmetic mean values of the analyzed variables of athletes examined in Table 3 reach the maximum level, and especially kurtosis are in a few cases large.

It was shown that during the WU, FH and SH the soccer players ran different distances ($F=30.107$; $p<0.001$), and that the distances were significantly shorter during the WU than during the FH and SH ($p<0.001$); furthermore, during the FH a longer distance was run than during the SH ($p=0.050$). There was also a significant difference between the three analyzed exercise phases in terms of average running speed ($F=37.731$; $p<0.001$), as shown in Table 4.

Table 3 Values of variables describing the second half of the match

Variables	Match phase: Second half				
	Mean	Median	Stan. Dev.	Skewness	Kurtosis
HRmin [bpm]	94.18	100	30.73	-1.60685	3.27132
HRmean [bpm]	161.92	167	13.36	-2.08747	4.68445
HRmax [bpm]	190.18	190	9.00	-0.81464	1.83227
HRmin [%]	47.36	50	15.39	-1.639	3.40372
HRmean [%]	81.18	84	6.66	-2.00529	4.29906
HRmax [%]	95.18	95	4.47	-0.8947	2.09274
HR duration in zone I [s]	124.55	19	314.96	3.2522	10.68042
HR duration in zone II [s]	329.91	173	420.34	2.13754	4.08696
HR duration in zone III [s]	599.18	464	317.50	0.50499	-1.05218
HR duration in zone IV [s]	1055.36	979	486.12	-0.48071	1.11293
HR duration in zone V [s]	531.18	484	393.082	0.08998	-1.14405
Total distance [m]	4412.55	4878	1177.45	-0.89711	-0.545
Maximal speed [km/h]	29.10	29.83	4.26	-1.27626	3.38009
Average speed [km/h]	6.26	6.47	1.23	-1.62222	4.04082
Sprints [number]	11.18	11	5.06	-0.29456	-0.93825
Distance covered in zone 1 [m]	1539	1689	448.99	-0.7554	-0.27726
Distance covered in zone 2 [m]	921.27	964	340.89	0.27795	0.42854
Distance covered in zone 3 [m]	897.91	978	353.85	-0.86279	0.00585
Distance covered in zone 4 [m]	463.91	477	186.72	-0.90954	1.50229
Distance covered in zone 5 [m]	368.36	352	192.15	-0.35291	-0.15973

Table 4 Statistical analysis of variables characterizing sprints

Parameters	Analysis of variance	Post hoc analysis		
		1vs2	1vs3	2vs3
Total distance [m]	F=30.107; p<0.001	p<0.001	p<0.001	p=0.050
Maximal speed [km/h]	F=1.1227; p=0.345	NS	NS	NS
Mean speed [km/h]	F=37.731; p<0.001	p<0.001	p<0.001	NS
Sprints [number]	F=0.397; p=0.677	NS	NS	NS

NS – non-significant

The data in Table 5 show that the soccer players ran significantly different distances in all the above described speed run zones in the three exercise phases ($p<0.001$), and that during the WU the distances were shorter than during the FH and also the SH (all zones except 3.00-6.99 km/h). In addition, at the speed run zones of 7.00-10.99 km/h and 11.00-14.99 km/h, athletes ran longer distances during the FH than during the SH.

Table 5 Statistical analysis of the distances covered at different speeds

Parameters	Analysis of variance	Post hoc analysis		
		1vs2	1vs3	2vs3
Distance covered in zone 1[m]	F=34.090; p<0.001	p=0.011	NS	NS
Distance covered in zone 2[m]	F=14.725; p<0.001	p<0.001	p=0.048	p=0.033
Distance covered in zone 3[m]	F=35.956; p<0.001	p<0.001	p<0.001	p=0.023
Distance covered in zone 4[m]	F=33.559; p<0.001	p<0.001	p<0.001	NS
Distance covered in zone 5[m]	F=27.451; p<0.001	p<0.001	p<0.001	NS

NS – non-significant

It was also found that the response of the circulatory system to the applied exercise load was different in the three exercise phases. The exercise performance duration at five submaximal HR zones was different in the WU, FH and SH phases (Table 6).

Table 6 Statistical analysis of the time spent by a soccer player in different HR zones

Parameters	Analysis of variance	Post hoc analysis		
		1vs2	1vs3	2vs3
HR duration in zone I [s]	F=29.488; p<0.001	p<0.001	p=0.005	NS
HR duration in zone II [s]	F=4.707; p=0.040	p=0.002	p=0.008	NS
HR duration in zone III [s]	F=6.584; p=0.006	p=0.005	NS	NS
HR duration in zone IV [s]	F=6.098; p=0.009	p=0.013	p=0.034	NS
HR duration in zone V [s]	F=11.472; p=0.003	p<0.001	p=0.012	p<0.001

NS – non-significant

Post hoc analysis showed that in HR zones of a more moderate level, i.e. 50-59 % HRmax and 60-69 % HRmax, more time was spent during the WU than in the FH and the SH, and in the zone of 70-79 % HRmax more time was spent in the WU than in the FH (p=0.005). However, in the ranges of 80-89 % HRmax and 90-100 % HRmax, the time spent at such high HR values was significantly shorter in the WU period than during the FH and the SH. It was also shown that the absolute values of HRmin (F=11.488, p<0.001) and HRmean (F=14.191, p=0.002) were significantly different between the exercise phases (Table 7). Post hoc analysis showed that significantly higher HRmin values were achieved in the FH than in the WU (p<0.001) and the SH (p=0.023), while HRmean values were significantly lower in the WU than during the FH and SH (p<0.001). Interphase differences of relative HR were similar to absolute values of this physiological variable.

Table 7 Statistical analysis of heart rate

Parameters	Analysis of variance	Post hoc analysis		
		<i>1vs2</i>	<i>1vs3</i>	<i>2vs3</i>
HRmin [bpm]	F=11.488; p<0.001	p<0.001	NS	p=0.023
HRmean [bpm]	F=14.191; p=0.002	p<0.001	p<0.001	NS
HRmax [bpm]	F=1.187; p=0.349	-	-	-
HRmin [%]	F=11.453; p<0.001	p<0.001	NS	p=0.033
HRmean [%]	F=14.333; p=0.002	p<0.001	p<0.001	NS
HRmax [%]	F=1.880; p=0.208	-	-	-

NS – non-significant

The obtained results show that the load on the players' body during the WU was lower than during FH and SH, which was comparable in both parts of the match.

Discussion

The soccer players in this study covered the longest distance during the FH and the shortest distance during the WU, there being thus also a difference between the distances covered during the FH and the SH. Such a variation between the FH and the SH is consistent with the literature, pointing to the fact that the total distance covered in the SH of a soccer match is less than in the FH at the highest and medium levels of the sport (Barros et al., 2007; Mohr et al., 2008). This tendency has been demonstrated in the current study by players, who, according to objective criteria, would be considered to be of an average national professional level. It is unfortunate that the available literature does not provide evidence regarding the physical loads that occur during the WU. As a result, no previous comparison of the WU with both parts of the subsequent match has been made. The present work thus presents something new. From the analysis in the current study of the loads sustained during the three phases of exercise, it is clear that greater attention should be paid to the constituent elements of the WU. The warm-up phase is important because while on the one hand it should be intense enough to make the body flexible and prepare its individual systems for increased physical loads, on the other hand it should not be so intense as to cause premature fatigue, and thus possibly have an adverse effect on the overall result of the match.

It was also noted in the current study that the maximum running speed and the number of sprints performed during each of the three phases were similar. These intense forms of running loads experienced at the highest speed constitute only 10-20 % of the overall effort expended during the match, which for 80-90 % of the time is played at low and moderate running speeds (Bloomfield et al., 2007). Data provided by Barros et al. (2007) and Mohr et al. (2008) indicate that as a

result of progressive fatigue experienced in the SH, soccer players make in that part of the match a smaller number of sprints and high intensity efforts than in the FH. There are, however, studies showing that high-intensity runs are maintained equally throughout the duration of a match by both young (Da Silva et al. 2007; Castagna et al. 2003) and adult soccer players (Barros et al. 2007). It has been considered that it is the maximal speed of a run, the distance covered, the number of sprints, and the high average speed of runs performed during a match that are the main factors determining the state of physical preparation of a soccer player (Gregson et al., 2010; Ingebrigtsen et al., 2015). If that is the case, then it is reasonable to conclude that the actual distances run in different ranges (zones) of running speed also constitute an important factor. In the present study there were significant differences in this respect; the longest distances in the WU period were covered at a speed of 3.00-6.99 km/h, and in both parts of the match itself the longest distances were covered at speeds of 7.00-10.99 km/h and 11.00-14.99 km/h. The current study also confirmed that the running distance covered during the FH was greater than during the SH, and this result was observed in the two speed zones, 7.00-10.99 km/h ($p=0.033$) and 11.00-14.99 km/h ($p=0.023$). A global analysis of the running loads sustained during the three exercise phases of the current study thus showed that both the achieved distances (in different speed zones) and the achieved speeds themselves consistently differentiate the WU from the FH and SH, and also the FH from the SH.

It is interesting to see whether the applied running loads are closely mapped by HR changes. It seems that such a mapping does occur, because both HR_{mean} and HR achieved in the five separate zones (50-100 % HR_{max}), significantly differentiate the WU, FH and SH phases. However, changes in HR are not as sensitive an indicator of body workload as the distance covered, because some of the results do not show differences between the FH and the SH or significant differences in running loads.

It has previously been shown that HR_{mean} achieved during a 90-minute match can range from 155 to 172 bpm (Eniseler, 2005), which corresponds to 85 % HR_{max} (Helgerud et al., 2001). Such a relatively high workload on the body corresponds to the HR observed at the anaerobic threshold (Stølen et al., 2005). Loads during the WU in the present study were lower than the anaerobic threshold: HR_{mean} was at the level of 68.46 ± 5.35 % HR_{max}, with an average speed of movement equal to 3.52 km/h. The low, under anaerobic threshold, intensity (i.e. not leading to a higher level of physical performance) of the WU is also supported by the fact that during the match itself the players stayed for the longest periods of time in the low and medium HR zones of 60-69 % HR_{max} and 70-79 % HR_{max} and in the low speed range of 3.00-6.99 km/h. Interpretation of the results obtained in the WU should also take into account that the purpose of the WU is not to train the body, but only to prepare it for more intense efforts

(Sander et al., 2013). In the current study, in the FH the players achieved $HR_{mean} = 85.00 \pm 7.71$ % HR_{max} , and stayed for the longest periods of time in the cardiovascular load ranges of 80-89 % HR_{max} and 90-100 % HR_{max} and in the medium-intensity running speed zones of 7.00-10.99 km/h and 11.00-14.99 km/h. During the SH, HR_{mean} was achieved at 81.18 ± 6.66 % HR_{max} , and the players spent the longest periods of time in the cardiovascular load range of 80-89 % HR_{max} and the medium-intensity running speed zones of 7.00-10.99 km/h and 11.00-14.99 km/h. The values of HR appearing in the FH and SH suggest that the body workload in these periods can be high enough to reach the anaerobic threshold, which would lead to the further development of physical performance. However, the running speeds recorded in both parts of the match, but particularly in those in which the players covered the greatest distances, did not always indicate that anaerobic threshold loads had been achieved, especially as the average running speed during the FH was 6.93 ± 1.37 km/h and during the SH was 6.28 ± 1.23 km/h, with maximal values of these variables equal to 27.80 ± 4.23 km/h and 29.10 ± 4.26 km/h, respectively. Probably only sprints and running at speeds above 19 km/h should be counted as above-anaerobic threshold workloads. However, during the match and WU there were few such instances (in the current study they lasted no more than 5 minutes), although such episodes can determine to a large extent the outcome of a game (Gregson et al., 2010).

In summary, the analysis of workloads during the WU, FH and SH can be performed by tracking HR changes, as well as by recording the length and speed of runs. Tracking such changes in the cardiovascular system enables the distinguishing of differences between lower and higher workloads in relation to exercise intensity observed at the anaerobic threshold.

Conclusion

1. The total length of the distance run, the average speed of run, and the distances covered at different speeds are good indicators for differentiating physical activity during the warm-up and both halves of a soccer match involving young soccer players.
2. The body's response to differential running loads during the warm-up and both halves of the match as expressed by submaximal heart rate in specific zones changes, minimal and average heart rate, was different during warm-up and both parts of the match, and adequate to the running load.
3. Warming-up constituted a smaller workload than did both halves of the match itself. Sporadic workload demands on the body were the biggest during the first half of the match and in some part exceeded the workloads occurring at the anaerobic threshold.

4. There is an urgent need to extend the results obtained in the current studies to the biochemical and physiological reactions of the organism and to link them to the indicators of the effectiveness of the game.

References

- Andrzejewski, M., Chmura, J., Pluta, B., Strzelczyk, R., & Kasprzak, A. (2013). Analysis of sprinting activities of professional soccer players. *Journal of Strength and Conditioning Research*, 27 (8), 2134-40.
- Barros, R. M. L., Misuta, M. S., Menezes, R. P., Figueroa, P. J., Moura, F. A., Cunha, S. A., Anido, R., & Leite, N. J. (2007). Analysis of the Distances Covered by First Division Brazilian Soccer Players Obtained with an Automatic Tracking Method. *Journal of Sports Science and Medicine*, 6 (2), 233–242.
- Bloomfield, J., Polman, R., & O'Donoghue, P. (2007). Physical Demands of Different Positions in FA Premier League Soccer. *Journal of Sports Science and Medicine*, 6 (1), 63-70.
- Bradley, P. S., Carling, C., Gomez, Diaz, A., Hood, P., Barnes, C., Ade, J., Boddy, M., Krustup, P., & Mohr, M. (2013). Match performance capacity of players in the top three competitive standards of English professional soccer. *Human Movement Science*, 32 (4), 808-821.
- Bradley, P. S., & Noakes, T. D. (2013). Match running performance fluctuations in elite soccer: indicative of fatigue, pacing or situational influences? *Journal of Sports Science*, 31 (15), 1627-38.
- Bradley, P. S., Sheldon, W., Wooster, B., Olsen, P., Boanas, P., & Krustup, P. (2009). High-intensity running in English FA Premier League soccer matches. *Journal of Sports Science*, 15; 27 (2), 159-68.
- Capranica, L., Tessitore, A., Guidetti, L., & Figura, F. (2001). Heart rate and match analysis in pre-pubescent soccer players. *Journal of Sports Science*, 19 (6), 379-84.
- Castagna, C., D'Ottavio, S., & Abt, G. (2003). Activity profile of young soccer players during actual match play. *Journal of Strength and Conditioning Research*, 17 (4), 775-80.
- Da Silva, N. P., Kirkendall, D. T., & De Barros, N. T. L. (2007). Movement patterns in elite Brazilian youth soccer. *The Journal of Sports Medicine and Physical Fitness*, 47 (3), 270-5.
- Di Salvo, V., Baron, R., González-Haro, C., Gormasz, C., Pigozzi, F., & Bachl, N. (2010). Sprinting analysis of elite soccer players during European Champions League and UEFA Cup matches. *Journal of Sports Science*, 28 (14), 1489-94.
- Di Salvo, V., Gregson, W., Atkinson, G., Tordoff, P., & Drust, B. (2009). Analysis of high intensity activity in Premier League soccer. *International Journal of Sports Medicine*, 30 (3), 205-12.
- Eniseler, N. (2005). Heart rate and blood lactate concentrations as predictors of physiological load on elite soccer players during various soccer training activities. *Journal of Strength and Conditioning Research*, 19 (4), 799-804.
- Gregson, W., Drust, B., Atkinson, G., & Salvo, V. D. (2010). Match-to-match variability of high-speed activities in premier league soccer. *International Journal of Sports Medicine*, 31 (4), 237-42.
- Helgerud, J., Engen, L. C., Wisloff, U., & Hoff, J. (2001). Aerobic endurance training improves soccer performance. *Medicine and Science in Sports and Exercise*, 33 (11), 1925-31.

- Horbacz, A., Majherová, M., & Perečinská, K. (2013). Posture and muscle imbalance in young tennis players. *Scientific Review of Physical Culture*, 3 (4), 33-38. Retrieved from <http://www.srpc.eu>
- Ingebrigtsen, J., Dalen, T., Hjelde, G. H., Drust, B., & Wisløff, U. (2015). Acceleration and sprint profiles of a professional elite football team in match play. *European Journal of Sport Science*, 15 (2), 101-10.
- Mohr, M., Krstrup, P., Andersson, H., Kirkendal, D., & Bangsbo, J. (2008). Match activities of elite women soccer players at different performance levels. *Journal of Strength and Conditioning Research*, 22 (2), 341-9.
- Pilis, K., Miarczyński, D., Pilis, A., Stec, K., Letkiewicz, S., & Pilis, W. (2017). Soccer players' injuries at different levels of the sport. *Medical Science Pulse*, 11 (2), 10-16.
- Rampinini, E., Coutts, A. J., Castagna, C., Sassi, R., & Impellizzeri, F. M. (2007). Variation in top level soccer match performance. *International Journal of Sports Medicine*, 28 (12), 1018-24.
- Sander, A., Keiner, M., Schlumberger, A., Wirth, K., & Schmidtbleicher, D. (2013). Effects of functional exercises in the warm-up on sprint performances. *Journal of Strength and Conditioning Research*, 27 (4); 995–1001.
- Stølen, T., Chamari, K., Castagna, C., & Wisløff, U. (2005). Physiology of soccer: an update. *Sports Medicine*, 35 (6), 501-36.

COMPARISON OF LATVIAN QUALIFIED BASKETBALL AND HANDBALL PLAYERS PERFORMANCE

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Abstract. *The aim of our investigation was to compare qualified basketball and handball players' anthropometric and performance (aerobic and anaerobic endurance, explosive power) characteristics. Male handball and basketball players from Premium league teams voluntary participated. The aerobic endurance was measured on a treadmill, the intensity of running increased step by step, the test was performed to exhaustion. The oxygen uptake, heart rate and running speed were measured. The lactate concentration was detected in periphery blood samples by special strips in the end of every load step and after the test. Maximal vertical jump heights of the counter-movement jump with hands on the hips and the free jump with motions of arms were measured on a special device. The height of basketball players is higher in comparison with handball players ($p=0.002$), but the body weight and body mass index did not differ significantly ($p>0.05$). The aerobic endurance characteristics (heart rate and oxygen uptake at the anaerobic threshold load intensity, and maximal oxygen uptake) were greater in basketball than in handball players ($p<0.04$). The maximal lactate concentration in blood plasma two minutes after the test was higher in handball players than in basketball players ($p=0.043$). The vertical jump heights are the same in basketball and handball players ($p>0.05$).*

Keywords: *anthropometric characteristics, aerobic endurance, anaerobic endurance, jump height, basketball, team handball.*

Introduction

Both sport games: basketball and team handball have an intermittent nature of movements and their intensity. Therefore players combine elements of power, anaerobic and aerobic endurance exercises during training.

The players experience, anthropometric characteristics, body composition, endurance, balance between anaerobic and aerobic power, are very important in evaluating elite basketball players (Hoffman, 2003; Ostojic, 2006). The First league basketball players are taller and had a higher maximal reach height, this results in higher jumping reach height and better game jumping performance of the First league players in comparison with the Second league players

(Pehar et al., 2017). The basketball players need high levels of muscles' power to achieve fast running speed and powerful jumping. An aerobic capacity is important to maintain high performance level of the athletes throughout all the play match (Hoffman, 2003; Ostojic, 2006).

A large height and lean body mass due to hypertrophied skeletal muscles are beneficial for performance also in adult professional handball players because a taller stature is an advantage for throwing, stealing and handling of the ball in a direct duel with an opponent during the match play (Gorostiaga et al., 2005; Pontaga & Zidens, 2011). Handball players need high levels of anaerobic capacities to achieve a fast running speed, powerful jumping and ball throwing because team handball is a very strenuous sport (Rannou et al., 2001; Ziv & Lidor, 2009; Ingebrigtsen et al., 2013). The higher values of absolute muscles strength and power characteristics (including vertical jump height) in the professional handball players in comparison with amateur or lower level players indicate that these characteristics are important for successful performance in high-level handball (Gorostiaga et al., 2005; Pontaga & Zidens, 2012; Nikolaidis & Ingebrigtsen, 2013). The intensity of exercises during basketball game also is high: approximately 15 % of the play-match time is spent in anaerobic exercises (McInnes et al., 1995). The great skeletal muscles mass may be beneficial for throwing power improvement, but may decrease jumping height of both: basketball and handball players.

Majority of the activity in the basketball game is performed at aerobic intensity (McInnes et al., 1995). An aerobic capacity also is important to maintain high performance level of the athletes throughout all duration of the handball game (Gorostiaga et al., 2005; Rannou et al., 2001). Buchheit M. et al. (2009) detected that close to 90 % of the energy released during a handball game is supplied by aerobic mechanisms. An improved aerobic capacity must be important also for a faster recovery between high-intensity efforts during match play (Rannou et al., 2001), and a greater resistance to fatigue during training and competitions (Zapartidis et al., 2009). The fatigue is a reason of reduced throwing accuracy towards the end of each half in a simulated handball game (Zapartidis et al., 2007).

The knowledge about anthropometric and performance characteristics of high-level basketball and handball players could be used by coaches to make better selection of players and to design training programs according to the specific needs of each sport game player (Ostojic, 2006).

The aim of our investigation was to compare qualified basketball and handball players' anthropometric and performance (aerobic and anaerobic endurance, explosive power) characteristics.

Methods

Thirty-four high-level male athletes who played in Latvian Premium league teams (20 basketball and 14 handball players) were informed of the possible risks of participation and voluntarily participated in the investigation. Their training experience in basketball or team handball ranged from seven to 14 years. These athletes trained five times per week (ten to 15 hours per week) and played regularly on the weekends. The study was performed in accordance with the standards of the local Ethics Committee and in accordance with the Declaration of Helsinki.

The athletes' height was measured using an Ultrasound Height Measuring Unit MZ10020 (ADE, Hamburg). Body mass was measured in basketball and handball players wearing briefs using a Body Composition Analyser BC-418 (Tanita Corporation, Japan), and the error of measurement was 0.1 kg.

An aerobic endurance performance of the basketball and handball players was determined on a treadmill (Cosmos system performance diagnostics, Germany). The running speed increased step by step for every two minutes by 0.25 m/s. Every participant performed the test to exhaustion. A cardiopulmonary diagnostic equipment „Oxygen Mobile Via Sys” (Via Sys Healthcare GMBH, Germany) was used to register an electrocardiogram and respiratory characteristics. In our investigation we used the characteristics: heart rate HR (in beats per minute), relative volume of oxygen uptake VO_2 (in litres per minute per body mass kilogram), and running speed on the treadmill (in meters per second). Mean values of all characteristics in the last minute of each load step were calculated. Gas analysers are calibrated before and after each test. A lactic acid concentration in the capillary blood was detected by a special lactate analysers „Biosen 5030” (EKG – diagnostic, Germany). The lactic acid concentration in the capillary blood was determined every two minutes (in the end of every load intensity step) and two minutes after finishing of the load test performed to exhaustion.

The average aerobic performance characteristics were determined at the anaerobic threshold (AnT) intensity workload (onset of the blood lactate accumulation), when the lactate concentration in the capillary blood rapidly increased (it was below or close to 4 mmol/l). The break point was seen in relationship between the treadmill workload (running speed) and concentration of the lactate in the blood (Sjodin & Jacobs, 1981). Rapid increase of the lactate concentration was observed, when the running speed exceeded the AnT level due to intensive anaerobic glycolysis in the muscles fibres in energy providing. The same aerobic performance characteristics were determined at the maximal oxygen uptake load.

A Personal Computer based diagnostic system FiTRO Jumper (Fitros, Bratislava, Slovakia) was used for assessment of jumping performance. The system (consisting of contact switch mats connected by means of an USB interface to the computer) measured contact and flight times (with accuracy of one millisecond) and calculated vertical jump height of serial jumps. Before the vertical jump test the athletes performed general warming up for eight to nine minutes: this included low – to moderate intensity jogging and jumping rope. After warming up exercises they performed five vertical jumps with squatting and holding the hands on the hips or counter-movement jumps (CMJ). After the rest with duration of six to eight minutes the participants performed the next five vertical jumps with squatting and free movement of the arms or free jumps (CMJA) on the diagnostic system FiTRO Jumper. The best repetition (the highest jump) from every kind of serial jumps (CMJ and CMJA) was taken into account. The maximal jump height (in centimetres) was estimated.

The anthropometric and performance characteristics data of basketball and handball players groups were normally distributed. Mean values and standard deviations (SD) for all characteristics were calculated. Student’s *t* - test for unequal data groups was employed to determine differences between the anthropometric and physiological characteristics at anaerobic threshold and maximal intensity loads, and vertical jump tests results in qualified basketball and handball players. The differences were considered to be statistically significant at $p < 0.05$. Microsoft Excel 2010 program and MS additional program “Statistics 5.01.” (Dravnieks, 2017) were used to perform all statistical procedures.

Results

The mean age, body height, body mass and body mass index of the tested athletes are shown in the Table 1. The mean height of basketball players was significantly higher in comparison with the height of handball players ($p = 0.002$), the body mass and body mass index did not differ significantly in these two groups of players ($p > 0.05$).

Table 1 Mean anthropometric characteristics (\pm SD) of basketball and handball players from Premium league teams

Participants	Mean age \pm SD, years	Mean height \pm SD, cm	Mean body mass \pm SD, kg	Mean body mass index (BMI) \pm SD, kg/m ²
Basketball players	21.4 \pm 1.0	196.9 \pm 8.3	90.7 \pm 13.0	23.4 \pm 2.3
Handball players	20.6 \pm 0.9	186.8* \pm 8.1	85.9 \pm 11.3	24.2 \pm 1.8
Significance of difference	$p = 0.063$ N.S.	$p = 0.002$	$p = 0.165$ N.S.	$p = 0.249$ N.S.

N.S. – none significant

The mean relative oxygen uptake at the anaerobic threshold and maximal oxygen uptake load intensity were significantly greater in high-level male basketball players in comparison with high-level handball players ($p = 0.01$), Table 2. The mean heart rate at the anaerobic threshold load intensity was significantly higher in basketball players than in handball players ($p = 0.039$), but the mean running speed at this load intensity did not significantly differed in the players of both sport games ($p > 0.05$). The difference between the mean maximal heart rate (measured at the maximal oxygen uptake load intensity) in both groups of participants was none significant ($p > 0.05$).

The maximal lactate concentration in periphery blood taken two minutes after the load test on treadmill performed to exhaustion was significantly greater in qualified male handball players than in high-level basketball players ($p = 0.043$), Table 2.

Table 2 Mean (\pm SD) aerobic endurance characteristics at the anaerobic threshold and maximal intensity load, maximal lactate concentration in blood two minutes after the load test in qualified male basketball and handball players

Load intensity	Anaerobic threshold			Maximal aerobic power		
	<i>VO₂ max, ml/kg·min</i>	<i>HR, beats/min</i>	<i>Running speed, m/s</i>	<i>VO₂, ml/kg·min</i>	<i>HR, beats/min</i>	<i>Lactate max, mmol/l</i>
Basketball players	48.5 \pm 4.7	174 \pm 6	3.70 \pm 0.36	54.2 \pm 5.9	186 \pm 7	9.3 \pm 1.3
Handball players	41.6* \pm 4.9	169* \pm 6	3.63 \pm 0.24	46.5* \pm 4.6	185 \pm 6	10.8* \pm 2.0
Significance of difference	$p = 0.001$	$p=0.039$	$p=0.492$ N.S.	$p = 0.001$	$p=0.518$ N.S.	$p=0.043$

N.S. – none significant

Table 3 Mean maximal height (\pm SD) of counter-movement and free jump (counter-movement jump with free motion of the arms) in high-level male basketball and handball players

Participants	Height of the counter-movement jump, cm	Height free jump, cm
Basketball players	47.4 \pm 7.8	57.8 \pm 9.0
Handball players	47.6 \pm 7.6	57.1 \pm 10.1
Significance of difference	$p = 0.954$; N.S.	$p = 0.849$; N.S.

N.S. – none significant

The mean maximal height of counter-movement and free jump did not differ significantly in qualified male basketball and handball players ($p > 0.05$), Table 3.

Discussion

Our high-level basketball players are taller for approximately 10 cm in comparison with the same level Latvian handball players (Table 1), but the mean body mass and the body mass index differ none significantly in these two groups of players. The mean anthropometric characteristics of Latvian basketball players from Premium league teams (mean height: 196.9 ± 8.3 cm; body mass: 90.7 ± 13.0 kg; age: 21.4 ± 1.0 years) are very close with professional basketball players from Bosnia and Herzegovina (mean height: 194.92 ± 8.09 cm; body mass: 89.33 ± 10.91 kg; age: 21.58 ± 3.92 years) determined by Peihar et al. (2017).

The mean stature of the professional handball players from Spain: 188.7 ± 8.0 cm (Gorostiaga et al., 2005) and France: 190.0 ± 1.2 cm (Rannou et al., 2001) slightly exceeds the mean height of Latvian Premium league players (186.8 ± 8.1 cm), but the stature of the First league best team players from Greece (185.1 ± 6.5 cm) is similar like in Latvian players (Nikolaidis & Ingebrigtsen, 2013). The professional players from Spain with the mean body mass 95 ± 13 kg (Gorostiaga et al., 2005) are heavier for approximately 10 kg than our players (the mean body mass: 85.9 ± 11.3 kg). This can be explained by greater skeletal muscles mass in the professional level Spanish athletes: their fat free body mass is 81.7 ± 9 kg, but body fat is in norm: 13.8 ± 2 % (Gorostiaga et al., 2005) in comparison with our players. From our previous data (Pontaga & Zidens, 2011) the fat free body mass in Latvian young handball players (age 17.6 ± 1.0 years) from Murjani Sport Gymnasium (Premium league team) is 73.9 ± 5.2 kg and body fat is in norm: 13.6 ± 2.8 %, but the mean body mass index is greater in this team players (25.1 ± 2.9 kg/m²) in comparison with this characteristic in the present team (24.2 ± 1.8 kg/m²). Our handball players are heavier in comparison with the professional (mean body mass 79 ± 1 kg) players from France (Rannou et al., 2001). The body mass of the First league best team handball players from Greece (87.6 ± 9.0 kg) is close to the mass (85.9 ± 11.3 kg) of Latvian players (Nikolaidis & Ingebrigtsen, 2013).

The vertical jumping height is especially important for basketball players because the game is oriented around a basket that is set at a top height of 3.05 m. Therefore taller players are able to outperform their opponents in numerous situations requiring offensive and defensive responsibilities: blocking, jump shooting, rebounding (Miura et al., 2010; Struzik et al., 2014). The vertical jump maximal height is similar across different playing levels and positions of basketball players (First league vs. Second league or guards, forward and centre

players), but differences in the anthropometrics between the players competing at the two levels are evident: First league players were taller and had a higher maximal reach height (Pehar et al., 2017). This higher stature gives advantage in higher jumping reach height and consequent better play match jumping performance of the First league basketball players than in Second league players.

From our results vertical jumping ability of basketball and handball players from Premium league teams is the same in both jumps: counter-movement and free jump (Table 3). Handball players do not need to shot the ball to the basket like basketball players, but taller players with a greater body mass have the ability to achieve a higher ball speed in the jump throw (Wagner et al., 2010).

Power characteristics (including vertical jump height) were better in handball players from higher ranked teams than from lower ranked male elite Greek handball teams (Nikolaidis & Ingebrigtsen, 2013). The counter-movement jump height in handball players from the best Greek team is 37.7 ± 3.7 cm (from our data 47.6 ± 7.6 cm), but free jump height (with movement of the arms) is 46.6 ± 4.1 cm (from our observations 57.1 ± 10.1 cm). The body mass in our and Greek players is the same. Nevertheless Latvian elite handball players vertical jump heights exceed the results of Greek athletes for approximately 10 cm. The counter-movement jump height of our players coincides with the data of much heavier Spanish amateur (46.9 ± 7.0 cm) and professional players (46.8 ± 7.0 cm) (Gorostiaga et al., 2005). From our previous investigation high body mass index observed in qualified handball and football players could be explained with large lean body or muscles mass. We did not determined significant relationship between the body mass index and vertical jumps height in these handball and football players (Pontaga & Zidens, 2011). Significantly greater power characteristics (counter-movement jump height, handgrip strength, sprint running speed) and aerobic capacity are determined in elite adolescent (14 – 18 year olds) handball players in comparison with the non-elite adolescent athletes (Stijn et al., 2011).

Relative oxygen uptake is greater in our qualified basketball players in comparison with handball players at the anaerobic threshold load intensity and at the maximal intensity load (Table 2). The mean aerobic power of our basketball players 54.2 ± 5.9 ml/kg·min is better than in elite Serbian basketball players indirectly determined relative maximal oxygen uptake: 49.8 ± 4.9 ml/kg·min (52.5 ± 4.8 ml/kg·min in guards) (Ostojic, 2006) and Lithuanian professional basketball players (in dependence on players position maximal oxygen uptake varied from 46.2 ± 5.6 to 52.2 ± 8.7 ml/kg·min, but the load test is performed on cycle ergometer, not a customary activity for basketball players) (Gocentas et al., 2011). Aerobic performance is essentially important in basketball players' performance because the distances covered by players during the match play in different phases of the competition varied from 4.02 to 6.17 km (Borin et al.,

2013). Anaerobic endurance seems not so important in basketball players because the blood lactate concentration of the athletes at different times of the match and phases of competition did not significantly changed: this concentration varied from 2.24 ± 0.69 to 3.37 ± 0.67 mmol/l (Borin et al., 2013). Therefore the anaerobic threshold lactate concentration was not reached in the final match play of Brazilian Basketball League competitions. The high mean lactate concentration in periphery blood in our basketball players two minutes after the load test: 9.3 ± 1.3 mmol/l is not typical during real basketball competitions.

Aerobic endurance is important also in handball players, because a total running distance per match play (from 3.9 to 4.7 km) is long, but slightly shorter than in basketball players (Povoas et al., 2012; Michalsik et al., 2013). A mean heart rate during the match is 160 – 170 beats/ min. (Povoas et al., 2012; Wagner et al., 2014), which is close to anaerobic threshold heart rate of our players: 169 ± 6 beats/ min. The blood lactate concentration after handball match play is 3 - 11 mmol/l (Wagner et al., 2014), which is higher than in elite basketball players and proves the role of intensive anaerobic glycolysis in energy supply of muscles and therefore more important requirement to anaerobic endurance in handball than basketball players' performance. The relative maximal oxygen uptake in our handball players (46.5 ± 4.6 ml/kg·min.) is low in comparison with the same characteristic in amateur (57.3 ± 3.1 ml/kg·min.) and professional (58.7 ± 0.9 ml/kg·min.) athletes from France (Rannou et al., 2001). Wagner et al. (2014) in the review article concluded that handball players in match play need a high aerobic capacity to recover during the low intensity phases to ensure playing on a high level in the high intensity phases: maximal oxygen uptake of 55 - 60 ml/kg·min., high level of anaerobic endurance to play at maximal blood lactate concentration of 8 -12 mmol/l during all the game (2×30 min). Buchheit et al. (2009) measured maximal oxygen uptake and maximal blood lactate concentration in handball players: in the small size game (60.2 ± 2.6 ml/kg·min. and 8.9 ± 2.3 mmol/l), in the shuttle run (56.4 ± 5.2 ml/kg·min. and 11.6 ± 1.4 mmol/l), and in incremental treadmill running test (57.3 ± 4.7 ml/kg·min. and 9.3 ± 1.3 mmol/l). The relative maximal oxygen uptake values in our players are lower by 20 – 25 % in comparison with these data, but the maximal blood lactate concentration of our handball players determined in incremental treadmill running test (10.8 ± 2.0 mmol/l) is greater than from treadmill test performed by Buchheit et al. (2009). This means that our handball players need to improve their aerobic endurance, but the anaerobic endurance of our athletes is comparable with this characteristic in international level handball players.

Conclusions

Anthropometric characteristics of high-level our basketball players are close to professional foreign players, but our qualified handball players need to achieve larger mass of skeletal muscles. Power characteristics (counter-movement jump height without and with motions of the arms) in Latvian high-level male basketball and handball players are the same and comparable with vertical jump tests results of international level players of both sport games. Aerobic endurance characteristics of Latvian basketball players coincides with these values in professional international level athletes, but are low and need improvement in our handball players. Anaerobic endurance (determined from maximal lactate concentration in periphery blood two minutes after the treadmill load test performed to exhaustion) is significantly better in Latvian handball than in basketball players, this could be explained by more intensive anaerobic playing activity in handball. The maximal blood lactate concentration in our handball players is similar like in professional athletes from other countries.

References

- Borin, J. P., Daniel, J. F., Bonganha, V., De Moraes, A. M., Cavaglieri, C. R., Mercadante, L. A., Da Silva, M. T. N., & Montagner, P. C. (2013). The distances covered by basketball referees in a match increase throughout the competition phases, with no change in physiological demand. *Open Access Journal of Sports Medicine*, 4, 193–198. Doi:10.2147/OAJSM.S42489.
- Buchheit, M., Laursen, P. B., Kuhnle, J., Ruch, D., Renaud, C., & Ahmaidi, S. (2009). Game-based training in young elite handball players. *International Journal of Sports Medicine*, 30, 251 – 258. PMID: 19199207.
- Dravnieks, J. MS additional program “Statistics 5.01.” Downloaded from [06.01.2018.] <http://runcis.lspa.lv/statist.html>.
- Gocentas, A., Jascaniniene, N., Poprzecki, S., Jaszczanin, J., & Juozulynas, A. (2011). Position-related differences in cardiorespiratory functional capacity of elite basketball players. *Journal of Human Kinetics*, 30, 145 – 152. Doi:10.2478/v10078-011-0082-1.
- Gorostiaga, E. M., Granados, C., Ibanez, J., & Izquierdo, M. (2005). Differences in physical fitness and throwing velocity among elite and amateur male handball players. *International Journal of Sports Medicine*, 26, 225 – 232. PMID: 15776339.
- Hoffman, J. R. (2003). Physiology of basketball. In: McKeag, D. B. (ed.). *Basketball* (pp. 12-24). Oxford: Blackwell Science.
- Ingebrigtsen, J., Rodahl, S., & Jeffreys, I. (2013). Physical characteristics and abilities of junior elite male and female handball players. *Journal of Strength and Conditioning Research*, 27, 302-309. Doi:10.1519/JSC.0b013e318254899f.
- McInnes, S. E., Carlson, J. S., Jones, C. J., & McKenna, M. J. (1995). The physiological load imposed on basketball players during competition. *Journal of Sport Sciences*, 13, 387–397. Doi:10.1080/02640419508732254.
- Miura, K., Yamamoto, M., Tamaki, H., & Zushi, K. (2010). Determinants of the abilities to jump higher and shorten the contact time in a running 1-legged vertical jump in

- basketball. *Journal of Strength and Conditioning Research*, 24, 201-206. Doi:10.1519/JSC.0b013e3181bd4c3e.
- Michalsik, L. B., Aagaard, P., & Madsen, K. (2013). Locomotion characteristics and match-induced impairments in physical performance in male elite team handball players. *International Journal of Sports Medicine*, 34, 590-599. Doi:10.1055/s-0032-1329989.
- Nikolaidis, P. T., & Ingebrigtsen, J. (2013). Physical and physiological characteristics of elite male handball players from teams with a different ranking. *Journal of Human Kinetics*, 38, 115-124. Doi:10.2478/hukin-2013-0051.
- Ostojic, S. M., Mazic, S., & Dikic, N. (2006). Profiling in basketball: physical and physiological characteristics of elite players *Journal of Strength and Conditioning Research*, 20, 740-4. Doi:10.1519/R-15944.1.
- Pehar, M., Sekulic, D., Sisic, N., Spasic, M., Uljevic, O., Krolo, A., Milanovic, Z., & Sattler, T. (2017). Evaluation of different jumping tests in defining position-specific and performance-level differences in high level basketball players. *Biology of Sport*, 34, 263-272. Doi:10.5114/biolSport.2017.67122.
- Pontaga, I., & Zidens, J. (2011). Estimation of body mass index in team sports athletes. *LASE Journal of Sport Science*, 2 (2), 33 – 44.
- Pontaga, I., & Zidens, J. (2012). Comparison of anthropometric and performance characteristics in amateur and professional level handball players. *LASE Journal of Sport Science*, 3 (1), 47- 54.
- Povoas, S. C. A., Seabra, A. F. T., Ascensao, A., Magalhaes, J., Soares, J. M. C., & Rebelo, A. N. C. (2012). Physical and physiological demands of elite team handball. *Journal of Strength and Conditioning Research*, 26, 3365-3375. Doi:10.1519/JSC.0b013e318248aeec.
- Rannou, F., Prioux, J., Zouhal, H., Gratas – Delamarche, A., & Delamarche, P. (2001). Physiological profile of handball players. *Journal of Sports Medicine and Physical Fitness*, 41, 349 – 353. PMID: 11533566.
- Sjodin, B., & Jacobs, I. (1981). Onset of blood lactate accumulation and marathon running performance. *International Journal of Sports Medicine*, 2, 23 – 26. Doi:10.1055/s-2008-1034579.
- Stijn, P. J. M., Vaeyens, R., Vandendriessche, J., Vandorpe, B., Pion, J., Aaron, J., Coutts, A. J., Lenoir, M., & Philippaerts, R. M. (2011). A multidisciplinary identification model for youth handball. *European Journal of Sport Science*, 11, 355 – 363. <http://dx.doi.org/10.1080/17461391.2010.523850>.
- Struzik, A., Pietraszewski, B., & Zawadzki, J. (2014). Biomechanical analysis of the jump shot in basketball. *Journal of Human Kinetics*, 42, 73-9. Doi:10.2478/hukin-2014-0062.
- Wagner, H., Buchecker, M., von Duvillard, S. P., & Müller, E. (2010). Kinematic description of elite vs. low level players in team handball jump throw. *Journal of Sports Science and Medicine*, 9, 15-23. PMID: PMC3737958.
- Wagner, H., Finkenzeller, T., Würth, S., & von Duvillard, S. P. (2014). Individual and Team Performance in Team-Handball: A Review. *Journal of Sports Science and Medicine*, 13, 808-816. PMID: PMC4234950.
- Zapartidis, I., Gouvali, M., Bayios, I., & Boudolos, K. (2007). Throwing effectiveness and rotational strength of the shoulder in team handball. *Journal of Sports Medicine and Physical Fitness*, 47, 169 – 178. PMID: 17557054.

- Zapartidis, I., Varelziz, I., Gouvali, M., & Kororos, P. (2009). Physical fitness and anthropometric characteristics in different levels of young team handball players. *The Open Sports Sciences Journal*, 2, 22 – 28. Doi:10.2174/1875399X00902010022.
- Ziv, G., & Lidor, R. (2009). Physical characteristics, physiological attributes, and on-court performances of handball players: A review. *European Journal of Sport Science*, 9, 375-386. Doi:10.1080/17461390903038470.

RĪGAS PAMATSKOLAS SKOLĒNU UN UNIVERSITĀTES PEDAGOĢIJAS SPECIALITĀTES STUDENTU VESELĪBAS STĀVOKĻA, FIZISKO AKTIVITĀŠU UN LABIZJŪTAS PAŠNOVĒRTĒJUMS

The Self-estimation of the Health Level, Physical Activities and Feeling of the Riga Basic School Students and University Pedagogical Specialty Students

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Abstract. *Students is a group of population, who experience psychological overload and emotional strain. These factors could have a negative impact on student's health, but good health level and positive mood are important factors for high learning outcomes. The survey of Riga 2nd Gymnasium 9th grade basic school students and University of Latvia 1st course pedagogical speciality students was carried out. The self-estimation of health level, physical activities and feeling at school and at home of the both group students was compared. The results of the survey showed that the majority of students have good health level or they have minor health problems. Physical activity of basic school students is higher than the physical activity of university students. A part of students regularly experience strain. More basic school students in comparison with university students are regularly in the state of stress. Overall university students feel better at university than basic school students at school. The majority of both group students feel good at home. Students consider that important factors for maintaining of the health are: correct sleep regimen, proper nutrition regime, enough physical activities, avoiding from stress and overload.*

Keywords: *health level; physical activities; strain; feeling; students.*

Ievads

Introduction

Skolēni un studenti ir iedzīvotāju grupas, kurām raksturīga psiholoģiska pārslodze un emocionāla spriedze. Ilgstoša psiholoģiskā pārslodze var atstāt nelabvēlīgu ietekmi uz veselības stāvokli. Psiholoģiskā pārslodze ir tieši saistīta ar emocionālo spriedzi, kuras pamatā galvenokārt ir trīs emocionālie faktori: situācijas nenoteiktība, situācijas nozīmīgums un laika deficīts (Cekule et al.,

2006). Skolēnu un studentu dzīvē ir raksturīgi visi šie emocionāliem faktori. Pētījumi liecina, ka zēniem liels uzdoto mājasdarbu daudzums, kombinējoties ar intensīvu saspringtu darbu klasē, veicina liekā svara pieaugumu (Michaud et al., 2015). Ilgs mācību darbam veltīts laiks, palielināts uzdoto mājasdarbu daudzums, nepietiekams miegs, samazinātas fiziskās aktivitātes un augsts stresa līmenis ir galvenie faktori, kas veicina bērnu liekā svara veidošanos (Ren et al., 2017). Neskatoties uz labas izglītības nozīmi, svarīgi ir arī saglabāt labu bērnu un jauniešu veselības stāvokli.

Fiziskās aktivitātes ir viens no faktoriem, kas mazina ilgstoša stresa negatīvo ietekmi uz veselības stāvokli. Uzturēšanās brīvā dabā un nodarbošanās ar sportu samazina virsnieru garozas dziedzerā izstrādātā hormona kortizola daudzumu organismā (Hofman et al., 2018). Kortizola izdalīšanās un tā koncentrācija asinīs palielinās stresa laikā. Pierādīts, ka ilgstošai stresa iedarbībai pakļautiem cilvēkiem ir paaugstināts hormona kortizola līmenis matos (Staufenbiel et al., 2013). Tādējādi dažādas fiziskās aktivitātes - gan nodarbošanās ar sportu, gan arī pārgājieni un fizisks darbs var mazināt stresu un dot iespēju izvairīties no tā radītajiem veselības traucējumiem.

Konstatēts, ka fiziskās aktivitātes veicina jauniešu garastāvokļa uzlabošanos, sevišķi, ja tās ir kolektīvas sporta nodarbības (Rusby et al., 2014). Pētījumi liecina, ka medicīnas specialitāšu studentu fizisko aktivitāšu pieaugums korelē ar garastāvokļa uzlabošanos un veselīga dzīvesveida ievērošanu. Tāpēc fiziskās audzināšanas un veselības dienesta darbinieku izstrādātas programmas var sekmēt jauniešu veselības uzlabošanos, neskatoties uz intensīvo garīgo slodzi (Mašina et al., 2016). Pētījumi liecina, ka veselīgs dzīvesveids veicina akadēmisko sasniegumu uzlabošanos skolēniem. Tāpēc veselīga dzīvesveida programmas un rekomendācijas var uzlabot gan skolēnu sekmes, gan veicināt labas veselības saglabāšanu (Faight et al., 2017). Lai sekmētu jauniešu laba veselības stāvokļa saglabāšanu, bet vienlaikus augstu mācību sasniegumu panākšanu, nepieciešams noskaidrot jauniešu fizisko aktivitāšu līmeni, veselības stāvokļa un labizjūtas pašvērtējumu.

Pētījuma mērķis bija izpētīt pamatskolas skolēnu un augstskolas pedagoģijas specialitātes studentu veselības stāvokļa, fizisko aktivitāšu līmeņa un labizjūtas pašvērtējumu.

Methodika *Methodology*

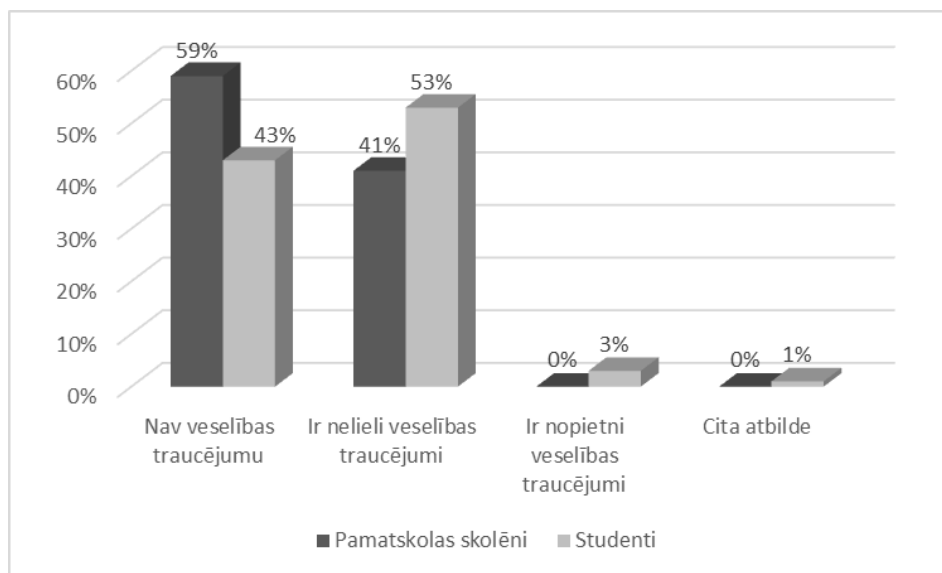
Pētījumā tika veikta Rīgas Valsts 2. ģimnāzijas pamatskolas 9. klašu skolēnu un Latvijas Universitātes pedagoģijas specialitātes pirmo kursu studentu anketēšana. Ar anketēšanas palīdzību tika noskaidrots skolēnu un studentu veselības stāvokļa pašvērtējums, fizisko aktivitāšu līmenis un to izmaiņas pēdējo

gadu laikā, stresa izjūtas pašvērtējums, labizjūtas pašvērtējums skolā vai augstskolā un mājās un skolēnu un studentu uzskati par svarīgākajām aktivitātēm, kas jāveic, lai saglabātu labu veselības stāvokli. Anketā norādītās aktivitātes jauniešiem bija jāsarindo hierarhiskā secībā virzienā no svarīgākās uz mazāk svarīgām. Pavisam tika aptaujāti 130 respondenti: 68 Latvijas Universitātes studenti un 62 Rīgas Valsts 2. ģimnāzijas pamatskolas skolēni.

Pētījuma rezultāti tika matemātiski apstrādāti un rezultātu statistiskā ticamība novērtēta ar SPSS metodes palīdzību, izmantojot Manna-Vitnija U testu.

Rezultāti Results

Pētījuma rezultāti parādīja, ka lielākā daļa aptaujāto pamatskolas skolēnu (59 %) uzskata, ka viņiem nav veselības traucējumu (skat. 1. att.). Pārējie skolēni (41 %) atzīmē, ka viņiem ir nelieli veselības traucējumi. 43 % universitātes pedagoģijas specialitātes studentu uzskata, ka viņiem nav veselības traucējumu, 53 % norāda, ka viņiem ir nelieli veselības traucējumi, bet 3 % atzīst, ka viņiem ir nopietni veselības traucējumi. Lai gan statistiski ticamas atšķirības starp skolēniem un studentiem veselības stāvokļa pašvērtējumā nav, tomēr salīdzinoši lielāks skaits studentu atzīmē nelielus veselības traucējumus.

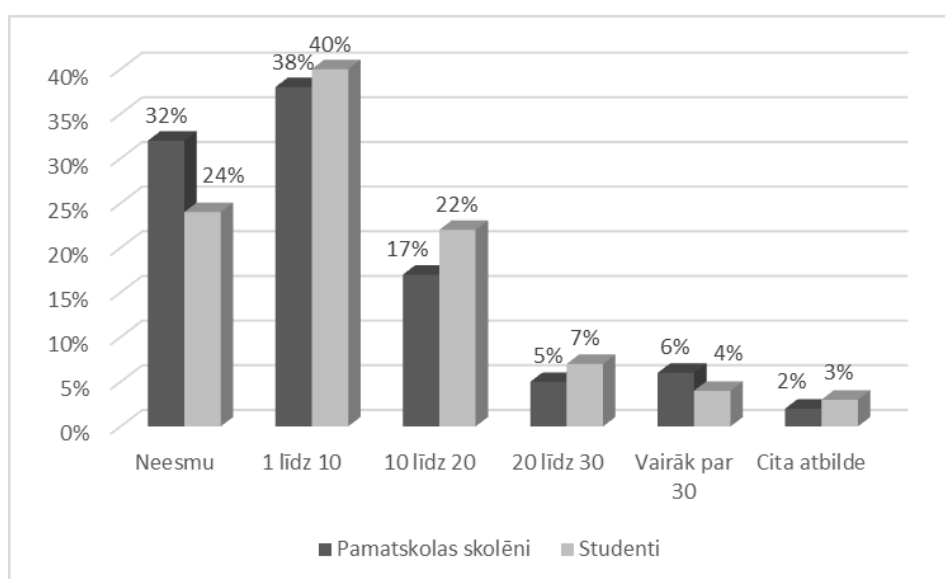


1. att. **Pamatskolas skolēnu un universitātes studentu veselības stāvokļa pašvērtējums (% no respondentu skaita grupās)**

Fig. 1. The self-estimation of health level of basic school and university students (in % from number of respondents in groups)

Lielāks skaits pamatskolas skolēnu (32 %), salīdzinot ar universitātes studentiem (24 %), norāda, ka pēdējā gada laikā nav slimājuši (skat. 2. att.). Daudzi skolēni (38 %) un studenti (40 %) slimības dēļ ir kavējuši 1 – 10 dienas. Tikai 6 % skolēnu un 4 % studentu slimības dēļ pēdējā gada laikā ir kavējuši vairāk nekā 30 dienas.

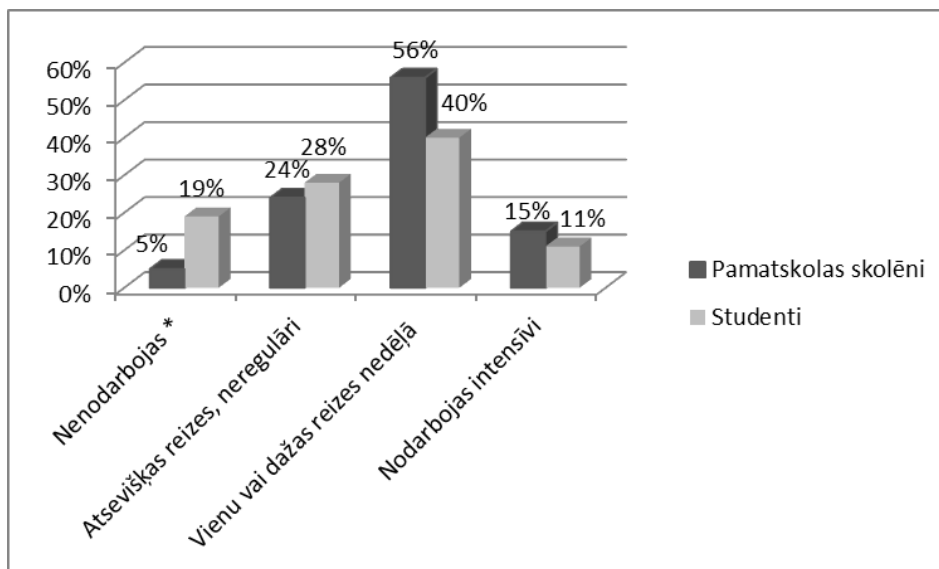
Ievērojami lielāks skaits aptaujāto pedagogijas specialitātes studentu (19 %), salīdzinājumā ar pamatskolas skolēniem (5 %), ar fiziskajām aktivitātēm praktiski nenodarbojas ($p < 0,01$) (skat. 2. att.). 56 % aptaujāto skolēnu un 40 % studentu ar fiziskām aktivitātēm nodarbojas vienu vai dažas reizes nedēļā. Kopumā pamatskolas skolēnu fizisko aktivitāšu līmenis ir augstāks nekā universitātes studentu fiziskās aktivitātes līmenis.



2. att. Pamatskolas skolēnu un universitātes studentu slimības dēļ kavēto dienu skaits pēdējā gada laikā (% no respondentu skaita grupās)

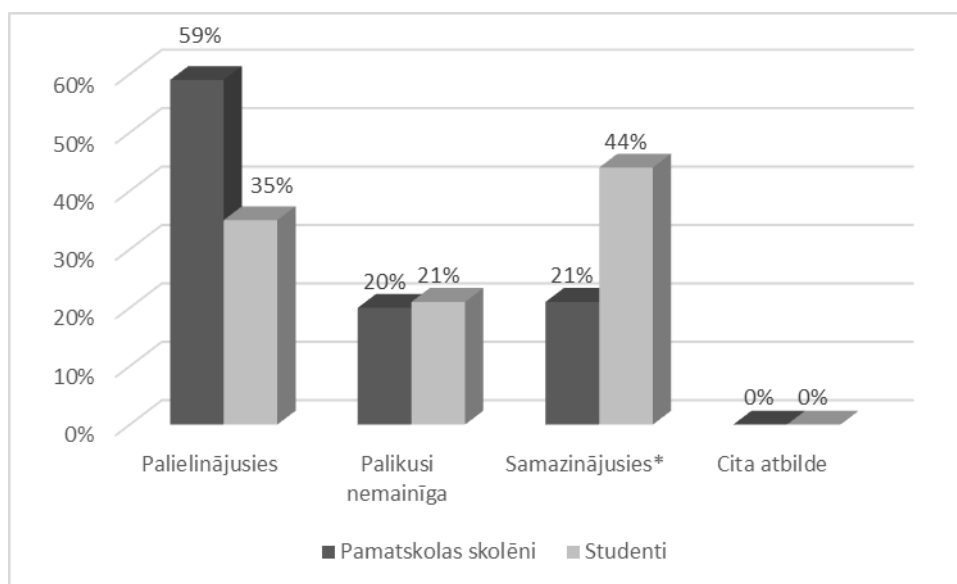
Fig. 2. Number of delayed days due to basic school and university student's illness during last year (in % from number of respondents in groups)

Lielākā daļa (59 %) aptaujāto pamatskolas skolēnu norāda, ka viņu fiziskā slodze pēdējā gada laikā ir palielinājusies (skat. 4. att). Tikai 35 % studentu atzīmē, ka viņu fiziskā slodze ir palielinājusies, bet 44 % norāda, ka tā ir samazinājusies. 21 % skolēnu pēdējo gadu laikā slodze ir samazinājusies. Kopumā aptaujas rezultāti liecina, ka vairumam skolēnu fiziskā slodze pēdējo gadu laikā ir palielinājusies, bet studentiem – palikusi nemainīga vai samazinājusies.



3. att. Pamatskolas skolēnu un universitātes studentu fizisko aktivitāšu līmenis (% no respondentu skaita grupās) (* $p < 0,01$)

Fig. 3. Physical activity level of basic school and university students (in % from number of respondents in groups) (* $p < 0,01$)



4. att. Pamatskolas skolēnu un universitātes studentu fiziskās slodzes izmaiņas pēdējā gada laikā (% no respondentu skaita grupās) (* $p < 0,01$)

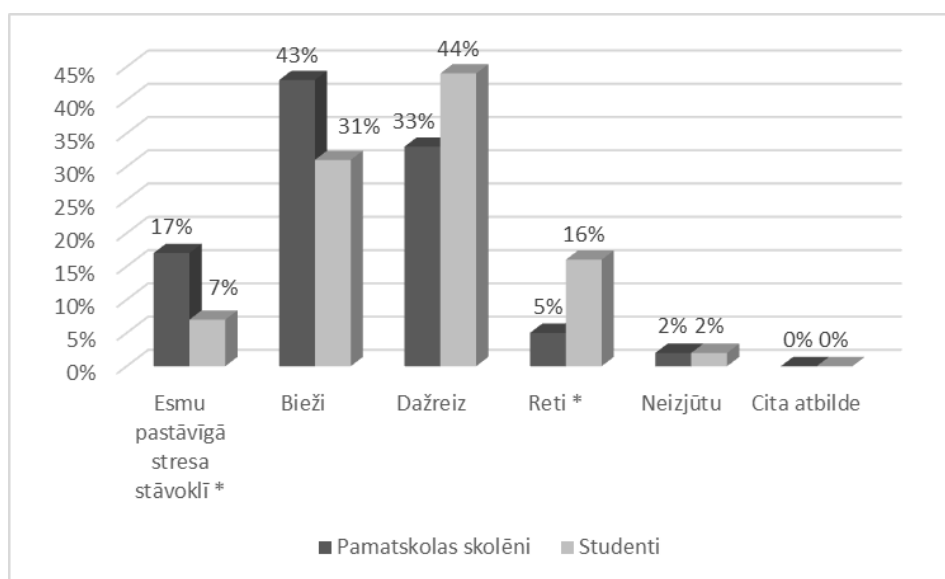
Fig. 4. Changes of physical load of basic school and university students during last year (in % from number of respondents in groups) (* $p < 0,01$)

Zinātnieku pētījumi liecina, ka mazkustīgs bērnu un jauniešu dzīvesveids ir nopietna problēma, kas veicina veselības pasliktināšanos. ASV zinātnieku veiktais pētījums parāda, ka fiziskās aktivitātes samazināšanās sākas jau

pusaudžu gados (Kahn et al., 2008). Autori izdara secinājumu, ka jāveic pasākumi, lai iesaistītu bērnus fiziskās aktivitātēs jau pirms pusaudžu vecuma iestāšanās, un tās turpinātos arī tālākajos dzīves posmos.

Mūsu iepriekšējie pētījumi liecina, ka pamatskolas skolēnu attieksme pret sportu kopumā ir pozitīva, bet lauku skolu skolēni aktīvāk apmeklē sporta nodarbības nekā pilsētu skolu skolēni (Porozovs et al., 2015). Nepieciešams panākt, lai arī pēc skolas beigšanas jauniešu fiziskā aktivitāte nesamazinātos. Lai to panāktu jāveic pasākumi, kas palielinātu jauniešu interesi par sportu, piemēram, augstskolās izveidotas labiekārtotas sporta zāles, veicinātu viņu iesaistīšanos sporta nodarbībās un citās fiziskās aktivitātēs.

Anketēšanas rezultāti parādīja, ka ievērojami lielāks skaits skolēnu (17 %), salīdzinājumā ar studentiem (7 %), atrodas pastāvīgā stresa stāvoklī ($p < 0,01$) (skat. 5. att.). 43 % skolēnu un 31 % studentu atzīmē, ka skolā vai augstskolā bieži izjūt stresu. Pētījuma rezultāti parāda, ka aptaujātie jaunieši, sevišķi skolēni, ir pakļauti regulāra stresa ietekmei, kas var negatīvi ietekmēt viņu veselības stāvokli.

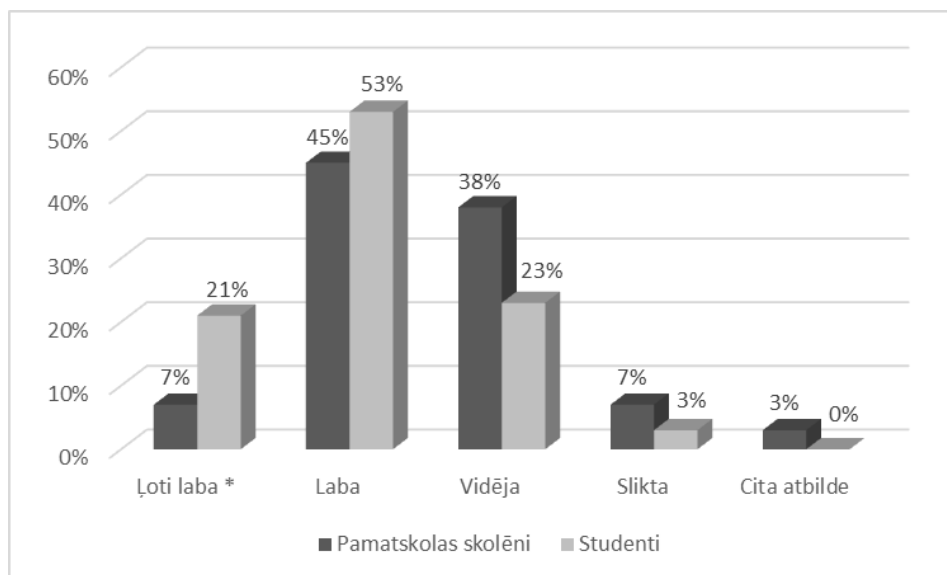


5. att. **Pamatskolas skolēnu un universitātes studentu stresa izjūtas biežuma pašvērtējums (% no respondentu skaita grupās) (* $p < 0,01$)**

Fig. 5. The self-estimation of the frequency of feeling stress of basic school and university students (in % from number of respondents in groups) ($p < 0,01$)*

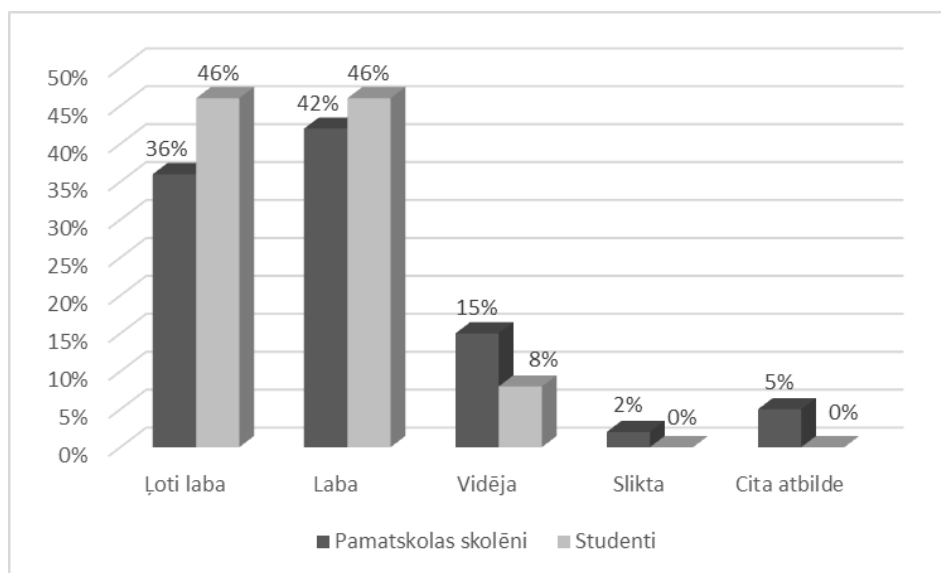
Ievērojami lielāks skaits universitātes studentu (21 %), salīdzinājumā ar pamatskolas skolēniem (7 %), uzskata, ka viņi augstskolā vai attiecīgi skolā jūtas ļoti labi ($p < 0,01$) (skat. 6. att.). Arī studentu skaits, kuru labizjūta augstskolā ir laba (53 %) ir lielāks, nekā skolēnu skaits, kuri labi jūtas skolā (45 %). Salīdzinoši liels skaits skolēnu (38 %) savu labizjūtu skolā novērtē kā

vidēju, bet 7 % kā sliktu. Tikai 3 % studentu ir atzīmējuši, ka slikti jūtas augstskolā. Kopumā vairums studentu augstskolā jūtas labāk, nekā pamatskolas skolēni skolā.



6. att. Pamatskolas skolēnu un universitātes studentu labizjūta skolā (% no respondentu skaita grupās) (* $p < 0,01$)

Fig. 6. The feeling of basic school and university students at school (in % from number of respondents in groups) (* $p < 0,01$)

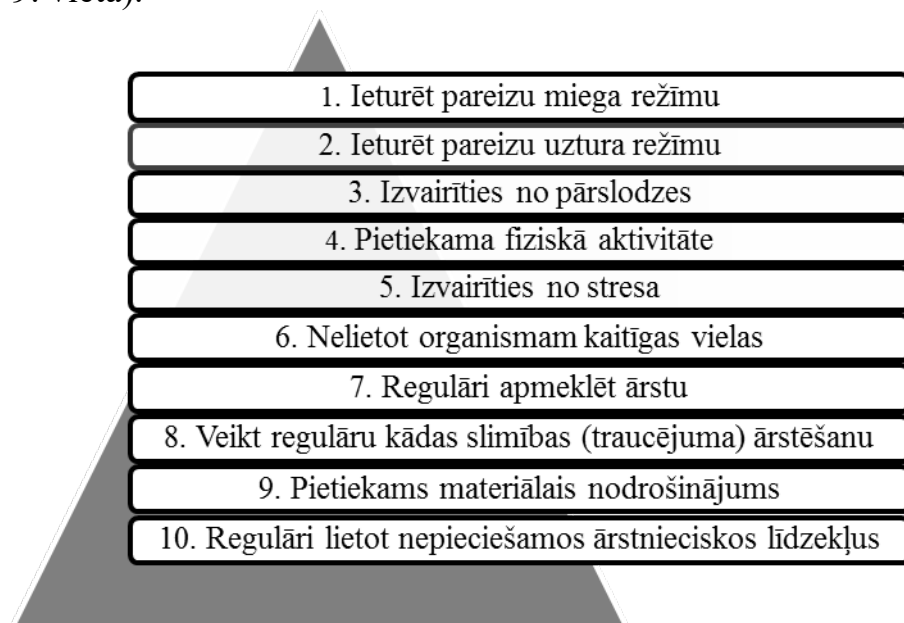


7. att. Pamatskolas skolēnu un universitātes studentu labizjūta mājās (% no respondentu skaita grupās) (* $p < 0,01$)

Fig. 7. The feeling of basic school and university students at home (in % from number of respondents in groups) (* $p < 0,01$)

Lielākā daļa aptaujāto skolēnu un arī studentu atzīmē, ka mājās jūtas ļoti labi vai labi. Tomēr salīdzinoši lielāks skaits studentu (46 %), salīdzinājumā ar skolēniem (36 %), ir atzīmējuši, ka mājās jūtas ļoti labi (skat. 7. att.). 15 % skolēnu norāda, ka mājās jūtas vidēji. Kopumā skolēniem ir augstāks stresa līmenis, bet pašsajūta, sevišķi skolā, ir sliktāka nekā studentiem.

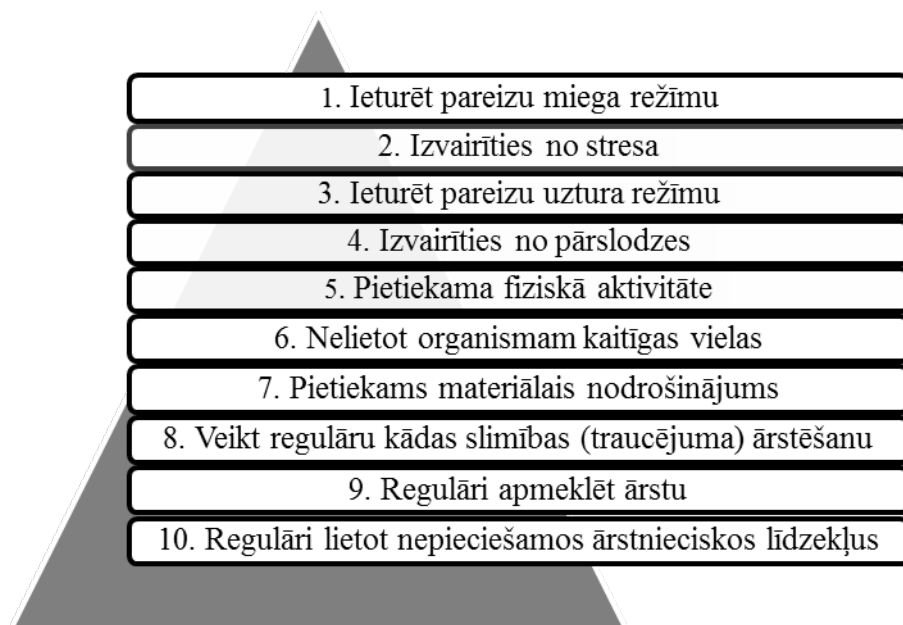
Gan aptaujātie skolēni (skat. 8. att.), gan studenti (skat. 9. att.) uzskata, ka vissvarīgākā nozīme laba veselības stāvokļa saglabāšanā ir pareiza miega režīma ieturēšanai. Jādomā, ka skolēniem un studentiem sakarā ar intensīvo dzīves ritmu nav vienkārši atvēlēt nepieciešamo laiku miegam. Kā otru svarīgāko aktivitāti labas veselības saglabāšanai skolēni ir atzīmējuši ieturēt pareizu uztura režīmu, bet studenti – izvairīties no stresa. Skolēni par svarīgiem faktoriem veselības saglabāšanā uzskata arī izvairīšanos no pārslodzes (ierindots 3. vietā), izvairīšanos no stresa (ierindots 5. vietā), un arī pietiekamas fiziskā aktivitātes (ierindots 4. vietā). Arī studenti minētos faktoros uzskata par svarīgiem labas veselības saglabāšanā: ieturēt pareizu uztura režīmu ierindots 3. vietā, izvairīties no pārslodzes – 4. vietā, bet pietiekamas fiziskās aktivitātes – 5. vietā. 6. vietā gan skolēni, gan arī studenti ir ierindojuši faktoru – nelietot organismam kaitīgas vielas. Kā salīdzinoši mazāk svarīgas aktivitātes veselības saglabāšanai skolēni un arī studenti ir atzīmējuši tādus pasākumus kā: regulāri lietot nepieciešamos ārstnieciskos līdzekļus (10. vieta), veikt regulāru kādas slimības (traucējuma) ārstēšanu (8. vieta) un regulāri apmeklēt ārstu (skolēni ierindojuši 7. vietā, bet studenti – 9. vietā).



8. att. Pamatskolas skolēnu uzskati par svarīgākajām aktivitātēm, kas jāveic, lai saglabātu labu veselības stāvokli (% no respondentu skaita grupās)

Fig. 8. The opinion of basic school students about most important activities what should be done for obtaining good health level (in % from number of respondents in groups)

Anketēšanas rezultāti parāda, ka gan skolēni, gan arī studenti par svarīgāko veselības saglabāšanā uzskata veselīga dzīvesveida ievērošanu un izvairīšanos no stresa. Ļoti svarīgi, ka jaunieši ir izpratuši veselīga dzīvesveida lomu veselības saglabāšanā. Iespējams, ka tādi faktori kā regulāra ārsta apmeklēšana un nepieciešamo ārstniecisko līdzekļu lietošana tiek novērtēti kā mazāk svarīgi faktori, jo vairumam jauniešu nav nopietnu veselības traucējumu.



9. att. Universitātes studentu uzskati par svarīgākajām aktivitātēm, kas jāveic, lai saglabātu labu veselības stāvokli (% no respondentu skaita grupās)

Fig. 9. The opinion of university students about most important activities what should be done for obtaining good health level (in % from number of respondents in groups)

Secinājumi Conclusions

1. Lielākā daļa aptaujāto pamatskolas skolēnu un universitātes studentu uzskata, ka viņiem nav veselības traucējumu vai ir nelieli veselības traucējumi. Lielāks skaits studentu, salīdzinājumā ar skolēniem, atzīmē nelielus veselības traucējumus, bet lielāks skaits skolēnu (32 %), salīdzinājumā ar studentiem (24 %) norāda, ka pēdējā gada laikā nav slimojuši.
2. Studentu fiziskā aktivitāte kopumā ir zemāka nekā pamatskolas skolēnu fiziskā aktivitāte. Lielāks skaits aptaujāto pedagoģijas specialitātes studentu (19 %), salīdzinājumā ar skolēniem (5 %) ar fiziskajām aktivitātēm praktiski nenodarbojas. Lielākai daļai skolēnu fiziskā slodze pēdējo gadu

- laikā ir palielinājusies, bet studentiem – palikusi nemainīga vai samazinājusies.
3. Daudzi skolēni un studenti regulāri izjūt stresu. Lielāks skaits skolēnu (17 %), salīdzinājumā ar studentiem (7 %), atrodas pastāvīgā stresa stāvoklī.
 4. Universitātes studenti kopumā augstskolā jūtas labāk, nekā pamatskolas skolēni jūtas skolā. Lielāks skaits studentu (21 %), salīdzinājumā ar skolēniem (7 %), uzskata, ka viņi augstskolā jūtas ļoti labi. Vairums studentu un skolēnu mājās jūtas ļoti labi vai labi.
 5. Vairums skolēnu un studentu par svarīgāko veselības saglabāšanā uzskata aktivitātes, kas saistītas ar veselīga dzīvesveida ievērošanu (pareiza miega režīma ieturēšanu, pareiza uztura režīma ievērošanu, pietiekamas fiziskās aktivitātes un citus) un izvairīšanos no stresa un pārslodzes.

Summary

Sedentary lifestyle, psychological overload and long duration stress are important factors, which could cause health deterioration. Students are a group of people affected by all these factors. It is found that a high student's workload of homework combined with the presence of schoolwork-related stress have unfavourable adiposity indicators. On the other hand, healthy lifestyle could promote academic achievements and maintaining of the health. The aim of the study was to find out and compare the self-estimation of the health level, physical activities and feeling of the Riga basic school students and university pedagogical specialty students. The questionnaire of Riga 2nd Gymnasium 9th grade basic school students and University of Latvian 1st course pedagogical speciality students was carried out. Altogether 130 students were surveyed (68 university students and 62 basic school students). The results of the survey revealed that the majority of students consider that they have no health disturbances or they have minor health disturbances. More university students in comparison with basic school students note minor health disturbances. The physical activity of basic school students is higher than the physical activity of university students. More surveyed pedagogical speciality university students (19 %) in comparison with basic school students (5 %) practically are not engaged in physical activities. The physical load of majority of basic school students during last years has increased but the physical load of university students during last years has not changed or has decreased. The results of the survey showed that many students often feel stress. More basic school students (17 %) in comparison with university students (7 %) are regularly in the state of stress. University students feel better at university than basic school students feel at school. More university students (21 %) in comparison with basic school students (7 %) consider that they feel very good at university. The majority of students feel very good or good at home. The majority of students consider that the most important factors for maintaining good health level are activities connected with healthy lifestyle, such as proper sleep mood, proper nutrition regime, enough physical activities etcetera and avoidance from stress and overload.

Literatūra
References

- Cekule, L., Kamerāde, D., Mūrniece, D., Reinfelds, S., Urbāns, I., & Vazne, Ž. (2006). Vispārējās veselības aptaujas ticamība un faktoru struktūra Latvijā. *III Starptautiskā zinātniskā konference "Teorija praksei mūsdienu sabiedrības izglītībā"*, 64.-68.
- Faught, E. L., Ekwaru, J. P., Gleddie, D., Storey, K. E., Asbridge, M., & Veugelers, P. J. (2017). The combined impact of diet, physical activity, sleep and screen time on academic achievement: a prospective study of elementary school students in Nova Scotia, Canada. *International Journal of Behavioral Nutrition and Physical Activity*, 14, 1-13.
- Hofmann, M., Young, C., Binz, T. M., Baumgartner, M. R., & Bauer, N. (2018). Contact to Nature Benefits Health: Mixed Effectiveness of Different Mechanisms. *International Journal of Environmental Research and Public Health*. 15 (1). pii: E31. Retrieved from: <http://www.mdpi.com/1660-4601/15/1/31/htm>
- Kahn, J. A., Huang, B., Gillman, M. W., Field, A. E., Austin, S. B., Colditz, G. A., & Frazier, A. L. (2008). Patterns and determinants of physical activity in U.S. adolescents. *Journal of Adolescent Health*, 42, 369-377.
- Mašina, T., Kraljič, V., & Musil, V. (2016). Physical Activity and Health-promoting Lifestyle of First and Second Year Medical Students. *Pedrija Danas: Pediatrics Today*. 12 (2), 160-168.
- Michaud, I., Chaput, J. P., O'Loughlin, J., Tremblay, A., & Mathieu, M. E. (2015). Long duration of stressful homework as a potential obesogenic factor in children: a QUALITY study. *Obesity (Silver Spring)*, 23 (4), 815-822. Retrieved from: <https://www.ncbi.nlm.nih.gov/pubmed/25755164>
- Porozovs, J., Miķelsons, Z., & Voita, D. (2015). 9. klases skolēnu dzīvesveida īpatnības un mācību motivācija Latvijas pilsētas un lauku rajonos. Peculiarities of Lifestyle and Learning Motivation of 9th Grade Students in Cities and Rural Area Schools of Latvia. *Sabiedrība, integrācija, izglītība. Starptautiskās zinātniskās konferences materiāli. II daļa. 2015. gada 22.-23. maijs. Society, Integration, education. Proceedings of the International Scientific Conference. Vol. II, May 22nd-23rd, 2015*, 144. - 154.
- Ren, H., Zhou, Z., Liu, W. K., Wang, X., & Yin, Z. (2017). Excessive homework, inadequate sleep, physical inactivity and screen viewing time are major contributors to high paediatric obesity. *Acta Paediatrica*, 106 (1), 120-127. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27759894>
- Rusby, J. C., Westling, E., Crowley, R., & Light, J. M. (2014). Psychosocial Correlates of Physical and Sedentary Activities of Early Adolescent Youth. *Health Education & Behavior*, 41 (1), 42-51.
- Staufenbiel, S. M., Penninx, B. W. J. H., Spijker, A. T., Elzinga, B. M., & van Rossum, E. F. C. (2013). Hair cortisol, stress exposure, and mental health in humans: A systematic review. *Psychoneuroendocrinology*, 38 (8), 1220-1235.

SABIEDRĪBAS INFORMĒTĪBA PAR HIV INFEKCIJAS PREVENTĪVIEM PASĀKUMIEM

Public Awareness about HIV Prevention Measures

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Abstract. *Human immunodeficiency virus (HIV), which, when progressing, develops as acquired immunodeficiency syndrome (AIDS), has been known worldwide for over 30 years. It is one of the greatest epidemics that mankind has ever encountered. The number of HIV infections also increases in Latvia each year, as evidenced by official data from the Center for Disease Prevention and Control. In turn, information on infection with AIDS mechanisms, prevention measures is readily available in the mass media, medical institutions, etc. It also determined the purpose of the study - is the public well informed about HIV infection and its preventive measures?*

Keywords: *immunodeficiency virus, pathogens, prevention measures.*

Ievads

Introduction

Šobrīd visā pasaulē ar imūndeficīta vīrusu (HIV) inficēto cilvēku skaits sastāda 36,9 miljoni. HIV infekcija ir smaga slimība, ko ierosina cilvēka imūndeficīta vīruss, kas ilgu laiku persistē limfocītos, makrofāgos un citās šūnās, tāpēc veidojas imūnsistēmas un citu sistēmu bojājumi, kuri neizbēgami noved pie nāves (Rubins, 2001). Visā pasaulē jau vairāk nekā 30 gadus ir pazīstams cilvēka imūndeficīta vīruss, kas progresējot attīstās par iegūto imūndeficīta sindromu (AIDS). Inficēšanās mehānisms ir ļoti labi pazīstams, skaidri definēti profilakses pasākumi, taču tiek reģistrēti arvien jauni HIV infekcijas gadījumi visā pasaulē. (Stūre, 2015). Šī ir viena no lielākajām epidēmijām, ar kādu cilvēce jebkad ir sastapusies, un mēs neesam pārāk veiksmīgi cīņā ar to. (Viljamsa, 2007). Zinātniskajā literatūrā paaugstināta inficēšanās riska uzvedība parasti tiek saistīta ar vājām zināšanām par inficēšanās iespējām ar HIV.

HIV/AIDS gadījumi Latvijā tiek reģistrēti kopš 1987. gada. Pirmie HIV infekcijas gadījumi Latvijā, tāpat kā citur pasaulē, pirmkārt bija atklāti starp vīriešiem, kuri to bija ieguvuši homoseksuālu dzimumkontakta rezultātā.

1990. gadā atklāja pirmo gadījumu, kad heteroseksuālu dzimumkontakta ceļā bija inficējusies sievietē. Līdz deviņdesmito gadu vidum infekcija praktiski

izplatījās tikai dzimumkontakto, un katru gadu tika atklāti samērā maz jauni HIV gadījumi.

1997. gads iezīmēja jaunu pavērsienu – HIV infekcija iekļuva injicējamo narkotiku lietotāju vidē, un kopīgu narkotiku injicēšanas piederumu lietošanas rezultātā ļoti strauji izplatījās starp narkomāniem. Mūsdienās šī problēma ir ļoti aktuāla arī starp grūtniecēm un jaundzimušajiem. (Slimību profilakses un kontroles centrs, 2016). Slimību profilakses un kontroles centra oficiālie dati liecina, ka sākot ar 2010. gadu HIV inficēšanās gadījumu skaits Latvijā pastāvīgi palielinās. 2010. gadā tika reģistrēti 274 jauni gadījumi inficēšanās ar HIV infekciju, bet 2015. gadā inficētu gadījumu skaits sasniedza 393. Kopējais reģistrētais Latvijā HIV inficēto cilvēku skaits 2010. gadā bija 4889 un 2015. gadā – 6607, 2017. gadā - 7189 personas. (Slimību profilakses centrs, 2016).

Masu mediji arvien biežāk un pārliecinošāk ziņo, ka HIV inficēto skaits palielinās, diemžēl, Latvijā šajā jautājumā ieņem pirmo vietu pasaulē. Tātad, infekcija dzīvo sabiedrībā, bet, vienlaicīgi, inficēšanas ceļš nav zināms, jo datu trūkums to neļauj noteikt.

Joprojām šī tēma ir aktuāla, jo neraugoties uz plašu informācijas pieejamību inficēto personu skaits arvien pieaug. Tas arī noteica pētījuma *mērķi*: apzināt vai sabiedrība ir pietiekoši informēta par HIV infekciju, tās preventīviem pasākumiem un noteikt to sekojošus nosacījumus.

Cilvēka imūndeficīta vīruss, inficēšanās ceļi un diagnostikas iespējas *Human Immunodeficiency Virus, Infection Paths and Diagnostic Options*

Cilvēka imūndeficīta vīrusu (angl. vai. HIV - *Human Immunodeficiency Virus*) definē kā hronisku, lēni progresējošu infekcijas slimību. Vīrusa darbības laikā pakāpeniski tiek iznīcināta cilvēka imūnsistēma, līdz ar to organisms zaudē spēju pretoties dažādām infekcijām un audzējiem.

Iegūtais imūndeficīta sindroms ir slimību komplekss, kas attīstās cilvēka imūndeficīta vīrusa infekcijas gala stadijā uz novājinātu organisma aizsargspēju fona, kad cilvēka imūnsistēma ir izsmēlusis savas rezerves un nespēj cīnīties pret saslimšanām. Saīsināti to apzīmē AIDS (angļu valodā - AIDS - *Acquired Immunodeficiency Syndrome*). (Kondrate u.c., 2003). Pēc gandrīz visu zinātnieku un autoru domām, HIV infekcija uzskatāma par samērā jaunu slimību, jo šī slimība apzināta tikai 1981. gadā, kad ASV publicēts pirmais Slimību kontroles centra (Centre for Diseases Control - CDC) ziņojums par retas pneimonijas un vēlīnas Kapoši sarkomas gadījumiem jaunu homoseksuālu vīriešu vidū. (Aldiņš, 2009). 1982. gadā AIDS slimnieki tika atklāti jau 19 pasaules valstīs, katrus 6-8 mēnešus reģistrēto skaits divkāršojās. 1986. gadā, piecus gadus pēc pirmajiem gadījumiem, reģistrēto AIDS gadījumu skaits pārsniedza desmit tūkstošus un slimību raksturoja ar vārdu “pandēmija”.

Slimības izraisītājs ir retrovīruss, kas inficē imūnsistēmas aizsargšūnas – limfocītus – un samazina to skaitu. B limfocīti izdala antivielas ķermeņa šķidrums un audos, tā ir pazīstama kā humorālā imunitāte. T limfocīti spēj iespieties dzīvās šūnās, to sauc par celulāro imunitāti. HIV inficē arī monocītus un makrofāģus, kuru uzdevums ir nogādāt antigēnu uz šūnām, tādējādi aizsākot ķermeņa atbildes reakciju. HIV, iekļuvis ķermenī, galvenokārt uzbrūk CD4 molekulām, kas lielākoties atrodas uz T4 helperu limfocītu šūnu membrānas. HIV, inficējot T4 limfocītu, iznīcina CD4 molekulu. HIV invāzijai pastiprinoties, celulārā un humorālā imunitāte vājinās un parādās šai slimībai raksturīgās gadījuma infekcijas. (Baudere, Ozola u.c., 2001).

Eiropas Slimību profilakses un kontroles centra svarīgākie fakti no direktora 2016. gada ziņojuma liecina, ka Eiropas Savienības valstīs 810 000 cilvēku dzīvo ar HIV, turklāt viens no septiņiem iedzīvotājiem neapzinās savu HIV pozitīvo statusu.

20. gs beigās un 21. gs sākumā HIV izplatībai jau ir pandēmijas raksturs. Tās izplatība paplašinājās visās pasaules reģionos.

Veselības Ministrijas Sabiedrības veselības departamentā ir izstrādāts HIV infekcijas, seksuālās transmisijas infekciju, B un C hepatīta izplatības ierobežošanas rīcības plāns 2018.-2020. gadam.

Tā rīcības virzienos aktualizēta sabiedrības izglītošana ar HIV inficēšanas riskiem un agrīnu diagnostiku. Darbs ar apzinātām riska grupām (INL, prostitūcijā iesaistītās personas, MSM), ka arī profilakses un terapijas uzlabošana riska grupās, diagnostikas, ārstēšanas un epidemioloģiskās uzraudzības uzlabošana (Kaitējuma mazināšanas pasākumi 2018.-20202. gadam). Slimību profilakses un kontroles centra 2014. gada materiālos īpaša vieta atvelēta sabiedrības izglītošanai par HIV, inficēšanās riskiem un agrīnu diagnostiku, aktualizējot apstākļus, kādos var inficēties ar HIV infekciju:

- nedrošu seksuālu kontaktu laikā;
- personas, intravenozo narkotiku lietotāji;
- personas, kas atradās vai atrodas ieslodzījumā;
- personas, kuru ārstēšanā izmantotas asinis vai no asinīm gatavoti preparāti;
- pīrsinga un tetovēšanas laikā ar nesteriliem koplietošanas instrumentiem;
- HIV inficēta māte var inficēt savu bērniņu grūtniecības un dzemdību laikā, kā arī barojot ar krūti.

Tika uzsvērts arī, kā nevar inficēties ar HIV:

1. Sadzīves kontaktos:

- lietojot kopīgus sadzīves priekšmetus (traukus, telefonu, apģērbu, dvieli),

- lietojot kopīgu uzturu,
- braucot sabiedriskajā transportā,
- peldoties baseinā, apmeklējot kopīgas tualetes, dušas,
- saskaroties ar cilvēka bioloģiskajiem šķidrumiem, ja vien tie nesatur asinis!

2. Insektu un dzīvnieku (suņu, kaķu) kodumu vai skrāpējumu rezultātā.

Cilvēks ir vienīgais HIV pārnēsātājs. Vīrusam nav starpsaimnieka - nokļūstot kukaiņa vai dzīvnieka organismā. HIV iet bojā, jo vide ir tam nelabvēlīga. Turklāt brīdī, kad ods sūc asinis, tas ielaiž brūcē nevis iepriekšējā upura asinis, bet gan savas siekalas, kas HIV infekciju nesatur. (Slimību profilakses un kontroles centrs, 2014).

HIV infekcijas profilakses veidi

Visā pasaulē HIV/AIDS profilaksei tiek veltīta ļoti liela uzmanība, jo infekcija nav pilnīgi izārstējama un cilvēkiem, kuri to ir ieguvuši, jārēķinās ar sekām un zināmiem ierobežojumiem visu mūžu, lai vēl vairāk nekaitētu savai veselībai un neapdraudētu citu cilvēku veselību.

Zinātnieki Taylor, Clayden u.c. 2014. gadā, Rubins, 2001.gadā izstrādāja profilakses pasākumu kompleksu pret iespējamu inficēšanos ar HIV.

Pētījuma metodoloģija un iegūtie dati ***Research methodology and data obtained***

Lai noskaidrotu cilvēku informētību par HIV infekciju un tās preventīviem pasākumiem tika veikts pētījums "x" pilsētas uzņēmumos, augstākās izglītības iestādē, ārstniecības iestādē, publiskās vietās. Pētījums tika veikts no 2016. gada 30. marta līdz 2017. gada 21. maijam. Tika lūgti atbildēt uz jautājumiem 100 respondenti, kuru vidū bija gan 64 sievietes, gan 36 vīrieši vecumā no 18 gadiem līdz 40 gadiem.

Pētīšanas metodes izvēli noteica pētāmās parādības, mūsu gadījumā sabiedrības informētības par HIV infekciju un tās preventīviem pasākumiem, mērīšana un šo informētību sekmējošu nosacījumu noteikšana.

Pētījumā teorētiskā metode ir analītiskā, lai literatūrā apzinātu HIV infekcijas būtību, veidus, inficēšanas ceļus, infekcijas profilakses iespējas.

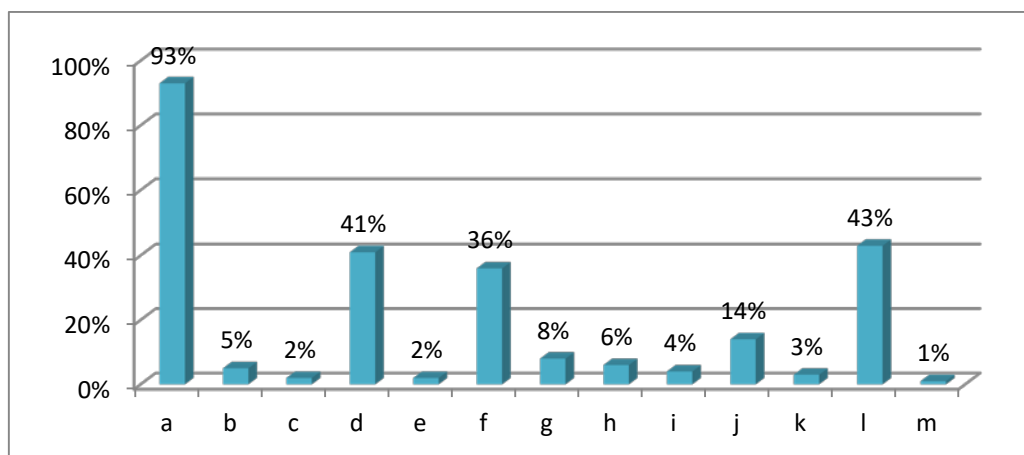
Empīriskajā darba daļā datu vākšanai izvēlējās anketēšanu bez pētījuma autora tiešas līdzdalības. Tas ļāva iegūt plašus datus. Aptaujas jautājumi tika formulēti nepārprotami un konkrēti jautājumi ar vairākiem atbilžu variantiem:

- Kādā veidā var izsargāties no HIV infekcijas?
- Kādi profilakses pasākumi medicīnas iestādēs tiek veikti, lai izvairītos no HIV infekcijas?
- Kad izmeklēšana uz HIV infekciju ir obligāta pēc LR MK noteikumiem?

Datu apstrāde izmantota primārā matemātiski statistiska metode, kas ļāva atklāt sabiedrības informētības par HIV infekciju dominējošas tendences. Ar kvantitatīvās metodes palīdzību tika noteikts vidējais aritmētiskais un parādība izteikta procentuāli.

Respondentiem tika piedāvāts izvērtēt minētos jautājumus un izteikt savu viedokli. Anketēšana notika anonīmi un visa informācija ir konfidenciāla. Pētījumā piedalījās sievietes un vīrieši ar vidējo vai vidējo profesionālo izglītību, strādājoši dažādās sfērās.

Izpētot respondentu atbildes par to, kādā veidā var izvairīties no HIV infekcijas, atbildes bija ļoti plašā amplitūdā (skat. 1. attēlu):



1. att. Kādā veidā var izvairīties no HIV infekcijas

Fig. 1. How can you prevent HIV infection (respondents' answers)

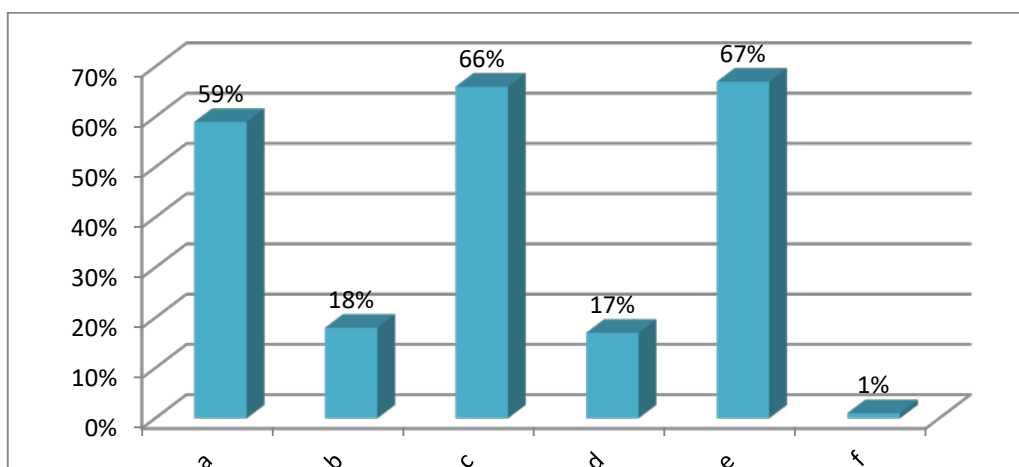
Lielākā daļa respondentu (93 %) uzskata, ka izvairīties no HIV infekcijas var lietojot prezervatīvu jebkura seksuāla kontakta laikā.

Šīs respondentu atbildes norāda uz to, ka ne visi respondenti ir pietiekoši informēti par infekcijas būtību un izvairīšanās veidiem no HIV infekcijas.

Respondentu viedokļi par profilakses pasākumiem medicīnas iestādēs, lai izvairītos no HIV infekcijas, atspoguļoti 2. attēlā.

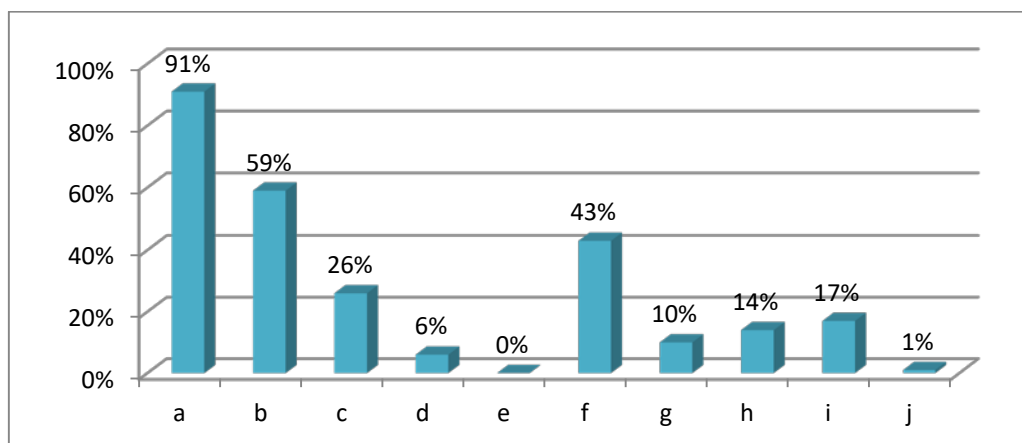
Izpētot respondentu atbildes par to, kādā veidā var izvairīties no HIV infekcijas, viedokļi arī bija diezgan dažādi. 93 % respondentu uzskata prezervatīva lietošanu par visdrošāko profilakses līdzekli. Ne visi cilvēki ir informēti par to, ka inficēties var arī manikīra laikā vai veicot pīrsingu, tas ir jebkuras invazīvas skaistumkopšanas procedūras laikā. Diemžēl ir arī tādi respondenti, kuri ir pārliecināti, ka izvairīties no HIV infekcijas var izmantojot repelentus, lietojot hormonālās kontracepcijas līdzekļus, ēdot tikai no personāliem traukiem, neapmeklējot sporta zāles, publiskus baseinus, mazgājot bieži rokas vai arī izvairīties no HIV inficētiem cilvēkiem. Protams, ne visi respondenti izvēlējās

tamlīdzīgas atbildes, bet tomēr tas uzrāda uz to, ka ne visi ir pietiekoši informēti par HIV infekciju.



2. att. Profilakses pasākumi medicīnas iestādēs, lai izvairītos no HIV infekcijas
 Fig. 2. Preventive measures medic. institutions to Avoid HIV Infection

Lai pārbaudītu respondentu zināšanas par HIV infekcijas izmeklēšanas iespējām tika uzdots vēl viens jautājums “Kādos gadījumos izmeklēšana uz HIV infekciju ir obligāta pēc Latvijas Republikas MK noteikumiem?” (skat. 3. attēlu).



3. att. Respondentu izpratne par gadījumiem, kad izmeklēšana uz HIV infekciju ir obligāta pēc Latvijas Republikas MK noteikumiem
 Fig. 3. Understanding of respondents about cases when HIV testing is mandatory in Latvia following Cabinet regulations

Respondentiem tika piedāvāti vairāki atbilžu varianti.

Gandrīz visi respondenti (91 %) uzskata, ka izmeklēšana uz HIV infekciju ir obligāta pēc MK noteikumiem visiem asins, audu, orgānu donoriem.

59 % respondentu atbildēja - “grūtniecēm 7.-8. un 25. grūtniecības nedēļā”.

43 % respondentu izvēlējās atbildi - “personām, kas nodarbojas ar prostitūciju (HIV tests 1 reizi mēnesī)”.

Satraucoša ir 1 % respondentu atbilde “nezinu”.

Secinājumi **Conclusions**

Apgūtā literatūra un pētījuma dati ļauj apgalvot, ka:

- mūsdienās HIV infekcija ir izplatīta, smaga slimība, ar kuru var saslimt jebkurš cilvēks, ja nerūpēsies par savu veselību un neievēros vienkāršus profilakses pasākumus, lai neinficētos ar HIV infekciju;
- viens no drošākajiem HIV infekcijas profilakses pasākumiem ir kontracepcijas līdzekļu lietošana dzimumkontakta laikā;
- veiktais praktiskais pētījums liecina, ka pārsvarā respondenti uzskata, ka visdrošākais seksuālās aktivitātes modelis ir seksuālas attiecības ar vienu pastāvīgu partneri;
- respondenti ir informēti par visdrošākajām vietām, kur ieteicams veikt invazīvas procedūras;
- lielākoties, respondenti ir labi informēti HIV infekcijas prevencijas pasākumu ievērošanas jautājumos medicīnas iestādēs (donoru asins pārbaude, instrumentu utilizācija, dezinfekcija un sterilizēšana). Gandrīz visi respondenti zina par asins, audu un orgānu donoru obligāto pārbaudi uz HIV infekciju, bet tikai puse no aptaujātajiem zina par grūtnieču un personu, kas nodarbojas ar prostitūciju pārbaudi uz HIV infekciju;
- pārsvarā respondenti orientējas HIV infekcijas būtībā, aktualitātē un izplatīšanās jautājumos, bet preventīvos pasākumos un diagnostikas jautājumos respondenti ir informēti virspusēji un grib zināt vairāk par HIV infekciju (par ko liecina respondentu atbildes).

Tas liecina, ka sabiedrībai tiek piedāvāts bagātīgs informācijas klāsts par HIV un AIDS slimību būtību un informācijas preventīvajiem pasākumiem, bet ārstiem, māsām biežāk jāizglīto pacientiem par HIV infekcijas profilaksi. Masu medijos mērķtiecīgāk jāizvieto reklāmas par HIV infekcijas izplati un inficēšanās veidiem. Reklāmas stendos ne tikai izvietot, bet arī regulāri atjaunot un papildināt izglītojošo informāciju par HIV infekcijas riska faktoriem un preventīviem pasākumiem. Skolu programmās lietderīgi būtu ieviest autonomo mācību kursu par seksuāli transmisīvām infekcijām un to preventīviem pasākumiem.

Summary

The study literature and statistics suggest that:

- Today, HIV infection is a common, serious illness that can be infected by any person if he does not care about his health and will not take simple preventive measures to prevent HIV infection;
- One of the measures to prevent HIV infection is the use of contraception during sexual contact;
- A practical study has shown that mostly respondents believe that the most reliable model of sexual activity is sexual relations with one permanent partner;
- Respondents know the most safe places where invasive procedures are recommended;
- Mostly, respondents are well-informed about HIV infection prevention measures in medical institutions (blood donation testing, instrument utilization, disinfection and sterilization). Almost all respondents are aware of the mandatory screening for HIV, tissue and organ donors, but only half of those surveyed know about pregnant women and those who carry out prostitution testing for HIV infection;
- Most respondents tend to focus on the nature, actuality and distribution of HIV infection, while respondents in preventive and diagnostic matters are superficially informed and want to know more about HIV infection (as evidenced by respondents' responses).

This suggests that the public is offered a wealth of information on the nature of HIV and AIDS and information prevention activities, but doctors and nurses are more likely to tell patients about HIV infection prevention. Mass media need to target advertising more effectively about the spread of HIV infection and the types of infection. Advertising stands not only place but also regularly update and supplement educational information on HIV infection risk factors and preventive measures.

Literatūra References

- Aldiņš, P. (2009). HIV infekcija. *Žurnāls Latvijas ārsts, Nr. 9.*
- Baudere, S., Ozola, J., Druvietis, J., Štāle, D., Ķīse, L., Danilāne, I., & Preimane, G. (2001). *Medicīniskās aprūpes rokasgrāmata.* R.: Jumava.
- Kondrāte, I., Kuņicka, I., Rocēna, I., & Jātniece, I. (2003). *Pusaudžiem par intīmo. Rokasgrāmata skolotājiem.* R.: UNDP.
- Rubins, A. (2001). *Seksuāli transmisīvās slimības.* R.: Latvijas Dermatoveneroloģijas fonds.
- Slimību profilakses un kontroles centrs, Latvijas Republikas Veselības ministrija. (2014). *HIV/AIDS B hepatīts un C hepatīts: seksuāli transmisīvās infekcijas.* R.: Slimību profilakses un kontroles centrs.
- Līviņa, S. (2017). *Kaitējuma mazināšanas pasākumi.* Pieejams http://www.iem.gov.lv/files/text/Livina_ricibas_plans_171117.pdf

- Slimību profilakses un kontroles centrs. (2016). *HIV infekcijas izplatība Latvijā*. Pieejams <http://www.spkc.gov.lv/hiv-aids/>
- Slimību profilakses un kontroles centrs. (2016). *HIV profilakse*. Pieejams <http://www.spkc.gov.lv/hiv-profilakse/293/hiv-aids-profilakse>
- Stūre, G. (2015). *Cilvēka imūndeficīta vīruss. Aktuālā situācija un agrīnas diagnostikas stratēģijas*. - SIA izdevniecība PILATUS. Pieejams <http://www.doctus.lv/2015/6/cilveka-imundeficita-virus-aktuala-situacija-un-agrinas-diagnostikas-strategijas>
- Taylor, G. P., Clayden, P., Dhar, J. u.c. (2014). *HIV, grūtniecība un sievietes veselība*. Rokasgrāmata. Biedrība Apvienība HIV.LV. Pieejams http://i-base.info/wp-content/uploads/2014/06/HIV-grutnieciba_2014-Latvian-HIV-and-Pregnancy.pdf
- Viljamsa, D. (2007). *50 fakti, kam jāmaina pasaule*. R.: Avots.

INFLUENCE OF COMPLEX PHYSIOTHERAPY ON THE FUNCTIONAL CONDITION OF THE SPINE IN OLDER PEOPLE

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Abstract. *The aim of the present study was to assess the impact of 21-days comprehensive physiotherapy program on the functional condition of the spine and severity of pain in older people. To achieve this goal, physiotherapeutic procedures were performed on 100 elderly patients suffering from spinal disorders. The comprehensive therapy program consisted of: general improvement exercises, individual exercises with a physiotherapist, exercises in water and physical therapy treatments such as: TENS currents, galvanic current, iontophoresis, laser stimulation, magnetic field on the lumbar spine and hydro massage or mud compresses. Prior and post the therapy program: the Schober's test - 1 (forward flexion), Schober's test - 2 (extension), Ott's test, fingertip-to-floor (FTF) test, pain Visual Analogue Scale (VAS) and the modified Oswestry low back pain questionnaire were evaluated. Statistically significant improvement ($p < 0.001$) in all tested parameters was shown at the end of therapy program. Age, height, body weight and body mass index (BMI) has no impact on results before and after the physiotherapy program in respective tests. In conclusion, the conducted study has shown the effectiveness of applied comprehensive physiotherapy program on the functional condition of*

the spine and improvement of the quality of life of the treated patients, regardless of their somatic conditions.

Keywords: *old age, physiotherapy, somatic changes, spinal disorders.*

Introduction

Spinal disorders in many developed countries are some of the most common causes of long term disability in adult population and frequent reason of early retirement (Gatchel et al., 2003). The most disabling in spinal disorders is chronic low back pain. The prevalence of chronic low back pain is high and increases in the aging population – most of us will suffer from low back pain at least once during our lifetime (Koes et al., 2006). In general population is estimated to be about 6 % (Juniper et al., 2009), whereas in adults aged 20-69 years old - 13.1 % (Shmagel et al., 2016), and reported lifetime prevalence varies from 49 % to 70 % and point prevalence from 10 % to 27 % (Koes et al., 2006, Gerhardt et al., 2014). The prevalence of low back pain continues to increase dramatically in the last decade and affects both women and men (Freburger et al., 2009). Spinal disorders and especially related pain has a significant impact on personal functional capacity and restricts occupational activities and is a major cause of decreased productivity (Allegri et al., 2016). When spinal disorder with pain occurs, it is most commonly treated in primary healthcare facilities and patients suffering back pain utilise more medical services than the average population (Lim et al., 2006). That is why its economic burden is very high and consist of direct costs of healthcare as well as indirect costs related to absenteeism, reduced productivity and early retirement (Dagenais et al., 2010; Philadelphia & Panel, 2001).

The management of patients with low back pain differs considerably between countries and among healthcare professionals (Koes et al., 2006). Frequently it is resistant to general practitioner treatment, and patients are referred for spinal surgery or for multidisciplinary treatment. Recently, many clinical trials have been conducted and a lot of systematic reviews have been done with the goal to find the best management method for these patients. Based on these results effects of multidisciplinary rehabilitation usually seems to have small to moderate clinical effects (Kamper et al., 2014). In Poland rehabilitation for patients with spinal disorders focuses on reduction of pain and preventing disability, especially in elderly.

The aim of the present study was to assess the impact of 21-days comprehensive physiotherapy program on the functional condition of the spine and severity of pain in older people.

Materials

Our study was conducted in Rehabilitation Centre in Kudowa Zdrój, Poland. All subjects were examined between November 2016 and January 2017. Our study group consisted of 100 patients (73 women and 27 men) with a mean age of 61.71 years suffering from spinal disorders and admitted to in-patient Rehabilitation Centre for 21-days comprehensive rehabilitation program. General characteristics of our study group has been presented in Table 1. Sixty six of examined subjects were already retired, 34 was still working. Only 24 patients had normal weight, 43 were overweight, and 33 were obese. According to clinical interview: only 33 of them used to be physically active. The inclusion criterion was medical diagnosis of degeneration or discopathy in lumbo-sacral segment of the spine and no clinical contraindications for performing diagnostic functional tests.

Ethics approval and consent to participate

All patients gave the consent to take part in the study. The study was conducted with the permission nr 325/2016 of The Ethical Committee of Opole Medical School.

Table 1 Patient's general characteristics (n = 100)

Variable [units]	Mean	Minimum	Maximum	SD	Median
Age [years]	61.71	42	79	± 8.86	60.81
Body weight [kg]	75.93	48	140	± 15.57	75.00
Height [cm]	165.72	150	194	± 9.52	164.00
BMI [kg/m ²]	27.54	19.03	40.01	± 4.28	27.18

SD – Standard Deviation, *BMI* - Body Mass Index

Methods

Functional tests

All patients were examined twice using: the Schober's test - 1 (forward flexion), Schober's test - 2 (extension), Ott's test, fingertip-to-floor (FTF) test, pain visual analogue scale (VAS) and the modified Oswestry low back pain questionnaire. First examinations were conducted before the comprehensive

rehabilitation program. The second evaluation was done after completing the rehabilitation.

Schober's tests were used in aim to evaluate mobility in lumbo-sacral part of the spine. We have evaluated: the elongation of the spine in lumbar part during maximal forward flexion in sagittal plane (the Schober's Test - 1) and the shortening of the spine in lumbar part during maximal backward extension in sagittal plane (the Schober's Test - 2) (Schober, 1937).

Ott's test was carried out to measure the range of movement of the thoracic spine in sagittal plane (Schmidt, 2002). The measurement in sagittal plane was taken during elongation of the thoracic spine during maximal forward flexion and standing position with straight knees.

All subjects underwent also Fingertip-to-Floor test (FTF) in order to evaluate lumbar flexion all together with pelvic, hip, thoracic spine and shoulder mobility. FTF was used as an outcome measure, because forward bending is one of the more painful and limited movements. The FTF test has been shown to have excellent reliability without the use of standardized instructions and patient positioning (Gauvin et al., 1990). FTF test measures in sagittal plane the distance between the fingertip of the longest finger and the floor during standing position with straight knees and maximal forward flexion with arms dropped down.

Every patient also has evaluated the severity of spine pain using the 10 points Visual Analogue Scale (VAS), which consisted of a straight line with the endpoints defining extreme limits such as '0 - no pain at all' and '10 - pain as bad as it could be'. Each patient was asked to mark its pain level on the line between the two endpoints.

All examined patients filled in the modified Oswestry Low Back Pain Disability Questionnaire (also known as Oswestry Disability Index), which is an extremely important tool that measures the patient's permanent functional disability. The questionnaire is considered the 'gold standard' for low back functional outcome tools (Fairbank & Pynsent, 2000; Davidson & Keating, 2001). It judged the patient's disability and the severity of lumbo-sacral spinal pain and consists of 10 questions about pain intensity and its changes or induction during: lifting heavy things, sitting, sleeping, travelling, personal care activities (washing, dressing etc.), walking, standing, social life activities, sex life (if applicable). For each question patients selected one of the six answers scored from 0 to 5 points. All points were summed up to the maximal number of 50 points (100 %).

Interpretation of results was as follows:

- 0 % to 20 % - minimal disability - the patient can cope with most living activities, usually no treatment is advised apart recommendation concerned with lifting, sitting and exercise;
- 21 % to 40 % - moderate disability - the patient experiences more pain and difficulty with sitting, lifting and standing; travel and social life are

more difficult and they may be disabled from work; personal care, sexual activity and sleeping are not grossly affected and the patient can usually be managed by conservative means;

- 41 % to 60 % - severe disability - pain remains the main problem in this group but activities of daily living are affected; these patients require a detailed examination;
- 61 % to 80 % - handicap - back pain impinges on all aspects of the patient's life, positive intervention is required;
- 81 % to 100 % - patients are either bedridden or exaggerating their symptoms.

Rehabilitation program

A comprehensive therapy program for each patient was individually established after doctor's medical evaluation and consisted of: general improvement exercises, individual exercises with a physiotherapist, exercises in water and physical therapy treatments such as: transcutaneous electrical nerve stimulation (TENS) currents, galvanic current, iontophoresis, laser stimulation, magnetic field on the lumbar spine and hydro massage or mud compresses. Each patient during whole rehabilitation program received all together 85 treatments. Exercises were conducted 3 to 5 times a week.

Every single treatment consisted of: general improvement exercises – 30 minutes, individual exercises with a physiotherapist – 30 minutes, water exercises – 40 minutes and physical therapy treatments such as: TENS currents – 10 minutes, galvanic current – 10 minutes, iontophoresis – 10 minutes, laser stimulation – 8 minutes, magnetic field on the lumbar spine – 15 minutes, hydro massage – 15 minutes and mud compresses – 15 minutes.

All patients received kinesitherapy: general improvement exercises, individual exercises with a physiotherapist and water exercises.

General improvement exercises and individual exercises with a physiotherapist aimed at: elongation of lumbar muscles, elongation of hamstrings, mobilisation of thoraco-lumbar spine, improving twists mobility of thoraco-lumbar spine, stretching of thoracic and lumbar muscles, strengthening abdominal, gluteal, thighs and back muscles.

Water exercises also aimed in strengthening of the abdominal, gluteal and back muscles, elongation of thoracic and lumbar spine. They were conducted during standing or floating and conditioning using specialized equipment, such as flotation devices and resistive devices for the hands or feet.

Statistical methods

The analysis was made with the use of descriptive statistics. The Wilcoxon signed-rank test was used to assess statistical significant differences between results prior and after the rehabilitation program. The correlation of age, body

weight, height and BMI with functional tests was evaluated using Pearson's correlation coefficient. The level of significance was set at $p < 0.05$.

Results

After the treatment program the mobility of thoracic and lumbar spine was significantly better than prior rehabilitation. All specific results in consecutive functional tests performed prior and after rehabilitation program are presented in Table 2. The forward flexion and backward extension in Schober's tests were significantly better ($p < 0.001$). The forward flexion in thoracic spine evaluated in Ott's test also was significantly improved after rehabilitation treatment ($p < 0.001$). The mobility of lumbar spine together with pelvic, and hip mobility evaluated in FTF was also greater ($p < 0.001$) after finishing comprehensive rehabilitation program. Analysis of pain intensity evaluated using VAS showed significant improvement in pain severity as a result of conducted therapy ($p < 0.001$). The degree of disability measured using Oswestry questionnaire was also significantly reduced; it was about 10.3 % after comprehensive rehabilitation program.

We found significant linear correlation of height and difference in range of thoracic spine movement measured in Ott's test prior and after the therapeutic program ($p < 0.05$). There were no other significant correlation evaluated with Pearson's linear correlation coefficients between age, body weight, height, BMI and results of functional tests. All correlation results are presented in Table 3.

Table 1 Functional tests done prior and after treatment (n=100)

Functional test [units]	Prior treatment		After treatment		Difference		Z	p value
	Mean	SD	Mean	SD	Mean	SD		
Schober's Test – 1 [cm]	4.1	± 1.1	5.8	± 1.3	1.7	± 1.0	-8.357	0.001
Schober's Test – 2 [cm]	2.5	± 0.7	1.7	± 0.7	-0.8	± 0.6	-7.797	0.001
Ott's Test [cm]	2.0	± 0.7	2,9	± 1.0	0.9	± 0.6	-8.010	0.001
FTF [cm]	13.5	± 1.3	9.1	± 9.5	-4.4	± 4.5	-7.486	0.001
VAS [points]	4.7	± 1.7	2.5	± 1.5	-2.2	± 1.3	-8.408	0.001
Oswestry Questionnaire [%]	35.8	± 0.5	25.4	± 9.6	-10.3	± 8.0	-8.113	0.001

FTF – Fingertip to Floor Test; VAS - Visual Analogue Scale; SD – Standard Deviation

Table 3 The linear correlation of age and body parameters with functional tests

Variable [units]	Schrober's Test - 1	Schrober's Test - 2	Ott's Test	FTF	VAS	Oswestry Quest.
Age [years]	-0.159	0.018	-0.191	-0.020	0.092	0.179
Height [cm]	0.070	-0.136	0.197*	-0.072	0.118	0.087
Body weight [kg]	0.058	-0.138	0.159	0.050	0.021	0.106
BMI [kg/m ²]	0.007	-0.064	0.044	0.025	-0.049	0.083

FTF – Fingertip to Floor Test; VAS - Visual Analogue Scale, BMI – Body Mass Index;

*- $p < 0.05$

Discussion

More than 1000 randomised controlled trials have been published evaluating all types of treatments for low back pain commonly caused by spinal disorders (Koes et al., 2006). Systematic reviews comparing varying forms of generic exercise with no exercise or other exercise programs suggest that exercises improve function and decreases pain compared with no exercise in people with chronic low back pain (Ferreira et al., 2006; Slade & Keating, 2006; Slade & Keating, 2007). Whereas the other review concluded that there is an evidence that specific back exercises (strengthening, flexibility, stretching, flexion, and extension exercises) are not effective. This last paper suggests that specific back exercises were equally as effective as a variety of placebo, sham, or as no treatment at all (Van Tulder & Koes, 2002) what is in opposition to prior cited reviews as well as to our results. In our program every patients received specific back exercises, and we showed that this special program improve function and reduce pain and disability.

The clinical evidence regarding the effectiveness of TENS and massage in reducing pain and improving functional status in patients with chronic low back pain is inconsistent (Khadilkar et al., 2005; McIntosh & Hall, 2008). Despite these results, our patients with spinal disorders received TENS currents as well as massage in their comprehensive rehabilitation program and in opposition to cited research we conclude that clinical results of the whole program including TENS currents and massage were satisfactory.

The present study indicates that older people with spinal disorders usually have excessive body weight, which is an important risk factor of developing the spinal diseases (Koes et al., 2006). In all cases it should be taken into consideration during establishing a comprehensive therapy program. Despite the

fact that the program restricting the supply of calories and weight loss has not been implemented during the treatment period, we have observed good results of comprehensive 21-days rehabilitation program.

Our current study has had some limitations worth to note. Firstly, it was an observational study without randomisation, which could limit the generalization of our results. Secondly, we only collected data at the end of 21-days of the comprehensive rehabilitation program. Especially, it can be expected based on data published by Görge et al. (2017), that our patients will utilise healthcare services less frequently after effective rehabilitation program. Along-term follow-up evaluation could support different data. Thirdly, we did not include a no-treatment control group in our study, so it cannot be determined if the improvements seen can be attributed only to the interventions or simply to the passage of time (Polish legislation on ethics and the Declaration of Helsinki for clinical trials do not allow patients with a disabling disorders to remain without treatment if other techniques that could improve clinical condition are available).

Future studies should continue to examine the effectiveness of comprehensive rehabilitation programme on the functional condition of the spine, pain reduction and improvement the quality of life including spinal manipulative therapy, cognitive behaviour therapy, educational interventions (especially diet), psychosocial treatment and functional technique in conjunction with other physical therapy interventions. We also think that it would be useful to include in the future studies a control group to find which intervention has the most powerful effect and collect data over a long-term follow-up period.

Conclusions

In conclusion, spinal disorders are common conditions motivating older patients to seek medical consultation. Their impact on society are significant, both epidemiologically and economically. All the guidelines currently available stress the importance of special therapeutic strategies in order to solve the problem. This study has shown the effectiveness of applied comprehensive physiotherapy program on the functional condition of the spine and improvement of the quality of life of the treated patients, regardless of their somatic conditions. Our therapeutic strategy seems to be worth testing in future long-term studies.

References

Allegrì, M., Montella, S., Salici, F., Valenta, A., Machesini, M., Compagnone, Ch., Baciarello, M., Manferdini, M. E., & Fanelli, G. (2016). Mechanisms of low back pain: a guide for diagnosis and therapy. *F1000 Research*, 1530, 1-11.

- Dagenais, S., Tricco, A. C., & Haldeman, S. (2010). Synthesis of recommendations for the assessment and management of low back pain from recent clinical practice guidelines. *The Spine Journal*, *10*, 514-529.
- Davidson, M., & Keating, J. (2002). A comparison of five low back disability questionnaires: reliability and responsiveness. *Physical Therapy*, *82*, 8-24.
- Fairbank, J. C., & Pynsent, P. B. (2000). The Oswestry Disability Index. *Spine*, *25*, 2940-2952. discussion 52.
- Ferreira, P. H., Ferreira, M. L., Maher, C. G., Herbert, R. D., & Refshauge, K. (2006). Specific stabilisation exercise for spinal and pelvic pain: A systematic review. *Australian Journal of Physiotherapy*, *52*, 79-88.
- Freburger, J. K., Holmes, G. M., Agans, R. P., Jackman, A. M., Darter, J. D., Wallace, A. S., Castel, L. D., Kalsbeek, W. D., & Carey, T. S. (2009). The rising prevalence of chronic low back pain. *Archives of Internal Medicine*, *169*, 251-258.
- Gatchel, R. J., Polatin, P. B., Noe, C., Gardea, M., Pulliam, C., & Thompson, J. (2003). Treatment and cost-effectiveness of early intervention for acute low-back pain patients: a one-year prospective study. *Journal of Occupational Rehabilitation*, *13*, 1-9.
- Gauvin, M. G., Riddle, D. L., & Rothstein, J. M. (1990). Reliability of clinical measurements of forward bending using the modified fingertip-to-floor method. *Physical Therapy*, *70*, 443-447.
- Gerhardt, A., Hartmann, M., Blumenstiel, K., Tesarz, J., & Eih, W. (2014). The prevalence rate and the role of the spatial extent of pain in nonspecific chronic back pain: a population - based study in the south-west of Germany. *Pain Medicine*, *15*, 1200-1210.
- Görge, M., Ziehm, J., & Farin, E. (2017). Health-care utilization of patients with chronic back pain before and after rehabilitation. *BMC Health Services Research*, *17*, 812.
- Juniper, M., Le, T. K., & Mladi, D. (2009). The epidemiology, economic burden, and pharmacological treatment of chronic low back pain in France, Germany, Italy, Spain and the UK: a literature-based review. *Expert Opinion on Pharmacotherapy*, *10*, 2581-2592.
- Kamper, S., Apeldoorn, A., Chiarott, A., Smeets, R., Ostelo, R., Guzman, J., & van Tulder, M. (2014). Multidisciplinary biopsychosocial rehabilitation for chronic low back pain (Review) *Cochrane Library*, *9*, 1-209.
- Khadilkar, A., Milne, S., Brosseau, L., Robinson, V., Saginur, M., Shea, B., Tugwell, P., & Wells, G. (2005). Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. *Cochrane Database of Systematic Reviews*, *3*, CD003008.
- Koes, B. W., van Tulder, M. W., & Thomas, S. (2006). Diagnosis and treatments of low back pain. *British Medical Journal*, *332*, 1430-1434.
- Lim, K., Jaobs, P., & Klarenbach, S. (2006). A population-based analysis of health care utilization of persons with back disorders. Results from the Canadian Community Health Survey 2000-2001. *The Spine Journal*, *31*, 212-218.
- McIntosh, G., & Hall, H. (2008). Low back pain (chronic). *British Medical Journal Clinical Evidence*, 1116.
- Philadelphia Panel. (2001). Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions for low back pain. *Physical Therapy*, *81*, 1641-1674.
- Schmidt, K. L. (2002). Victor Rudolf Ott (1914-1986): European pioneer and fighter. *Zeitschrift Fur Rheumatologie*, *61*, 469-482.
- Schober, P. (1937). Lendenwirbelsäule und Kreuzschmerzen. *Munchen Medizinische Wochenschrift*, *84*, 336-339.

- Shmagel, A., Foley, R., & Ibrahim, H. (2016). Epidemiology of chronic low back pain in US adults: National Health and Nutrition Examination Survey 2009–2010. *Arthritis Care & Research (Hoboken)*, 68, 1688-1694.
- Slade, S. C., & Keating, J. L. (2006). Trunk-strengthening exercises for chronic low back pain: a systematic review. *Journal of Manipulative and Physiological Therapeutics*, 29, 163-173.
- Slade, S. C., & Keating, J. L. (2007). Unloaded Movement Facilitation Exercise Compared to No Exercise or Alternative Therapy on Outcomes for People with Nonspecific Chronic Low Back Pain: A Systematic Review. *Journal of Manipulative and Physiological Therapeutics*, 30, 301-311.
- Van Tulder, M. W., & Koes, B. W. (2002). Low back pain. *American Family Physicians*, 65, 925-928.

ELPOŠANAS APGRŪTINĀŠANAS IETEKME UZ ORGANISMA FUNKCIONALITĀTI RITENBRAUKŠANĀ TRIATLONĀ

Effect of Respiratory Depression on Organism Functionality in Cycling in Triathlon

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Abstract. “Oxygen intake”, “Hypoxia”, “Respiratory muscles training”: are very well known terms in now-a-day sports. That is why the goal of the research is to investigate the effects of the lack of oxygen on an organism’s functionality in the low season preparation term within the cycling stage of triathlon. Nine healthy active triathletes (males $n=9$), age (20 ± 7 years), competitive at national and international level, were trained in the equal conditions using Spinning bikes in the same room ($22 \text{ }^{\circ}\text{C} \pm 2.4 \text{ }^{\circ}\text{C}$ and $82 \pm 4 \text{ \% RH}$), at the same time, at the same cadence ($100 \text{ revolutions} \pm 5 \text{ rev.}$) and performing the same exercises. All participants had 4 monocycles pre-experimental preparation (PP). Followed by 12 monocycles (hypoxia training – HT) as a part of a monthly microcycle. During a 60 min session one group was using Ultrabreathe, another group was using the Elevation Mask 2.0 and the last group didn’t use any device performing as a control group. After another 4 monocycles for recovery (R). Data was collected at the end of each phase-PP (4 monocycles in one week), in the middle and at the end of phase-HT (8-monocycles using Elevation Mask 2.0 and Ultrabreathe devices) and the end of phase-R (4-monocycles with no respiration effort). Maximal oxygen consumption (VO_2max), Lactate (LA), cadence power (W) and heart rate (HR) was recorded and collected as part of the research. All were measured in laboratory conditions using KORR CardioCoach gas analyzing system for VO_2max , cadence power was measured by the Monark LC4R ergometer bike, whereas blood samples were collected for lactate using the COBAS Accutrend Plus device, heart rate data was measured by the POLAR H7 heart rate belts and POLAR Power Flow system. The performances expressed changes in all four parameters on all stages of the experiment. Maximal oxygen consumption showed an increase in two groups who were using the respiratory depression devices after 8 monocycles –by 4,35 and 3,01 % respectively, and by the end of the experiment the total difference was - 3,74 and 0,82 % respectively. Improvements were also defined in the level of increase in lactate and maximum cadence power. There was a power increase in the two groups who were using the respiratory depression devices after 8 monocycles - 3,92 and 1,57 % respectively, and by the end of

experiment the total difference was - 3,57 and 0,87 % respectively. All this data shows us the positive effects of hypoxial training.

Keywords: *Breathing depression, hypoxo, indoor cycling, maximum oxygen consumption, triathlon.*

Ievads **Introduction**

Triatlons ir viens no populārākiem sporta veidiem Olimpiskajā programmā. Pareiza un efektīvā elpošana ir viena no sastāvdaļām, kas ietekmē gala rezultātu sportā, rezultāta noturēšanu ilgākā laika posmā, ka arī organisma funkcionalitāti un atjaunošanās procesus. Pētījumu skaits par sportistu apmācības teorētisko un metodisko nodrošinājumu izmantojot mākslīgās hipoksijas līdzekļus un metodes ir pietiekoši liels, bet šī problēma joprojām ir nepietiekami izpētīta (Faiss & Leger, 2013). Efektīvāka elpošana pielietojot intervāla normabāriskas hipoksijas metodi uzlabo kopējo veselību un aizsarga organismu no daudzām slimībām, ka arī paātrina atjaunošanos, un samazina bioloģisko vecumu (Стрелков, 2001; Чижов, 1997).

No elpošanas efektivitātes ir atkarīgs enerģijas līmenis organismā un energo producēšanas mehānismi. Uztrenējot dažādas elpošanas fāzes, var iegūt papildus enerģijas rezervi, kas tiks arī izmantots labāka sporta rezultāta sasniegšanai. Efektīvāka elpošana var arī samazināt kopējo ķermeņa temperatūru uz 1° C (Фролов, 1998), kas savukārt dos arī papildus rezistenci pret pārkarsēšanas karsto apstākļu sacensībās. Edwards ar Cooke savos pētījumos analizēja elpošanas apgrūtināšanas ietekme uz treniņu efektivitāti, jo pētījumi par skābekļa patēriņa un maksimālās ieelpos uzlabošanu peldētājiem (Edwards & Cooke, 2004) liecināja par gala rezultāta uzlabošanu. Tika izpētīts, kā elpošanas apgrūtināšanas ierīces ietekmē kvantitatīvo rezultātu un vairākus fizisko īpašību parametrus sportā. Tas ir saistīts ar starpribu muskuļu noguruma negatīvo ietekmi riteņbraucējiem uz sportista pašsajūtu (Romer, McConnell, & Jones, 2002). Elpošanas muskuļu treniņš ievērojami ietekmē asinsrites izplatīšanos gan pie elpošanas orgāniem, gan pie muskuļiem (Dominelli et al., 2017).

Pielietojot elpošanas muskuļu treniņus (IMT) ir iespējams uzlabot aerobo un anaerobo sliedžu rādītājus uz 15 % (Moreira, 2016; Cross & Winters, 2014). Mūsu pētījuma mērķis ir elpošanas sistēmas apgrūtināšanas ierīces „UltraBreathe” un „Elevation Mask 2.0” pielietošanas ietekme uz fiziskam īpašībām, elpošanas sistēmu un organisma funkcionalitāti, ka arī ierīču pielietošanas efektivitātes invertējums.

Metodika **Material and methods**

Eksperimenta laikā (12 monocikli) galveno uzmanību pievēršam četriem vitāliem parametriem ciklisko sporta veidu sagatavotībā: laktāts, maksimālais skābekļa patēriņš, jauda, sirdsdarbības frekvence.

Eksperimentā piedalījās mācību treniņgrupas triatlonisti, kam nodarbības notiek 6 reizes nedēļā un ne mazāk kā 13 stundas nedēļā. I eksperimentālajā grupā tika iekļauti triatlonisti, kuri trenējas 3 gadus un jau paveikuši triatlona vidējo distanci (1900m peldēšana + 90km riteņbraukšana + 21,1 skriešana), II eksperimentālajā grupā tika iekļauti triatlonisti, kuri trenējas 2 gadus un tikai gatavojas triatlona vidējai distancei (1900m peldēšana + 90km riteņbraukšana + 21,1 skriešana), kontrolgrupā tika iekļauti triatlonisti, kuri trenējas 3 gadus un gatavojas triatlona Standarta distancei (1500m peldēšana + 40km riteņbraukšana + 10km skriešana). Sākotnējo rezultātu ieguvei un trenētības efektivitātes noteikšanai tika veikti šādi testi: VO₂max - skābekļa maksimāla patēriņa tests, PWC170 - fizisko darbaspēju tests, tika paņemta laktāta prove. Visiem dalībniekiem ir vidēja fiziskā attīstība. Testā piedalījās 9 triatlonisti: vidējais vecums 30 ±3 gadi, vidēja ķermeņa masa 80 ±5kg., vidējais augums 177 ±3 cm.

Eksperiments norisinājās 2016./2017. gada starpsezonas sagatavotības posmā riteņbraukšanas segmentā. Galvenā atšķirība starp grupām bija tā, ka viena grupa pielietoja elpošanas apgrūtināšanas maskas, otra grupa pielietoja elpošanas apgrūtināšanas ierīces ar mutes iebāzni. Kontroles grupai tika iedota līdzvērtīga treniņu programma, kuras izpildei netika pielietots neviens elpošanas apgrūtinātājs.

Eksperimenta rezultātiem tika aprēķināts vidējais aritmētiskais (\bar{x}), standartnovirze (s), standartklūda (Ss), kā arī tika pielietots "Studenta t-tests neatkarīgām kopām ar līdzīgām dispersijām". Aprēķināšanai tika pielietots MS EXCEL programmatūra, ar ielādēto programmu "Matemātiskā statistika", aprakstoša statistika.

Pētījuma testa proves notika sanatorijā "Jantarnij Bereg" laboratorijā, 2016. gada decembrī / 2017. gada janvārī, pēc 60 minūšu vispārējās fiziskās sagatavotības treniņa. Trenējošiem sportistiem treniņu laikā vidējais pulss (AVP) nepārsniedza 140 sit./ min., kas bija konstatēts ar POLAR FLOW grupu nodarbību sistēmu un POLAR H7 jostas palīgu. Mitrums – 42 %, gaisa temperatūra – 20 °C, gaisa kustīgums - 0,2 m/s.

Pētījuma pirmajā posmā tika iegūti sākuma testa rezultāti speciālajos testos ar KORR CardioCoach gāzes analizēšanas sistēmu VO₂max noteikšanai, pedalēšanas jauda tika konstatēta ar Monark LC4R veloergometru, kā arī asins proves tika ņemtas ar COBAS Accutrend Plus iekārtu laktāta līmeņa konstatēšanai. Iegūtie dati tika izmantoti eksperimenta sākotnējo datu analīzei.

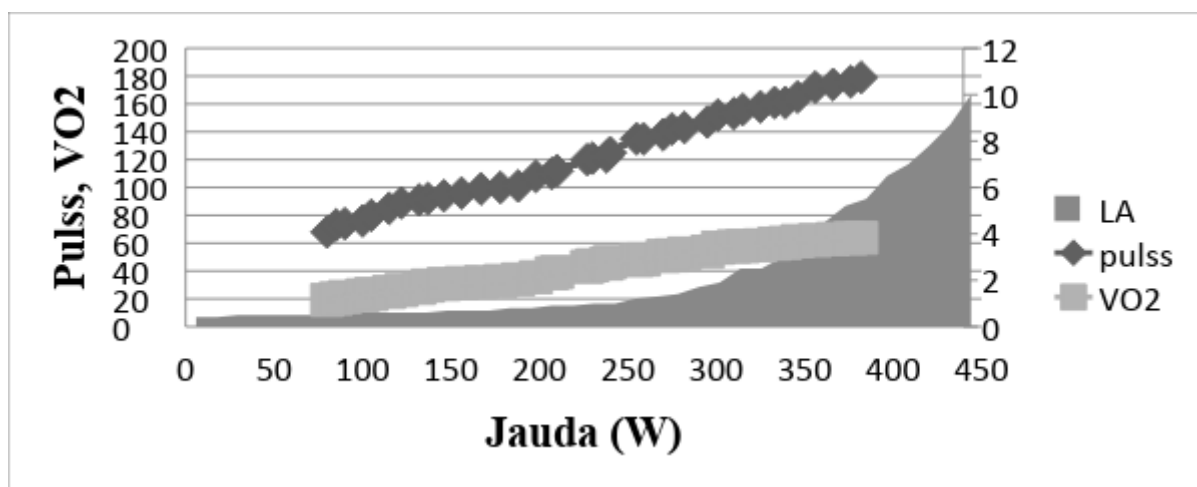
Organizējot pedagoģisko eksperimentu, pētījumā iesaistītie subjekti tika sadalīti trijās vienlīdzīgas grupās. Posma beigās (četri treniņu monocikli) notika testēšana uz gāzes analizēšanas iekārtas.

Pētījuma otrajā posmā tika atkārtoti četri treniņu monocikli, pēc kuriem sekoja testēšana uz gāzes analizēšanas iekārtas.

Pētījuma trešajā posmā tika vēlreiz atkārtoti četri treniņu monocikli, kuru laika visas trijās grupās netika pielietots neviens elpošanas apgrūtinātājs. Pēc šī posma papildus tika analizēti sportistu rezultāti dinamikas noteikšanai.

Rezultāti un diskusija *Results and discussion*

Pētījuma posmos katram dalībniekam bija atsevišķi jāveic iesildīšanās uz veloergometra, pēc kuras sekoja slodzes tests: pēc katru 2. minūti slodze tika palielināta par 15W, kamēr netika sasniegts testā maksimāli atļauts pulss. Dalībniekiem pēc katra pētījuma posma tika noteikti četri vidēji grupas rezultāti (LA, VO₂max, Pulss, Jauda - W), kuri savukārt tika salīdzināti ar pārējo divu grupu vidējiem rezultātiem.

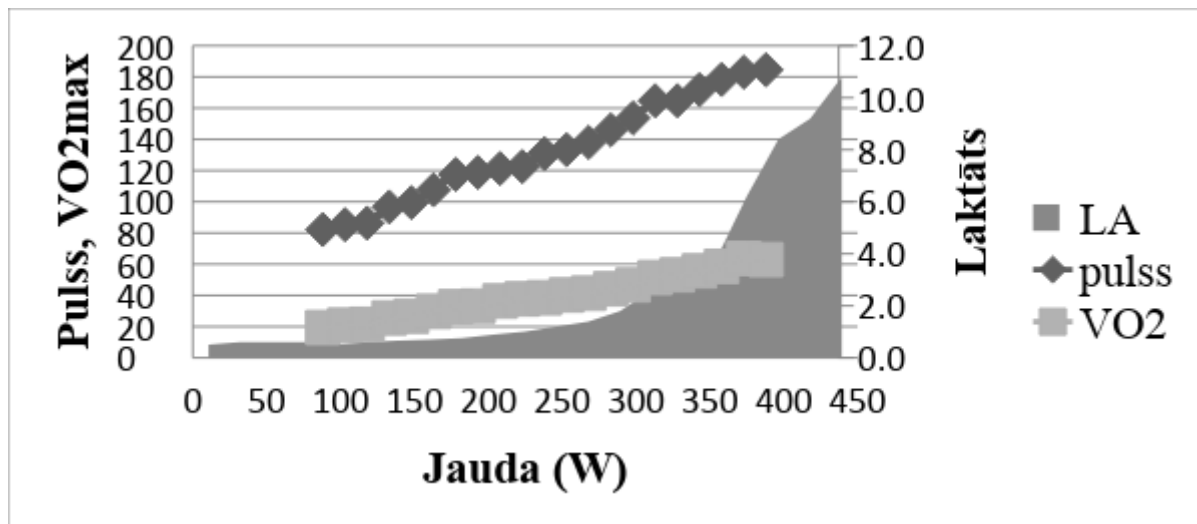


1. att. 1.M dalībnieka rezultāti pirms testa
Fig 1. 1 M Participant initial testing results

1. attēlā grafiski atspoguļots, ka pētāmajam dalībniekam no M-grupas, kurš lietoja "Elevation Mask 2.0" maksimāla jauda pirms eksperimenta sākuma ir pacēlusies līdz 371W, ar pulsu 183 sit/min, pie maksimāla skābekļa patēriņa - 62,6 ml/kg/min. 1. attēlā arī ir noteicams ar atsevišķo grafisko atspoguļojumu sportista laktāts, kurš pie pulsa 183 ir sasniedzis savu kritisko līmeni - 10.7 Mol/L. Sākamparametri sportistam 1M bija šādi: jauda - 82W, laktāts - 0,5 Mol/L, pulss - 79 sit/min, VO₂ - 18.6 ml/kg/min. Kritiska robeža sportistam 1M tika sasniegta

pie pulsa 162 sit/min, kad laktāts ir sasniedzis sava aeroba sliekšņa virsrobežu - 4.0, pie jaudas 308W, visi parametri pēc šī punkta sāka straujāk pieaugt.

Visi M-grupas dalībnieki uzrādījuši jaudas maksimālos rādītājus vidēji augstāk par $370 \pm 0,44$ W, kas ir definējams par labu sagatavotības līmeni.

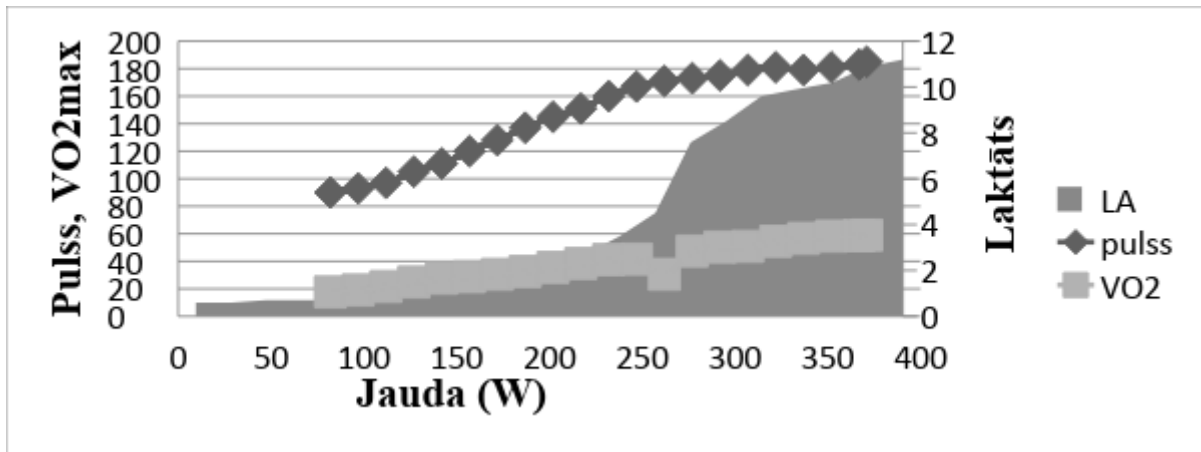


2. att. 1.T dalībnieka rezultāti pirms testa

Fig 2. 1 T Participant initial testing results

2. attēlā grafiski atspoguļota dalībnieka no T-grupas, kurš lietoja “Ultrabreathe” apgrūtinātāju, maksimāla jauda pirms eksperimenta sākuma. Jauda ir pacēlusies līdz 388W, ar pulsu 185 sit/min, pie maksimāla skābekļa patēriņa - 62,9 ml/kg/min. 1. attēlā arī ir grafiski atspoguļots sportista laktāts, kurš pie pulsa 185 ir sasniedzis savu kritisko līmeni - 10.8 Mol/L. Sākuma parametri sportistam 1T bija šādi: jauda - 88W, laktāts - 0,5 Mol/L, pulss - 82 sit/min, VO2 - 19.1 ml/kg/min. Kritiska robeža sportistam 1T tika sasniegta pie pulsa 168 sit/min, kad laktāts ir sasniedzis savu aeroba sliekšņa virsrobežu - 4.0, pie jaudas 330W, visi parametri pēc šī punkta sāka straujāk pieaugt.

Visi T-grupas dalībnieki uzrādījuši jaudas maksimālos rādītājus vidēji augstāk par $370 \pm 0,75$ W, kas ir definējams par labu sagatavotības līmeni, salīdzinot to rezultātu ar vidējo rezultātu sportistiem, kas trenējas vairāk par 13 st/ned un nodarbojas tikai ar riteņbraukšanu (Полищук, 1997; Мищенко, 1990). Kā arī visiem trijiem sportistiem maksimālais skābekļa patēriņš pārsniedza vidējo sagatavotības līmeni (Полищук, 1997).



3. att. 1.EKS dalībnieka rezultāti pirms testa
Fig 3. 1 EKS Participant initial testing results

3.attēlā atspoguļota eksperimenta dalībnieka no Eks-grupas, kurš pedagoģiska eksperimenta laikā nelietoja elpošanas apgrūtinātājus. Maksimāla jauda pirms eksperimenta sākuma ir pacēlusies līdz 371W, ar pulsu 185 sit/min, pie maksimāla skābekļa patēriņa - 59,0 ml/kg/min. 3. attēlā arī ir grafiski atspoguļots sportista laktāts, kurš pie pulsa 185 sit/min sasniedza savu kritisko līmeni - 11.2 Mol/L. Sākuma parametri sportistam 1Eks bija šādi: jauda - 82W, laktāts - 0,6 Mol/L, pulss - 90 sit/min, VO2 - 17.7 ml/kg/min. Kritiska robeža sportistam 1Eks tika sasniegta pie pulsa 173 sit/min, kad laktāts ir sasniedzis savu aeroba sliekšņa virsrobežu - 4.5, pie jaudas 277W, visi parametri pēc šī punkta sāka straujāk pieaugt. Pēc iegūtiem parametriem var secināt, ka sportista sākuma sagatavotības līmenis nav ļoti augsts.

Eks-grupas dalībnieki uzrādījuši jaudas maksimālos rādītājus vidēji augstāk par $370 \pm 1,25$ W, tomēr grupas vidējais rezultāts bija visvājākais, salīdzinot to ar iepriekšējām divām grupām. Tomēr rādītājs virs 370W ir definējams par labu sagatavotības līmeni, salīdzinot to rezultātu ar vidējo rezultātu sportistiem, kas trenējas vairāk par 13 st/ned, un nodarbojas tikai ar riteņbraukšanu (Полищук, 1997; Мищенко, 1990).

Analizējot visu triju grupu dalībnieku rezultātus, var secināt, ka vidējais sagatavotības līmenis ir labs, spriežot pēc kopīgas reakcijas uz pievienoto slodzes stimulu. Lielākai daļai sirds darbības reakcija uz pievienoto jaudas palielinājumu reaģēja, paaugstinoties lineāra progresijā. Vidēji visiem sportistiem laktāta straujāks pieaugums bija pamanāms, sasniedzot $4,0 \pm 0,9$ Mol/L.

Pēc elpošanas apgrūtinātāju pielietošanas 8 monociklu garumā, visu sportistu maksimālie uzrādītie rezultāti tika sagrupēti (skat. 1. tab.).

1. tab. Triatlonistu testu rezultāti pēc II un III posma
 Table 1 Test results of Triathletes after II & III phase

Posms/ Tests	Eksperimenta II posms				Eksperimenta III posms			
	W	LA	VO2max	Pulss	W	LA	VO2max	Puls
1m	377	10,2	63,6	180	382	9,9	63,8	181
2m	385	10,2	66,3	185	392	10,4	68,6	184
3m	409	10,0	67,8	182	414	10,2	69,8	184
1t	391	10,7	63,5	183	395	10,2	65,4	182
2t	379	10,9	59,2	183	383	10,3	61,0	182
3t	376	10,0	62,3	182	379	9,9	62,6	182
1eks	374	10,9	59,2	182	371	10,7	60,2	184
2eks	372	10,6	61,1	181	373	10,5	61,3	183
3eks	370	10,6	61,2	182	370	10,50	61,34	181

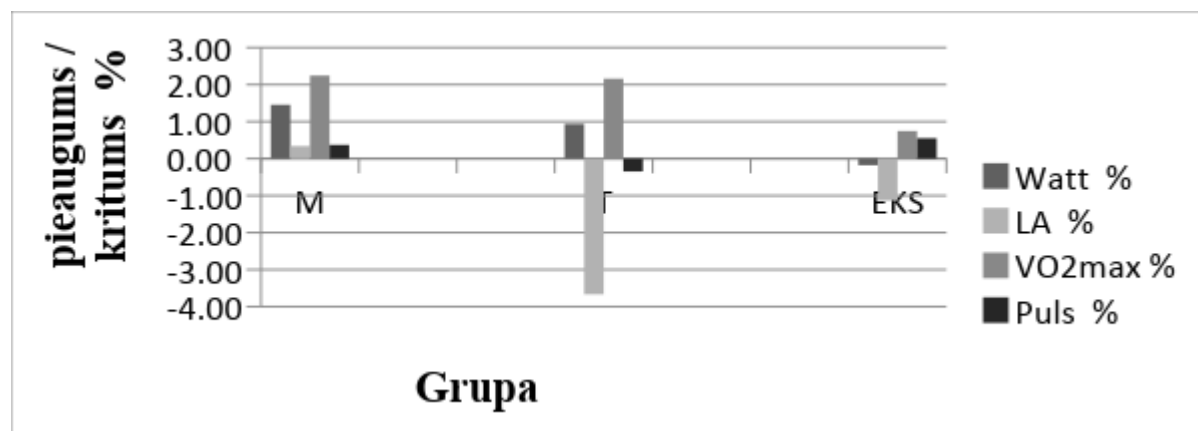
M - grupa, kas lietoja "Elevation Mask 2.0"

T - grupa, kas lietoja "Ultrabreathe"

Eks - eksperimentāla grupa, kas nelietoja elpošanas apgrūtinātājus

Vismazāk uzlabojas rezultāti kontrolgrupai, kā arī dažādos parametros tika konstatēts rezultāta kritums. Visi dalībnieki, kas lietoja apgrūtinātājus, atzīmēja, ka pielietošanas laikā bija jūtams lielāks diskomforts elpošanai, veicot parastu aeroba darbu (ap pulsa frekvenci ≥ 150 sit/min). Dažiem sportistiem pasliktinājās maksimālais pulss, kas tiek saistīts ar netipisku veloslodzi šajā sagatavotības periodā.

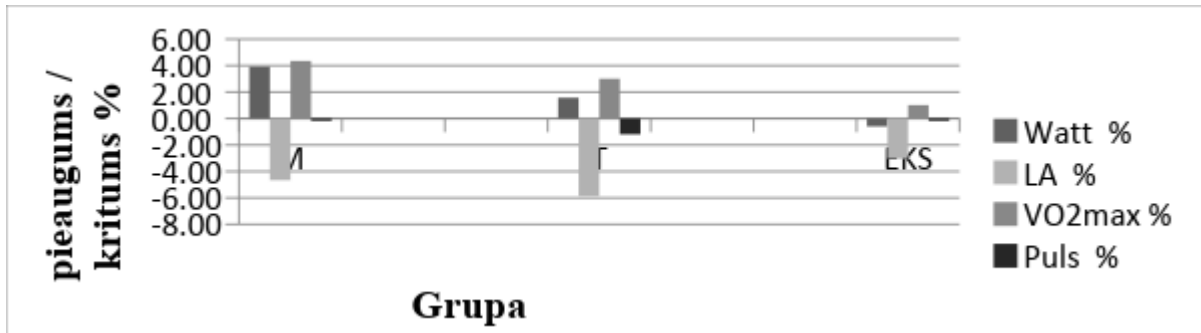
Vidējie grupas rādītāji arī tika uzlaboti (skat. 4. att.). Rezultāti, kas tika uzrādīti pēc "Elevation Mask 2.0" pielietojuma, ir saistīti ar ērtāko pielietojumu un ar iespēju precīzāk izvēlēties slodzi, izmantojot dažādu vārstuļņu maiņu.



4. att. Grupas rezultāta vidējais pieaugums/kritums pēc III posma salīdzinājumā ar II posmu

Fig 4. Result increase/decrease for each group comparing II & III phase

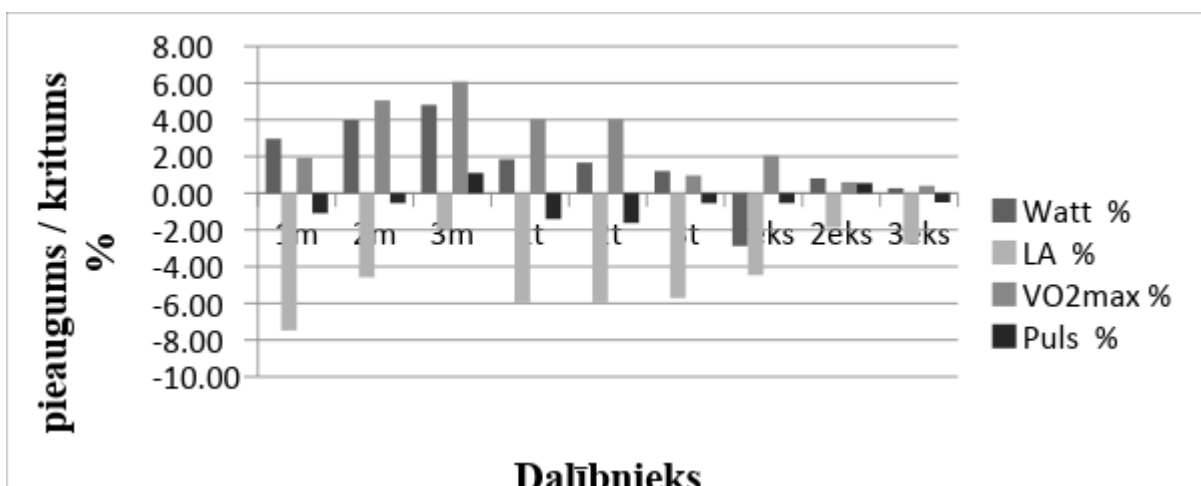
Apkopjot visus rezultātus pēc III posma un salīdzinot tos ar rezultātiem, kuri tika uzrādīti pirms pedagoģiskā eksperimenta (skat. 5. att.), var redzēt, ka M-grupai rezultāta pieaugums ir lielāks un straujāks. T un M-grupas dalībnieki arī atzīmēja, ka pulsa atjaunošanās laiks pēc lielām slodzēm tika arī uzlabots, kā arī enerģijas līmenis katram sportistam ir uzlabojies, kas ir izpaudies citu treniņu laikā eksperimenta laika periodā. Pēc datiem arī ir redzams (skat. 1. tab.), ka organisma saskābēšanas līmenis pie lielas slodzes nedaudz izmainījies.



5. att. Grupas rezultāta vidējais pieaugums/kritums, salīdzinot III posmu ar sākumparametriem

Fig 5. Result increase/decrease for each group comparing III phase with initial results

Laktāta kritums vidēji visām grupām ir 4,3 %, kā arī ļoti spilgti redzams jaudas pieaugums M-grupas dalībniekiem - 3,9 %, kā arī skābekļa patēriņa rādītāji eksperimentālajām grupām pieauga vidēji par 3,5 %. Visiem eksperimentālo grupu dalībniekiem skābekļa patēriņš pieaudzis vidēji par 4 %. 30 % gadījumos dalībnieku pulsa rādītāji nedaudz uzlabojās, pievienojot maksimālo slodzes stimulu, kā arī jāatzīmē vidējais laktāta uzlabojums katram dalībniekam visās grupās vidēji par 4 % (skat. 6. att.)



6. att. Dalībnieku rezultātu pieaugums/kritums, salīdzinot III posmu ar sākumparametriem

Fig 6. Result increase / decrease for each participant comparing initial results with III phase results

Pēc II un III posma dalībnieki veica papildu 4 treniņu monociklus, lai noskaidrotu apgrūtināšanas ierīces „UltraBreathe” un „Elevation Mask 2.0” efektivitāti un ietekmi uz sportistu sagatavotību, kā arī lai noteiktu rezultātu izmaiņu dinamiku. Laika posmā no sākuma proves līdz provei, kura tika paņemta pēc noslēdzošiem 4 monocikliem, visi rezultāti ir uzlabojusies, bet, ja salīdzināt rezultātus laika posmā pēc 8. monocikla līdz eksperimenta beigām, rezultāti ir nedaudz pasliktinājušies (skat. 2. tab.).

2. tab. Triatlonistu testu rezultātu salīdzinājums pēc I un IV posma
Table 2 Test results of Triathletes comparing I & IV phase

Posms/ Tests	Eksperimenta I posms				Eksperimenta IV posms			
	W	LA	VO2max	Pulss	W	LA	VO2max	Pulss
1m	371	10,7	62,6	183	382	10,0	63,9	179
2m	377	10,9	65,3	185	390	10,5	68,3	183
3m	395	10,4	65,8	182	412	10,4	68,8	185
1t	388	10,8	62,9	185	392	10,7	63,5	182
2t	377	11,0	58,6	185	380	10,7	59,1	182
3t	374	10,5	62,0	183	377	9,8	62,4	182
1eks	382	11,2	59,0	185	371	10,7	59,0	182
2eks	370	10,7	60,9	182	372	10,6	61,0	185
3eks	369	10,8	61,1	182	369	10,5	61,2	180

Pēc iegūtiem datiem mēs redzam, ka jauda M-grupai no eksperimenta sākuma līdz eksperimenta beigām uzlabojusies par 3.5 % un maksimālais skābekļa patēriņš pieauga par 3.74 %, kas liecina par treniņu efektivitātes pieaugumu. Ir jāatzīmē, ka laktāta līmeņa uzlabošanās pie maksimālām slodzēm M-grupai ir par 3.4 %.

Līdzvērtīgs laktāta līmeņa uzlabojums pie maksimālām slodzēm tika novērots T-grupas dalībniekiem - 3.4 %. Jaudas pieaugums ir tikai 23 % no M-grupas uzrādītā rezultāta - 0.8 % jaudas pieaugums. Pēc iegūtiem datiem mēs redzam, ka jauda M-grupai no eksperimenta sākuma līdz eksperimenta beigām uzlabojusies par 3.5 % un maksimālais skābekļa patēriņš pieauga par 3.74 %, kas liecina par treniņu efektivitātes pieaugumu.

Jāatzīmē, ka laktāta līmeņa uzlabošanās pie maksimālām slodzēm M-grupai ir 3.4 %. Līdzvērtīgs laktāta līmeņa uzlabojums pie maksimālām slodzēm tika novērots T-grupas dalībniekiem - 3.4 %. Jaudas pieaugums sastādīja tikai 23 % no M-grupas uzrādītā rezultāta - 0.8 % jaudas pieaugums. Eks-grupas dalībnieki parādījuši nelielu maksimālā skābekļa patēriņa uzlabojumu - 0.09 %, kas liecina par dabisko pieaugumu, izmantojot izvēlēto treniņu metodiku. Pārējie 3 parametri

neuzlabojās, nokrītot zem sākuma līmeņa, kas liecina par sliktāko atjaunošanos un mazāk efektīvu enerģijas patēriņu.

Kontrolgrupas rezultāti eksperimenta laikā uzrādījuši rezultātu starpību $\alpha > 0.05$, salīdzinot ar dinamiku, kuru uzrādījuši 2 eksperimentālās grupas, - $\alpha < 0.05$. Salīdzinot M-grupas un T-grupas rezultātus, varam secināt, ka pielietojumā ir efektīvāka “Elevation Mask 2.0”, kas ir saistīts ar ergonomikas faktoriem, praktiska pielietojuma faktoriem un precizitāti. Ir nozīmīgs tas fakts, ka “UltraBreathe” ierīces ērtums vairāk ir redzams treniņos, kuri notiek ārpus zāles.

Secinājumi **Conclusions**

Pirms eksperimenta sākuma vidējais maksimālais skābekļa patēriņa (MSP jeb $VO_2\max$) M-grupas rādītājs ir 64.6 ml/kg/min, T-grupas rādītājs - 61.2ml/kg/min, Eks-grupas rādītājs - 60.3 ml/kg/min; vidējais testējamās kustības maksimālas jaudas (W) M-grupas rādītājs ir 381(W), T-grupas rādītājs - 380 (W), Eks-grupas rādītājs - 374 (W); vidējais asins laktāta līmeņa (LA) M-grupas rādītājs ir 10.7 Mol/L, T-grupas rādītājs - 10.8 Mol/L, Eks-grupas rādītājs - 10.9 Mol/L; vidējais pulsa frekvences M-grupas rādītājs ir 183 sit/min, T-grupas rādītājs - 184 sit/min, Eks-grupas rādītājs - 183 sit/min.

Elpošanas apgrūtināšanas ierīces tika pielietotas pirmajos 8 monociklos no 12 aizvadītajiem monocikliem eksperimenta laikā. Treniņa ilgums bija 60 min. Tika konstatēts, ka rezultāts visos pētāmajos parametros uzlabojies jau pēc 4.monocikla, kā arī vēl vairāk rezultāti uzlabojās pēc 8.monocikla. Tika novērota rezultāta neliela pasliktināšanās laikā no 9. līdz 12. monociklam ieskaitot, kur dalībnieki nepielietoja elpošanas apgrūtinātājus, kaut gan salīdzinājumā ar pirmās probes rezultātu tika konstatēts uzlabojums visos parametros.

Salīdzinot M-grupas beigu rezultātus pēc eksperimenta mēs varam konstatēt, ka statistiski ticamas atšķirības ($\alpha < 0.05$) ir testējamās kustības jaudā - W, MSP - $VO_2\max$ ml/kg/min, asins laktātā - LA Mol/L, pulsa frekvencē sit/min, kas liecina, ka šīs grupas dalībniekiem, izmantojot “Elevation Mask 2.0” 8 monociklos, izdevās efektīvāk uzlabot augstāk minētos parametrus starpsezona sagatavotības posmā.

T-grupas visu rezultātu (jauda - W, MSP - $VO_2\max$, laktāts - LA, pulss) kopējais vērtējums $\alpha < 0.05$, kas liecina par pozitīva rezultāta pieaugumu un treniņu biežuma un ilguma efektivitāti grupā, kuras dalībnieki izmantoja “UltraBreathe” apgrūtināšanas ierīci. Grupas dalībnieki atzīmēja arī pazemināto ergonomikas līmeni šīs ierīces pielietošanas laikā, kas bija viens no stresa faktoriem pētījuma laikā.

Eks-grupas visu rezultātu kopējais vērtējums nav statistiski ticams ($\alpha > 0.05$), kas liecina par rezultāta nemainīgumu, kā arī dažkārt pasliktināšanos. Šādu

biežumu un ilgumu, kā arī intervāla un stimula pievienošanu vairāk ieteicams veikt ar elpošanas apgrūtināšanas ierīcēm.

Iegūtie rezultāti apstiprina izvirzīto hipotēzi, ka, elpošanas sistēmas apgrūtināšanas ierīču „UltraBreathe” un „ElevationMask 2.0” pielietošanas biežums un ilgums (12 monocikli), izmantojot to riteņbraukšanā triatlonā, ļauj efektīvāk attīstīt fiziskās īpašības: vispārīgās izturības rādītājus un jaudu.

Summary

Proper and effective breathing is one of the key components that affects the final result and keeping the result for longer period of time, as well as the functionality of the organism and the recovery processes. By improving different breathing phases, you can get an extra energy reserve that will also be used to get better results. Aim of research: An assessment of the effects of the use of the UltraBreathe and ElevationMask 2.0 Respiration depression devices on the physical characteristics, respiratory system and the functionality of the organism. Nine healthy active triathletes (males n=9), age (20 ± 7 years), competitive at national and international level, were trained in the equal conditions using Spinning bikes in the same room ($22 \text{ }^{\circ}\text{C} \pm 2.4 \text{ }^{\circ}\text{C}$ and $82 \pm 4 \text{ } \%$ RH), at the same time, at the same cadence ($100 \text{ revolutions} \pm 5 \text{ rev.}$) and performing the same exercises. All participants had 4 monocycles pre-experimental preparation (PP). Followed by 12 monocycles (hypoxia training – HT) as a part of a monthly microcycle. During a 60 min session one group was using Ultrabreathe, another group was using the Elevation Mask 2.0 and the last group didn't use any device performing as a control group. After another 4 monocycles for recovery (R). Data was collected at the end of each phase-PP (4 monocycles in one week), in the middle and at the end of phase-HT (8-monocycles using Elevation Mask 2.0 and Ultrabreathe devices) and the end of phase-R (4-monocycles with no respiration effort). Maximal oxygen consumption (VO_2max), Lactate (LA), cadence power (W) and heart rate (HR) was recorded and collected as part of the research. All were measured in laboratory conditions using KORR CardioCoach gas analyzing system for VO_2max , cadence power was measured by the Monark LC4R ergometer bike, whereas blood samples were collected for lactate using the COBAS Accutrend Plus device, heart rate data was measured by the POLAR H7 heart rate belts and POLAR Power Flow system. The performances expressed changes in all four parameters on all stages of the experiment. Maximal oxygen consumption showed an increase in two groups who were using the respiratory depression devices after 8 monocycles – by 4,35 and 3,01 % respectively, and by the end of the experiment the total difference was - 3,74 and 0,82 % respectively. Improvements were also defined in the level of increase in lactate and maximum cadence power. There was a power increase in the two groups who were using the respiratory depression devices after 8 monocycles - 3,92 and 1,57 % respectively, and by the end of experiment the total difference was - 3,57 and 0,87 % respectively. All this data shows us the positive effects of hypoxial training. All this data shows us the positive effects of hypoxial training, what might prove a useful tool for increasing endurance and, meanwhile, it might positively affect the final competition results. HT might be used for pulmonary function increase, increase of the respiratory muscles strength and body adaptation against stress created by hypoxial conditions during a race.

Literatūra
References

- Cross, T. J., & Winters C. (2014). Respiratory muscle power and the slow component of O₂ uptake. *Med Sci Sports Exerc.*; 46 (9), 1797-807.
- Dominelli, P. B., Archiza, B., & Ramsook, A. H. (2017). Effects of respiratory muscle work on respiratory and locomotor blood flow during exercise. *Exp Physiol.*;102 (11), 1535-1547.
- Edwards, A., & Cooke, C. (2004). Oxygen uptake kinetics and maximal aerobic power are unaffected by inspiratory muscle training in healthy subjects where time to exhaustion is extended. *Eur J Appl Physiol*; 93 (1-2), 139-44.
- Faiss, R., Leger, B., Vesin, J. M. et al. (2013). Significant molecular and systemic, adaptations after repeated sprint training in hypoxia. *PLoS One*, Vol. 8, 56–64.
- Moreira, A (2016). *Efficacy of Inspiratory Muscle Training on Elite Swimmers*. PEAKNORTE-01-0145-FEDER-000010
- Romer, L., McConnell, A., & Jonesa, A. (2002). Inspiratory muscle fatigue in trained cyclists: effects of inspiratory muscle training. *Med Sci Sports Exerc*;34 (5), 785-92.
- Мищенко, В. (1990). *Функциональные возможности спортсменов*. Киев: Здоров'я.
- Полищук, Д. (1997). *Велосипедный спорт*. К.: Олимпийская литература.
- Стрелков, Р. (2001). *Нормобарическая гипокситерапия. Методические рекомендации Министерства здравоохранения Российской Федерации*. М.: Изд-во ПАИМС.
- Фролов, В. (1998). *Эндогенное дыхание – эффективная технология обеспечения здоровья, молодости, долголетия*. СП «Наука», Новосибирск.
- Чижов, А., & Потиевская В. (1997). Нормализующий эффект нормобарической гипоксической гипоксии. *Физиология человека*, Т.23, № 1, 108-112.

RELATIONSHIPS OF PHYSICAL FITNESS TEST RESULTS AND PLAYER PERFORMANCE INDICATORS IN NATIONAL-LEVEL ICE HOCKEY PLAYERS

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Abstract. *The aim of the study is to identify the relationships of the results of the physiological and anthropometric tests and special on-ice fitness tests with individual player performance indicators during matches of the Poland men's national ice hockey team played during the U18 Ice Hockey World Championship. A total of 20 hockey players (forwards, $n=12$ and defensemen, $n=8$) of the Poland men's national ice hockey team were included in this study. All participants were performed a battery tests including maximal aerobic capacity, Wingate test, Repeated-Skate Sprint test and vertical jump test. Pearson correlations were used to examine any differences in all measures and $+/-$ score. Only the fatigue index calculated from the repeated-skate sprint test was significantly correlated with absolute $+/-$ score ($r=0.47$, $p<0.05$). The result of the aerobic capacity test, expressed by means of the oxygen intake value ($\dot{V}O_2max$), despite being statistically insignificant, reached the value of $r=0.42$. The results of this study suggest that game performance as indicated by the $+/-$ score can be predicted by the fatigue index calculated from the repeated-skate sprint test.*

Keywords: *ice hockey testing, body composition, aerobic fitness, performance indicators.*

Introduction

Ice hockey belongs to the group of sports where both offensive and defensive players perform intermittent high-intensity bouts of exercise with short durations and generate maximal power that allows for performing frequent accelerations and dynamic changes in directions of skating on ice (Bishop, Lawrence, & Spencer, 2003; Buchheit, Lefebvre, Laursen, & Ahmaidi, 2011; Rocznik, Stanula, Maszczyk, et al., 2016). Ice hockey is a physically demanding and contact sport that requires comprehensive preparation of the athlete in terms of aerobic and anaerobic capacity and muscular strength (Stanula, Rocznik, Maszczyk, Pietraszewski, & Zając, 2014). Furthermore, optimal body composition and body build plays an important role in the achievement of high effectiveness during the game (Montgomery, 1988).

In order to maintain a high level of physical fitness, hockey players perform various tests on ice and in a laboratory environment, both in the preparation period and over the entire season (Rocznik, Stanula, Gabryś, et al., 2016). The results of such tests help establish the relationships between the results of physiological and anthropometric tests and physical fitness of players and player performance indicators (Green, Pivarnik, Carrier, & Womack, 2006). These activities are aimed to help determine the effect of individual components of training on sports performance and, consequently, make it easier for coaches to choose adequate variants of athletic training process (Durocher, Leetun, & Carter, 2008).

Previous literature has identified various off-ice testing variables as predictors of on-ice performance (Behm, Wahl, Button, Power, & Anderson, 2005; Bracko & George, 2001). The off-ice tests most frequently applied to evaluate the physical fitness of hockey players, are 40-yd running tests, during which the elements of acceleration, and maximum velocity are also evaluated (Diakoumis & Bracko, 1998). Behm et al. (2005), also recommend to include the evaluation of the power of the lower limbs by means of the vertical jump test, into the evaluation of the physical fitness of the hockey players. Farlinger, Kruisselbrink, & Fowles (2007), in turn, suggest other off-ice measures, including measures of overall leg power (Wingate power), horizontal power (30-m sprint, broad jump, 3 hop jump) lateral power and agility (Hexagon agility), and general strength and stability (push-ups, side support), which, in their opinion are highly interrelated with on-ice skating sprint performance, and cornering agility. In turn, in the group of tests evaluating the physiological predispositions of the competitors, aerobic, and anaerobic capacity tests, are applied. Both anaerobic and aerobic capacities, are currently measured during cycle ergometer protocols (Burr et al., 2008). However, researchers emphasize, that the lack of similarity between the structure of the movement performed during the off-ice test, and the activities performed during play, proves the low prediction value of the tests

(Bracko & George, 2001; Stanula & Roczniok, 2014; Vescovi, Murray, Fiala, & VanHeest, 2006).

The aim of the study is to identify the relationships of the results of the physiological and anthropometric tests and special on-ice fitness tests with individual player performance indicators during matches of the Poland men's national ice hockey team played during the U18 Ice Hockey World Championship.

Materials and Methods

Subjects. All forwards (n=12) and defensemen (n=8) of the Poland men's national ice hockey team who played on the U18 Ice Hockey World Championship were included in this study. Their mean (\pm SD) age was 17.3 ± 0.6 years and 17.0 ± 0.8 years, height 178.8 ± 5.9 cm and 181.0 ± 5.0 cm, and body mass 74.5 ± 9.9 kg and 79.5 ± 9.0 kg, respectively for forwards and defensemen. Goaltenders were not included in analysis because they have a distinctly different role in the game and therefore require a different skill set to be successful. Written informed consent was obtained from all participants and parents after a brief but detailed explanation about the aims, benefits, and risks involved with this investigation. The research project was approved by the Bioethics Commission at the Regional Medical Chamber in Krakow as consistent with the institutional ethical requirements for human experimentation in accordance with the Helsinki Declaration.

Procedures

Anthropometric and physiological data of the test was carried out 2 weeks before the World Championships. Body height was determined including barefoot height (± 0.1 cm) using a wall mounted stadiometer. Body composition was estimated using an 8-electrode bioimpedance analysis device (InBody 720, Biospace). All the measurements were taken by a certified representative of MEDfitness, a sole distributor of the InBody body composition analyzer in Poland. Body weight measurement was taken in the morning (09.00-10.00 a.m.), two hours after a light breakfast.

Vertical Jump. Vertical jump height was measured using a Optojump photocell system (Microgate, Bolzano, Italy). The jumps were performed with an arm swing and use of the stretch shortening reflex in a stationary position (no pre-step). Subjects completed 2 trials and the best trial was recorded. A rest period of 30 seconds was given between trials. Jump heights were recorded to the nearest 0.1 cm. Peak vertical jump power was calculated using the Sayers equation: $power (W) = [60.7 \times vertical\ jump\ displacement (cm)] + [45.3 \times weight (kg)] - 2055$.

30-Second Wingate test. Wingate test was performed on Cyclus 2 (RBM elektronik-automation GmbH Germany). The test was carried out according to the

following protocol: the load was selected individually and it constituted 10 % of the body weight, the test was preceded by a 5-min warm-up with the 30 % load of that used during the test and with a revolution frequency of 60 revolution per minute. After the warm-up and 3-min break each subject began the test with full load from the frequency of 100 ± 16 revolution per minute (differently than in the Wingate protocol). The subjects started to exercise with maximal intensity. When 30 rpm was achieved, the load was activated automatically to continue for 30 seconds. In that period, the subjects were to maintain maximum rotational frequency. The following parameters were recorded during the test: absolute peak power (W), mean power (W), relative peak power ($W \times kg^{-1}$) and relative mean power ($W \times kg^{-1}$).

Standard Incremental Maximal Oxygen Uptake ($\dot{V}O_2max$) Test to the Point of Exhaustion. A standard incremental maximal oxygen uptake test was conducted in the laboratory by means of open-circuit spirometry and computerized instrumentation. Each subject performed the test until voluntary exhaustion on a cycling ergometer platform Cyclus 2 (RBM elektronik-automation GmbH, Leipzig, Germany). Prior to the test, the players warmed up on the ergometer for 5 minutes of steady ride at power level of $1 W \cdot kg^{-1}$ after which exercise intensity was increased to $4 W \cdot kg^{-1}$ for a duration of 10 seconds. The first 3 minutes of the test were completed at an intensity of $1 W \cdot kg^{-1}$ of body weight, and then intensity was increased every 3 minutes by $0.5 W \cdot kg^{-1}$ of body weight. Exhaled air was continuously sampled by an K4b2 (Cosmed, Italy) and the rate of oxygen consumption ($\dot{V}O_2$), carbon dioxide production ($\dot{V}CO_2$), minute ventilation ($\dot{V}E$), and the respiratory exchange ratio (RER) were calculated every 5 seconds by an on-line computer system. The K4b2 was calibrated in accordance with the manufacturer's specifications at the beginning of each test day. The test was stopped if the subject wished so or if the $\dot{V}O_2max$ criteria were met (e.g. RER greater than 1.10 at test termination; oxygen consumption reaching a plateau or starting to fall even though the work rate kept increasing or the maximal age-specific heart rate was reached) (Davis, 2006; McArdle, Katch, & Katch, 2010). Throughout the test, HRs were recorded every 5 seconds by means of a Fix Polar Heart Rate Transmitter Belt (Polar electro OY, Kempele, Finland).

Repeated-Skate Sprint test (RSS). Each subject completed the Repeated-Skate Sprint test (RSS) consisting of 6 timed 89-m sprints, with 30 s of rest between subsequent efforts (Reed et al., 1980). Subjects wearing full hockey equipment except for the stick performed 6 timed 89 m sprints at the highest velocity, with 30 s of a rest period between subsequent efforts. Before the test commenced, each subject carried out an individual 5 min warm-up with elements such as skating forward, skating backward, starts and stops. Each test sprint started at the goal line. Having crossed the opposite goal line (54 m) with both skates the player would stop immediately and then skated back towards the blue

line situated closer to the start line (89 m), the crossing of which ended the sprint. Exactly 30 s after he crossed the blue line the player would skate again. Photocells made by Microgate (Bolzano, Italy) recorded the times of each sprint with accuracy of 0.01 s, separately for the length between the start line and the opposite goal line (54 m) and between the latter and the blue line closer to the start line (35 m). Together with the time of the return, the two times consisted the total time of one sprint (89 m). The indicators were respectively FLS (the time of the first length skate) and TLS (the total time of the whole distance). Furthermore, a fatigue index (FI) was calculated from the following formula ((the fastest skate time – the slowest skate time)/the fastest skate time) x 100).

Testing was conducted on 3 separate days. Day 1: Anthropometrics, Vertical jumps and $\dot{V}O_2\text{max}$, day 2: Wingate test, day 3: repeated-skate sprint test.

The principal outcome measure of hockey performance in this study was the +/- score recorded for each player over the course of the U18 Ice Hockey World Championship. Player is credited with a plus every time he is on the ice and the team scores an even strength or shorthanded goal. A player receives a minus every time he is on the ice and the other team scores an even strength or shorthanded goal. Power play goals and penalty shot goals are not used in the +/- score. A player's overall +/- score is calculated by subtracting the minuses from the pluses. In general, players with a higher total are considered to be better players. An advantage of the +/- system is that it reflects both offensive and defensive effort and is not largely impacted by games missed due to illness, injury, or position played in the way that total goals scored might be (Peyer, Pivarnik, Eisenmann, & Vorkapich, 2011).

Statistical analysis. Descriptive statistics including mean \pm standard deviations (SD) were calculated for each variable. All variables were examined for normal distribution. Differences between the forwards and defensemen players were established with the two-tailed t-test for independent variables. The relationships between variables obtained from the all tests and +/- score were determined with the Pearson's product-moment correlation analysis. The level of significance was set at 0.05 for all tests. Calculations were performed with the Statistica 13 statistical software package (Dell Statistica, Dell Inc., USA).

Results

Anthropometric and physiological characteristics of participants are shown in Table 1. On the basis of the presented results, it can be stated, that the forwards are slightly taller, and have a slightly lower body mass, as compared to the defensemen. However, these differences are not statistically significant. It can also be noted, that there is a slight, statistically insignificant difference in the

$\dot{V}O_2\text{max}$, and the relative values of the power obtained in the Wingate test, to the benefit of the forwards.

Table 1 Descriptive characteristics of forwards and defensemen of Poland men's national ice hockey team played during the U18 Ice Hockey World Championship

Variables	Forwards (n=12)	Defensemen (n=8)	p-level	Total (n=20)
Age (y)	17.3±0.6	17±0.8	0.429	17.2±0.7
Body mass (kg)	74.5±9.9	79.5±9	0.268	76.5±9.7
Height (cm)	178.8±5.9	181±5	0.389	179.7±5.5
% FAT	9±2.8	11.8±3.6	0.064	10.1±3.3
FFM (kg)	67.6±7.6	69.9±6	0.500	68.5±7
$\dot{V}O_2\text{max}$ (ml×kg ⁻¹ ×min ⁻¹)	58.8±3.9	58.3±4.8	0.769	58.6±4.2
HRmax (b×min ⁻¹)	182.6±6.9	186.6±7.8	0.238	184.2±7.4
WAPP (W)	954±133,8	1055±165,7	0,150	994±151,8
WAMP (W)	763±99,3	817±115,2	0,272	785±106,6
WRPP (W×kg ⁻¹)	13±0,6	13,2±1,3	0,648	13,1±0,9
WRMP (W×kg ⁻¹)	10,4±0,7	10,3±0,9	0,701	10,4±0,7
VJH (cm)	41,8±3,2	41,1±3	0,650	41,5±3
VJPP (W)	3854±410,6	4041±470,8	0,359	3929±433,7
RSS TLS-F (s)	13,5±0,3	13,6±0,4	0,549	13,5±0,4
RSS TLS-Avg (s)	14,8±0,4	14,5±0,3	0,064	14,7±0,4
RSS TLS-Fi (s)	15,1±1,3	14,9±1,1	0,765	15±1,2
Plus/minus	-3,1±2,8	-2,8±1,3	0,756	-3±2,3

The Pearson correlation coefficients between anthropometric and on- and off-ice variables are shown in Table 2. From among all the parameters attained as result of the measurements carried out, only the fatigue index calculated from the repeated-skate sprint test was significantly correlated with absolute +/- score ($r=0.47$, $p<0.05$). Nonetheless, it's noteworthy that the result of the aerobic capacity test, expressed by means of the oxygen intake value ($\dot{V}O_2\text{max}$), despite being statistically insignificant, reached the value of $r=0.42$. In addition, the $\dot{V}O_2\text{max}$ is significantly correlated with the Wingate test results ($r=0.57$, $p<0.01$ and $r=0.53$, $p<0.05$ for absolute peak power and absolute mean peak power, respectively), the results of vertical jumps ($r=0,63$, $p<0.01$ for vertical jump peak power) and also with the fatigue index calculated from the repeated-skate sprint ($r=-0.62$, $p<0.01$).

Table 2 Pearson correlations among major variables for the entire sample

	Age (y)	Body mass	Height	% FAT	FFM	V _{O2max}	HR _{max}	WAPP	WAMP	WRPP	WRM _P	VJH	VJPP	RSS TLS-F	RSS TLS-Avg	RSS TLS-Fi	Plus/minus
Age (y)	-																
Body mass (kg)	0.06	-															
Height (cm)	0.17	0.86	-														
% FAT	0.14	0.79	0.60	-													
FFM (kg)	0.01	0.97	0.87	0.62	-												
V _{O2max} (ml×kg ⁻¹ ×min ⁻¹)	0.17	-0.59	-0.69	-0.33	-0.62	-											
HR _{max} (b×min ⁻¹)	0.29	-0.08	-0.20	0.09	-0.15	0.25	-										
WAPP (W)	0.06	0.81	0.73	0.66	0.78	0.57	0.02	-									
WAMP (W)	0.18	0.78	0.74	0.62	0.76	0.53	0.04	0.96	-								
WRPP (W×kg ⁻¹)	0.03	-0.07	0.02	-0.03	-0.07	0.20	0.15	0.47	0.42	-							
WRMP (W×kg ⁻¹)	0.26	-0.28	-0.11	-0.24	-0.26	0.02	0.20	0.18	0.29	0.81	-						
VJH (cm)	0.13	-0.23	-0.18	-0.17	-0.22	0.08	0.27	-0.08	-0.06	0.49	0.57	-					
VJPP (W)	0.11	0.91	0.79	0.73	0.89	0.63	0.03	0.78	0.77	0.14	-0.04	0.19	-				
RSS TLS-F (s)	0.28	0.50	0.46	0.34	0.50	-0.22	-0.05	0.02	0.01	-0.65	-0.66	-0.24	0.40	-			
RSS TLS-Avg (s)	0.31	0.50	0.43	0.22	0.55	-0.39	-0.23	0.06	0.03	-0.53	-0.60	-0.18	0.43	0.59	-		
RSS TLS-Fi (s)	0.08	0.56	0.58	0.32	0.59	-0.62	-0.23	0.56	0.53	0.27	0.10	0.14	0.62	0.01	0.44	-	
Plus/minus	0.10	0.03	0.07	-0.12	0.09	0.42	-0.05	0.04	0.01	0.27	0.23	0.32	0.17	-0.01	-0.03	0.47	-

Note: $r \geq 0.44$ are significant at $p < 0.05$; $r \geq 0.56$ are significant at $p < 0.01$; %FAT = fat free mass; HR = heart rate; WAPP = Wingate absolute peak power; WAMP = Wingate absolute mean power; WRPP = Wingate relative peak power; WRM_P = Wingate relative mean power; VJH = Vertical Jump height; VJPP = Vertical Jump peak power; RSS TLS-F = Repeated-Skate Sprint – time of the fastest total length skate 89 m (s); RSS TLS-Avg = Repeated-Skate Sprint – average time of the total length skate 6x89 m (s); RSS TLS-Fi = Repeated-Skate Sprint – fatigue index calculated from the times recorded for subsequent TLS.

Discussion

This study aimed to identify the relationships of the results of the physiological and anthropometric tests and special on-ice fitness tests with individual player performance indicators (+/- score) during matches of the Poland men's national ice hockey team played during the U18 Ice Hockey World Championship. The main finding was that the +/- score was significantly correlated only with fatigue index calculated from the repeated-skate sprint ($r=-0.62$). However, it came as a great surprise to us, that there is no significant relationship between the $\dot{V}O_2\text{max}$ and the +/- score ($r=0.42$, n.s.). Green et al. (2006) have shown, in the course of their research, that the $\dot{V}O_2\text{max}$ is to be a significant predictor of performance. The difference in findings may be reflected in the outcome measure because +/- score is highly dependent on goalie ability as only goals impact the score. Scoring chances, on the other hand, is not directly impacted by goalie play (Peyer et al., 2011).

Ice hockey is characterized by multiple periods of high-intensity exercise interspersed with recovery periods. Energy for high-intensity exercise of this duration is supplied by anaerobic metabolism. Recovery from high-intensity exercise is thought to correlate with restoration of these metabolites to normal levels where the aerobic system may be of prime importance in this recovery process (Carey, Drake, Pliego, & Raymond, 2007). Taking into account the fact, that some researchers have shown there to be a relationship between the $\dot{V}O_2\text{max}$, and the fatigue index calculated from the repeated-skate sprint ($r=-0.62$), in the course of this study, the statistically significant relationship between the fatigue index calculated from the repeated-skate sprint test, and the absolute +/- score ($r=0.47$, $p<0.05$). The relationships between $\dot{V}O_2\text{max}$ and the FI for repeated sprints found in this studies seem to indicate that aerobic processes play a role in the recovery of energy substrates, which are necessary to exercise at high intensity (Stanula et al., 2014). There are many mechanisms that can explain this results. Most of all, high aerobic power increases the ability to recover from repeated bouts of anaerobic power, and probably decreases lactate concentrations in response to higher LA utilization in slow twitch muscle fibres (Tesch & Wright, 1983; Tomlin & Wenger, 2001).

Despite it being demonstrated in numerous research that there was a relationship among the vertical jump and on-ice maximum skating speed and acceleration time (Behm et al., 2005; Bracko & George, 2001; Farlinger, Kruisselbrink, & Fowles, 2007b), in this study there was no noted relationship among the vertical jump test results, the lower limb power attained in the Wingate test, and the +/- score. The causes of this state of affairs are difficult to explain. It is, however, to be emphasized that the participants of the study are at the threshold of their professional careers as hockey players. Some psycho-physiological

characteristics, are not yet fully developed at their age. Besides, the Polish National Hockey Team is not among the best in the world. The adopted +/- evaluation system, on principle, gives better notes to the teams with a higher goal-scoring potential. That is why, individual results, depend, to a great extent on the level of training of the opponent team. This is, thus, one of the key factors proving that ice hockey is a very complex team game, the final result of which depends on various factors (Roczniok, Stanula, Maszczyk, et al., 2016).

There are some limitations considerations in this study. The findings are somewhat limited by the small sample size, which was inherently limited by the fact that we examined only 1 team which participated in 1 championships. Future studies should include larger samples, longer periods of observations and when possible, more sensitive outcome measures.

Conclusions

The results of this study suggest that game performance as indicated by the +/- score can be predicted by the fatigue index calculated from the repeated-skate sprint test. The results of the anthropometric measurements and body composition, as well as those of lower limb power tests, have not shown a significant influence upon the player performance as measured by the +/- system evaluation.

References

- Behm, D. G., Wahl, M. J., Button, D. C., Power, K. E., & Anderson, K. G. (2005). Relationship between hockey skating speed and selected performance measures. *Journal of Strength and Conditioning Research*, 19 (2), 326–331.
- Bishop, D., Lawrence, S., & Spencer, M. (2003). Predictors of repeated-sprint ability in elite female hockey players. *Journal of Science and Medicine in Sport*, 6 (2), 199–209.
- Bracko, M. R., & George, J. D. (2001). Prediction of ice skating performance with off-ice testing in women's ice hockey players. *Journal of Strength and Conditioning Research*, 15 (1), 116–122.
- Buchheit, M., Lefebvre, B., Laursen, P. B., & Ahmaidi, S. (2011). Reliability, usefulness, and validity of the 30-15 Intermittent Ice Test in young elite ice hockey players. *Journal of Strength and Conditioning Research*, 25 (5), 1457–1464.
- Burr, J. F., Jamnik, R. K., Baker, J., Macpherson, A., Gledhill, N., & McGuire, E. J. (2008). Relationship of physical fitness test results and hockey playing potential in elite-level ice hockey players. *Journal of Strength and Conditioning Research*, 22 (5), 1535–1543.
- Carey, D. G., Drake, M. M., Pliego, G. J., & Raymond, R. L. (2007). Do hockey players need aerobic fitness? Relation between VO₂max and fatigue during high-intensity intermittent ice skating. *Journal of Strength and Conditioning Research*, 21 (3), 963–966.
- Davis, J. A. (2006). Direct determination of aerobic power. In P. J. Maud & C. Foster (Eds.) (2nd ed., pp. 9–18). Champaign, IL: Human Kinetics.
- Diakoumis, K., & Bracko, M. R. (1998). Prediction Of Skating Performance With Off-ice

- Testing In Deaf Ice Hockey Players. *Medicine & Science in Sports & Exercise*, 30 (5), 272.
- Durocher, J. J., Leetun, D. T., & Carter, J. R. (2008). Sport-specific assessment of lactate threshold and aerobic capacity throughout a collegiate hockey season. *Applied Physiology, Nutrition, and Metabolism = Physiologie Appliquee, Nutrition et Metabolisme*, 33 (6), 1165–1171.
- Farlinger, C. M., Kruisselbrink, L. D., & Fowles, J. R. (2007a). Relationships to skating performance in competitive hockey players. *Journal of Strength and Conditioning Research*, 21 (3), 915–922.
- Farlinger, C. M., Kruisselbrink, L. D., & Fowles, J. R. (2007b). Relationships to skating performance in competitive hockey players. *Journal of Strength and Conditioning Research*, 21 (3), 915–922.
- Green, M. R., Pivarnik, J. M., Carrier, D. P., & Womack, C. J. (2006). Relationship between physiological profiles and on-ice performance of a National Collegiate Athletic Association Division I hockey team. *Journal of Strength and Conditioning Research*, 20 (1), 43–46.
- McArdle, W. D., Katch, F. I., & Katch, V. L. (2010). *Exercise physiology: nutrition, energy, and human performance* (7th ed.). Baltimore, MD: Lippincott Williams & Wilkins.
- Montgomery, D. L. (1988). Physiology of Ice Hockey. *Sports Medicine*, 5 (2), 99–126.
- Peyer, K. L., Pivarnik, J. M., Eisenmann, J. C., & Vorkapich, M. (2011). Physiological characteristics of National Collegiate Athletic Association Division I ice hockey players and their relation to game performance. *Journal of Strength and Conditioning Research*, 25 (5), 1183–1192.
- Reed, A., Hansen, H., Cotton, C., Gauthier, R., Jette, M., Thoden, J., & Wenger, H. (1980). Development and validation of an on-ice hockey fitness test [abstract]. *Canadian Journal of Applied Sport Sciences*, (5), 245.
- Roczniok, R., Stanula, A., Gabryś, T., Szmatlan-Gabryś, U., Gołaś, A., & Stastny, P. (2016). Physical fitness and performance of polish ice-hockey players competing at different sports levels. *Journal of Human Kinetics*, 50 (2), 201–208.
- Roczniok, R., Stanula, A., Maszczyk, A., Mostowik, A., Kowalczyk, M., & Zajac, A. (2016). Physiological, physical and on-ice performance criteria for selection of elite ice hockey teams. *Biology of Sport*, 33 (1), 43–48.
- Stanula, A., & Roczniok, R. (2014). Game Intensity Analysis of Elite Adolescent Ice Hockey Players. *Journal of Human Kinetics*, 44 (1), 211–221.
- Stanula, A., Roczniok, R., Maszczyk, A., Pietraszewski, P., & Zajac, A. (2014). The role of aerobic capacity in high-intensity intermittent efforts in ice-hockey. *Biology of Sport*, 31 (3), 193–195.
- Tesch, P. A., & Wright, J. E. (1983). Recovery from short term intense exercise: its relation to capillary supply and blood lactate concentration. *European Journal of Applied Physiology and Occupational Physiology*, 52 (1), 98–103.
- Tomlin, D. L., & Wenger, H. A. (2001). The relationship between aerobic fitness and recovery from high intensity intermittent exercise. *Sports Medicine (Auckland, N.Z.)*, 31 (1), 1–11.
- Vescovi, J. D., Murray, T. M., Fiala, K. A., & VanHeest, J. L. (2006). Off-ice performance and draft status of elite ice hockey players. *International Journal of Sports Physiology and Performance*, 1 (3), 207–221.

ANAEROBIC POWER IN SPORTS

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Abstract. *The aim of the present study is to determine the anaerobic power of men of similar age representing different sports disciplines. Professional athletes representing the following sports participated in the study: soccer (n=15, PS), martial arts (n=12, MA), weightlifting (n=15, WL), powerlifting (n=15, PL), middle- and long distance running (n=12, DR), race walking (n=14, RW), and recreational soccer (n=15, RS). After recording personal and somatic data, the subjects performed a 3-minute warm-up followed immediately by a 30 seconds cycloergometric Wingate test. The following variables of anaerobic power were calculated: total external work (TEW-KJ/30s), maximal power (Pmax-W/kg), mean power (Pmean-W/kg), fatigue index (FI- %). It was shown that the examined groups differed in body weight (F=13.560, p<0.001), body height (F=3.342, p<0.01) and BMI (F=28.868, p<0.01). There were also significant differences in the TEW range (F=5.764, p<0.001), Pmax (F=2.807, p=0.013) and FI=4.942, p<0.001) and no intergroup difference in the Pmean range. In conclusion, it should be pointed out that various types of sports training develop in the various degree different components of anaerobic power, however they develop similarly its average value.*

Keywords: anaerobic power, sport; training.

Introduction

The classic 30-second Wingate test is often used to assess the so-called anaerobic power, which reflects the maximum rate of ATP resynthesis (Minahan et al., 2007). The analysis of the mechanical power developed during this test allows to distinguish four components of anaerobic power: total external work performed in 30s (TEW), maximal power (Pmax), mean power (Pmean) and fatigue index (FI). TEW and Pmean are connected with an anaerobic capacity, maximal power expresses maximal power output and fatigue index reflects

anaerobic endurance. Because the high correlation between maximal power developed during the 30 second duration of this test with phosphocreatine and muscle acidosis (Cheetham et al., 1986; Bogdanis et al., 1995) was described, it is reasonable to use the mechanical variables obtained in the Wingate test as anaerobic power indicators. Anaerobic power plays an important role in sport and is a good indicator of the physical performance in many sports' disciplines (Hoffman et al., 2017; Janot et al., 2015; Roczniok et al., 2016). A significant part of its development is genetically conditioned (Lortie et al., 1986), but the type and intensity of the applied sports training has a great share in its stimulation. A high level of anaerobic power was recorded in volleyball and basketball groups (Popadic Gacesa et al., 2009), weightlifters (Pilis et al., 1997), powerlifters and wrestlers (Hakkinen et al., 1984) but low among long distance runners (Skinner et al., 1986) and handball players (Popadic Gacesa et al., 2009). The above-mentioned types of anaerobic power among various sports' groups are supported by laboratory tests, which indicate that strength training (Larid et al., 2016; Zajac et al., 1999) and plyometric training (Asadi, 2015) have a significant influence on the increase of anaerobic power. Taking into account the above data in the presented work, it was decided to compare the anaerobic power indicators of several sports groups differing in the nature of their training. The comparisons include professional athletes: soccer, martial arts, weightlifting, powerlifting, middle and long distance running, race walking and the group of recreationally trained soccer players.

Materials and Methods

The study involved seven athletic groups of a similar age. Professional athletes were represented by: soccer (n=15, PS), martial arts – taekwondo and brazilian jiu-jitsu (n=12, MA), weightlifters (n=15, WL), powerlifters (n=15, PL), middle and long distance runners (n=12, DR), race walkers (n=14, RW). Recreational sport was represented by soccer players (n=15, RS). Professional athletes represented a similar sports' level (II, I and master sport class) but the recreational soccer players had no any sport class. The length of applied sports training in all groups ranged between 2.5 and 14 years. Despite such a large dispersion of the training experience, the subjects represented a similar level of sports performance reaching the first and the master class level, and therefore the subjects with extremely high or low training experience were not rejected from the research.

All subjects have not used medications and they reported to the laboratory in the morning, 2 hours after a light meal. At the first stage of the study age, body mass (BM) and body height (BH) were recorded, while BMI index was calculated. At the next stage a specific 5-minute long warming-up was

conducted on a cyclo-ergometer (brand, Excalibur Sports). Then on the same cycloergometer the 30-second Wingate test was performed with resistance set at 0.075kp x kg⁻¹BM. After ending the test total external work (TEW-KJ/kg), maximal power output (Pmax-W/kg), mean power (Pmean-W/kg), and fatigue index (FI-%) were calculated.

The study was conducted with the permission nr KB-1/2013 of Ethical Committee of Jan Długosz University in Częstochowa.

In first stage of statistical preparation arithmetic means and standard deviations of obtained results were calculated. In next stage one-way analysis of variance with post hoc Tukey test were used. The level of statistical significance was set at p<0.05.

Results

The respondents of similar age (Table 1) differed in body weight (F=13.560, p<0.001), body height (F=3.342, p<0.01) and BMI (F=28.868, p<0.001).

Table 1 Age and somatic variables of tested athletes

Group	Age [years]		BM [kg]		BH [cm]		BMI [kg*m ⁻²]	
	x	±SD	x	±SD	x	±SD	x	±SD
PS, n=15	22,60	4,01	76,07	7,92	182,13	6,28	22,92	1,95
RS, n=15	23,47	4,78	74,67	7,84	178,60	4,44	23,41	2,21
MA, n=12	24,12	7,28	72,34	9,41	173,11	7,15	24,11	3,03
WL, n=15	22,80	2,96	79,85	15,75	174,40	8,54	26,02	3,20
PL, n=15	25,67	5,45	94,36	13,20	175,60	9,79	30,45	2,16
DR, n=12	22,81	6,02	68,03	3,70	181,00	3,40	20,72	1,18
RW, n=14	22,21	7,16	62,65	8,54	174,28	6,71	20,60	2,42
F	0,670		13,560		3,342		28,868	
p<	0,674		0,001		0,01		0,001	

PS – soccer players; RS – recreational soccer players; MA- martial arts athletes; WL – weightlifters; PL - powerlifters; DR - middle- and long distance runners; RW – race walkers

The results of post-hoc analysis of somatic variables (Table 3) show that PL achieved significantly higher body mass than the other groups. PS, on the other hand, were higher than MA and RW (p<0.01) as well as WL and PL (p<0.05). PL had significantly higher BMI in comparison to other sports groups (p<0.001).

Table 2 Anaerobic power variables of the tested athletes

Group	TEW [kJ/30s]		Pmax [W/kg]		Pmean [W/kg]		FI [%]	
	x	±SD	x	±SD	x	±SD	X	±SD
PS, n=15	19,31	4,25	14,21	1,85	8,46	1,40	65,52	16,19
RS, n=15	18,02	1,70	13,38	2,49	8,21	1,03	54,91	8,03
MA, n=12	17,29	2,65	12,61	1,02	8,10	0,79	56,02	6,54
WL, n=15	17,99	3,76	14,21	2,70	7,61	1,16	68,37	10,57
PL, n=15	21,64	4,43	13,98	2,37	7,67	0,90	64,23	6,94
DR, n=12	16,31	1,97	12,49	2,29	8,36	0,76	54,19	16,14
RW, n=14	14,62	2,80	11,50	1,51	7,87	0,94	51,18	7,94
F	5,764		2,897		1,558		4,942	
p<	0,001		0,013		0,169		0,001	

PS – soccer players; RS – recreational soccer players; MA- martial arts athletes; WL – weightlifters; PL - powerlifters; DR - middle- and long distance runners; RW – race walkers

Table 3 Results of intergroup statistical comparisons with the post hoc test

Groups	Age [years]	BM [kg]	BH [cm]	BMI [kg/m ²]	TEW [kJ/30s]	Pmax [W/kg]	Pmean [W/kg]	FI [%]
PS-RS	NS	NS	NS	NS	NS	NS	NS	0.05
PS-MA	NS	NS	0.01	NS	NS	0.05	NS	NS
PS-WL	NS	NS	0.05	0.01	NS	NS	NS	NS
PS-PL	NS	0.001	0.05	0.001	NS	NS	NS	NS
PS-DR	NS	0.01	NS	NS	NS	NS	NS	NS
PS-RW	NS	0.001	0.01	0.05	0.01	0.001	NS	0.01
RS-MA	NS	NS	0.05	NS	NS	NS	NS	NS
RS-WL	NS	NS	NS	0.05	NS	NS	NS	0.001
RS-PL	NS	0.001	NS	0.001	0.01	NS	NS	0.01
RS-DR	NS	0.05	0.05	0.001	NS	NS	NS	NS
RS-RW	NS	0.001	NS	0.01	0.001	0.05	NS	NS
MA-WL	NS	NS	NS	NS	NS	NS	NS	0.01
MA-PL	NS	0.001	NS	0.001	0.01	NS	NS	0.01
MA-DR	NS	NS	0.01	0.01	NS	NS	NS	NS
MA-RW	NS	0.05	NS	0.01	0.05	0.01	NS	NS
WL-PL	NS	0.05	NS	0.001	0.05	NS	NS	NS
WL-DR	NS	0.01	0.05	0.001	NS	NS	NS	0.05
WL-RW	NS	0.001	NS	0.001	0.05	0.01	NS	0.001
PL-DR	NS	0.001	NS	0.001	0.001	NS	NS	0.05
PL-RW	NS	0.001	NS	0.001	0.001	0.01	NS	0.001
DR-RW	NS	NS	0.01	NS	NS	NS	NS	NS

NS – no significant

Analysis of variance showed (Table 2) that the sports groups differed also in the TEW range ($F=5.764$; $p<0.001$), Pmax ($F=2.897$; $p=0.013$) and FI ($F=4.942$; $p<0.001$). Post hoc analysis showed (Table 3) that TEW achieved by PL was significantly higher than that found in the groups: RW and DR ($p<0.001$), RS and MA ($p<0.01$), and WL ($p<0.05$). The high Pmax values achieved by the PS group differed from the results achieved by RW ($p<0.001$) and MA ($p<0.05$) and the Pmax of the WL group were higher than RW ($p<0.01$). However, the highest FI values were achieved in the WL group and they were significantly higher than in the groups: RW and RS ($p<0.001$), MA ($p<0.01$), and DR ($p<0.05$). The other comparisons of post hoc results are presented in Table 3.

Discussion

The highest body mass was achieved by PL and the tallest were in PS group. Significant differences in the scope of these two somatic variables were not related to the age of the respondents, because all subjects' groups were similar in this respect and BM and BH significantly influenced the BMI index. This variable in the initial stages of almost every kind of training is reduced due to the decrease in fat content in the body (Milanović et al., 2015) and also during later stages of endurance training, while in the case of strength training BMI increase is due to the appearance of hypertrophy of the skeletal muscles. The highest BMI values in the present studies were achieved in the PL group and they were significantly higher than in the other groups ($p<0.001$), even in those with strength training (WL and MA). The effect of strength training resulting in significant skeletal muscle hypertrophy was especially significant among WL, whose BMI significantly exceeded this variable in the PS, RS, DR and RW groups, and reached a similar value to that occurring in the MA group. Strength training among WL is practiced in a smaller volume than by PL, as the athletes of the first group have to devote a significant amount of time to learning and improving the technique of performing classical exercises, therefore the range of their muscle hypertrophy is to a lesser extent than in PL. MA's athletes also devote more training time to learning and improving the technical elements of a sports fight and a less time, although still statistically significant for strength exercises; this also caused a considerable muscle hypertrophy effect among them. These effects of strength exercises on the increased development of the muscular system were manifested in the fact that the BMI index in WL and MA groups did not differ statistically. In MA group, muscle hypertrophy occurred to a significant extent, because BMI of these athletes was higher than in DR and WR groups ($p<0.01$), where these athletes incorporate strength exercises into their trainings in a specific form and in a significantly limited amount. However

a relatively small number of strength exercises and exercises that affect the development of power are carried out in PS and RS training, which stimulate the development of strength and muscle mass of these athletes to a significant extent. Therefore, the BMI in PS group was significantly higher in comparison with RW group ($p < 0.05$) and in RS group was significantly higher than in DR group ($p < 0.001$), and in RW group ($p < 0.01$). Somatic determinants in competitive sports are given a significant role. It is even observed that in running and jumping disciplines, and in soccer, slim body shape (low BMI) may be an important factor supporting the development of sports level (Rielly et al., 2000; Pilis et al., 2013), what cannot be said in relation to strength competition.

Following the somatic changes, intergroup differences in TEW, Pmax and FI range were observed. The absolute value of TEW does not add much knowledge when comparing the anaerobic power of athletes from different disciplines present in this study, because in a significant part it is only a reflection of the impact of body mass on the obtained values of this variable. Interestingly, the athletes of the studied groups did not differ in Pmean size, despite the significant somatic (BM) differences and the nature of their training. Strength training (Pilis et al., 1997) and soccer training (Milanović et al., 2015) in a large and significant part caused the development of anaerobic power and in this study led to significant development of Pmax in WL and PS groups. At the same time, these types of training did not lead to the development of anaerobic endurance, resulting in high FI values in both groups. The reverse relation between Pmax and FI was observed, in DR and RW groups, whose training to a small extent stimulated maximal power and more strongly shaped anaerobic endurance. Physiological adaptation to such trainings boils down to the fact that in the both groups of athletes low Pmax and FI values were achieved, which was confirmed in the available literature (Popadic Gacesa et al., 2009; Skinner, 1986). Globally, it can be concluded that the different types of applied sports training led to the formation of other patterns of anaerobic power. Strength training and power development training increased the maximal anaerobic power, which decreased faster in time (because athletes were not able to maintain it at a high level) than in endurance training groups, in which maximal anaerobic power were at a lower level. As a result, during the 30s Wingate test Pmean reached a similar level in all investigated in the present study athletes' groups. It should be assumed that in case of longer tests of anaerobic power evaluation, endurance trained athletes would achieve higher Pmean values than strength trained athletes, which is confirmed by practical observation of the exercise capacity of various sports groups. The basis for PS, RS, DR and RW training is high and mainly medium intensity running (Milanović et al., 2015; Larsen, 2003), but in soccer training there is also anaerobic power development, while in runners and race walkers training development of aerobic power is

based on high oxygen uptake (Maldonado et al., 2002). In the other studied groups i.e. in WL and PL, anaerobic power is developed to a high degree and MA in the middle range as a result of the use of specialized training for these sport disciplines. The comparison of the anaerobic power variables in soccer groups with different sports level showed slight differences between PS and RS and this concerned only the FI indicator ($p < 0.05$). This means that RS athletes were also to some extent trained, as evidenced by the fact that they achieved similar Pmax and Pmean values in relation to other studied groups. It should also be taken into account that, apart from the type of training, the genetic factors (Lortie et al., 1986) and the specificity of the mechanical work performed during the test evaluating this feature have a significant influence on the values of the obtained anaerobic power (Hilliard et al., 1991; Williams & Nute, 1983). To improve proper technique of movement it is recommended the compensatory exercises are included in order to reduce muscle imbalance (Horbach et al., 2013). For all groups in the presented studies, the Wingate test used to assess anaerobic power was unspecific, as none of these groups of athletes trained on cycloergometer or bicycles. Thus, in this respect, the test conditions for all studied athletes were comparable.

Conclusion

1. The type of used sport training determines the quality of changes in anaerobic power parameters and somatic conditions.
2. Strength training increases maximal anaerobic power, but to a lesser extent it develops anaerobic endurance.
3. Endurance training to a lesser extent develops maximal anaerobic power with a significant impact on the development of anaerobic endurance.
4. In order to better understand the mutual relationships between the various components of anaerobic power, it is recommended to carry out its evaluation tests with varying durations.

References

- Asadi, A. (2015). Influence of rest interval between plyometric training session on functional performance test. *Physical Activity Review*, 3, 1-10.
- Bogdanis, G. C., Nevill, M. E., Boobis, L. H., Lakomy, H. K., & Nevill, A. M. (1995). Recovery of power output and muscle metabolism following 30s of maximal sprint cycling in man. *Journal of Physiology*, 482 (2), 467-480.
- Cheatham, M. E., Boobis, L. H., Brooks, S., & Williams, C. (1986). Human muscle metabolism during sprint running. *Journal of Applied Physiology*, 1985, 61 (1), 54-60.
- Hakkinen, K., Alen, M., & Komi, P. V. (1984). Neuromuscular anaerobic and aerobic performance characteristics of elite power athletes. *European Journal of Applied Physiology*, 53 (2), 97-105.

- Hilliard, C. (1991). Weight training and conditioning for walkers. *Modern Athlete and Coach*, 29, 2, 36-38.
- Hofman, N., Orié, J., Hoozemans, M. J., Foster, C., & de Koning, J. J. (2017). Wingate Test is a Strong Predictor of 1500m Performance in Elite Speed Skaters, *International Journal of Sports Physiology and Performance*, 2, 1-17.
- Horbacz, A., Majherová, M., & Perečinská, K. (2013). Posture and muscle imbalance in young tennis players. *Scientific Review of Physical Culture*, 3 (4), 33-38. Retrieved from <http://www.srpc.eu>
- Janot, J. M., Beltz, N. M., & Dalleck, L. D. (2015). Multiple Off-Ice Performance Variables Predict On-Ice Skating Performance in Male and Female Division III Ice Hockey Players. *Journal of Sports Science and Medicine*, 11; 14 (3), 522-9.
- Laird, R. H., 4th, Elmer, D. J., Barberio, M. D., Salom, L. P., Lee, K. A., & Pascoe, D. D. (2016). Evaluation of Performance Improvements After Either Resistance Training or Sprint Interval-Based Concurrent Training. *Journal of Strength and Conditioning Research*, 30 (11), 3057-3065.
- Larsen, K. B. (2003). Kenyan dominance in distance running. *Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology*, 136 (1), 161-170.
- Lortie, G., Simoneau, J. A., Boulay, M. R., & Bouchard, C. (1986). Muscle fibre type composition and enzyme activities in brothers and monozygotic twins, In: *Sport and Human Genetics*. Human Kinetics Publ, Champaign, USA.
- Maldonado, S., Mujika, I., & Padilla, S. (2002). Influence of body mass and height on the energy cost of running in highly trained middle-and long-distance runners. *International Journal of Sports Medicine*, 23 (4), 268-272.
- Milanović, Z., Pantelić, S., Sporiš, G., Moht, M., & Krustup, P. (2015). Health-related physical fitness in healthy untrained men: effects on VO₂ max, jump performance and flexibility of soccer and moderate-intensity continuous running, *PLOS ONE*, 10 (8), 1-14.
- Minahan, C., Chia, M., & Inbar, O. (2007). Does power indicate capacity? 30-s Wingate anaerobic test vs. maximal accumulated O₂ deficit. *International Journal of Sports Medicine*, 28 (10), 836-843.
- Pilis, K., Jelonek, J., Pilis, A., Michalski, C., Pilis, W., & Mizera, K. (2013). Sposób żywienia członków polskiej kadry narodowej w chodzie sportowym – krótkie doniesienie. *Medycyna Sportowa*, 1 (4) 29, 63-71.
- Pilis, W., Wojtyna, J., Langfort, J., Zając, A., Manowska, B., Chmura, J., & Zarzeczny, R. (1997). Relationships between sport results, somatic variables and anaerobic power in elite weightlifters. *Biology of Sport*, 14, 275-283.
- Popadic Gacesa, J. Z., Barak, O. F., & Grujic, N. G. (2009). Maximal anaerobic power test in athletes of different sport disciplines. *Journal of Strength and Conditioning Research*, 23 (3), 751-755.
- Reilly, T., Bangsbo, J., & Franks, A. (2000). Anthropometric and physiological predispositions for elite soccer. *Journal of Sports Science*, 18 (9), 669-683.
- Roczniok, R., Stanula, A., Gabryś, T., Szmatlan-Gabryś, U., Gołaś, A., & Stastny, P. (2016). Physical fitness and performance of polish ice-hockey players competing at different sports levels. *Journal of Human Kinetics*, 51 (1), 201-208.
- Skinner, J. S., O'Conner, J., Kohrt, W., & Hoffman, D. (1986). Aerobic and anaerobic characteristic of lightly-trained athletes from selected sports. 3rd Inter, Course on *Physiology and Biochemistry of Exercise and Training*, Athenes.

- Williams, C., & Nute, M. L. (1983). Some physiological demands of a half-marathon race on recreational runners. *British Journal of Sports Medicine, 17*, 152-161
- Zajac, A., Pilis, W., & Waszkiewicz, Z. (1999). The influence of strength training and age on anaerobic power. *Journal of Human Kinetics, Antropomotoryka, 21* (2), 103-144.

BACK PAIN CHARACTERISTICS IN PHYSICAL AND OFFICE WORKERS

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Abstract. *The aim of our study was to characterize back pain according to the occupation comprising physical and office work. Accordingly questionnaires from 100 physical workers (PW) and 100 office workers (OW) were collected. This dedicated questionnaire included 19 questions, of which 7 concerned demographic, work and stature features and 12 concerned back pain. Collected data showed that lower back pain was more common in PW but cervical pain in OW ($p < 0.001$). Most common aetiology of back pain was spinal osteoarthritis, sciatica and scoliosis but of different spread in two groups ($p < 0.001$).*

The history of back pain was most often above 5 years and there were significant differences in frequency, intensity and pain handling methods between groups ($p < 0.005$). Back pain prophylaxis was well acknowledged in both groups (85 % in OW, 91 % in PW). Regular physical activity was considered the main prophylaxis method (67 % in PW, 89 % in OW) and similarly incorporated in both groups ($p = 0.691$) however OW more often performed physical exercises ($p < 0.001$). Physical therapy was used in both groups (PW 100 %, OW 92 %, $p = 0.004$) but with variable efficacy according to responders. To conclude there were multiple differences between both groups in terms of the pain characteristic but with similar awareness and incorporated prophylaxis.

Keywords: *back pain, occupation, prophylaxis, therapy.*

Introduction

Low back and neck pain were the third leading cause of disability worldwide behind ischemic heart disease and cerebrovascular disease (GBP 2016 DALYs and HALE Collaborators, 2017). Musculoskeletal disorders are the biggest single cause of incapacity to work (Bevan et al., 2009). Mechanical stress from occupational activities such as heavy lifting and repetitive movements as well as strained posture are the main back pain risk factors however there may well be other important risk factors such as age, gender or length of employment, awareness of prevention techniques and treatment compliance.

This has led to the hypothesis that there are differences in back pain characteristics dependant on the type of work performed. Recognizing such differences may be helpful in developing appropriate strategy for prevention. Preventive techniques may reduce physical stress that can trigger symptoms and bad habits at work and promote or exaggerate the risk of back pain. Along with this there may be different targets for prevention according to the occupation. Physical workers (PW) and office workers (OW) may well differ in back pain characteristics and risk factors. Another reason for differences might be the level of awareness of risk factors and preventive techniques. Finally, there might be differences in assessment of pain and treatment efficacy as well as compliance with prevention recommendations. Identifying the differences might be helpful to undertake more specific treatment and preventive measures in both groups.

Therefore our study aim was to show differences in the back pain character in working population in regards to the type of occupation.

Methods and Materials

One hundred PW (22 women, 78 men) and 100 OW (62 women, 38 men) suffering from back pain were included in the study. They were all patients of SP ZOZ in Glubczyce. The Bioethics Committee of Public Higher Medical School in Opole has approved the protocol of the study (Approval No 309/216). Study was conducted in December 2016 and January 2017 with the use of the dedicated questionnaire that included 19 questions, of which 7 were concerned with demographics (gender, age, work, height, body mass). The Body Mass Index was calculated. Further multiple-choice questions concerned back pain were asked as listed below:

- localization of back pain
- diagnosed conditions related to back pain
- duration of back pain symptoms
- frequency of back pain
- intensity of pain with Visual Analog Scale (VAS)

- back pain symptoms management
- awareness of back pain prevention methods
- adherence to back pain prevention
- physical activity
- mode of physical activity – stretching or muscle enhancement
- prior physiotherapy
- effectiveness of physiotherapy.

Collected data was analysed with a chi-square statistics to demonstrate inter-groups differences. Statistically significance was accepted at $p < 0.05$.

Results

There were more men than women in analysed group, 84 women (22 PW and 62 OW) and 116 men (78 PW and 38 OW) ($p < 0.001$). PW were younger (42.33 ± 10.9 years vs. 46.69 ± 9.4 years – $p = 0.003$). There were significant differences between PW and OW in such somatic features as height (177.12 ± 6.63 cm; 171.15 ± 6.32 cm – $p < 0.001$) and BMI (24.74 ± 3.55 kg/m²; 25.75 ± 2.81 kg/ m² – $p = 0.025$) but there was no difference in body mass (77.33 ± 9.75 kg; 75.44 ± 9.08 kg – $p = 0.155$). More patients were living in urban areas than rural (126 vs. 74, $p = 0.017$). Most responders in both groups PW and OW had work experience longer than 15 years (54 % and 48 % accordingly, $p = 0.272$).

The localization of the back pain is showed in Figure 1. In PW group the most frequent localisation was the lumbar segment (66 %) whereas in OW in the cervical segment (51 %). The statistical analysis showed significant differences in pain localisation between groups ($p < 0.001$).

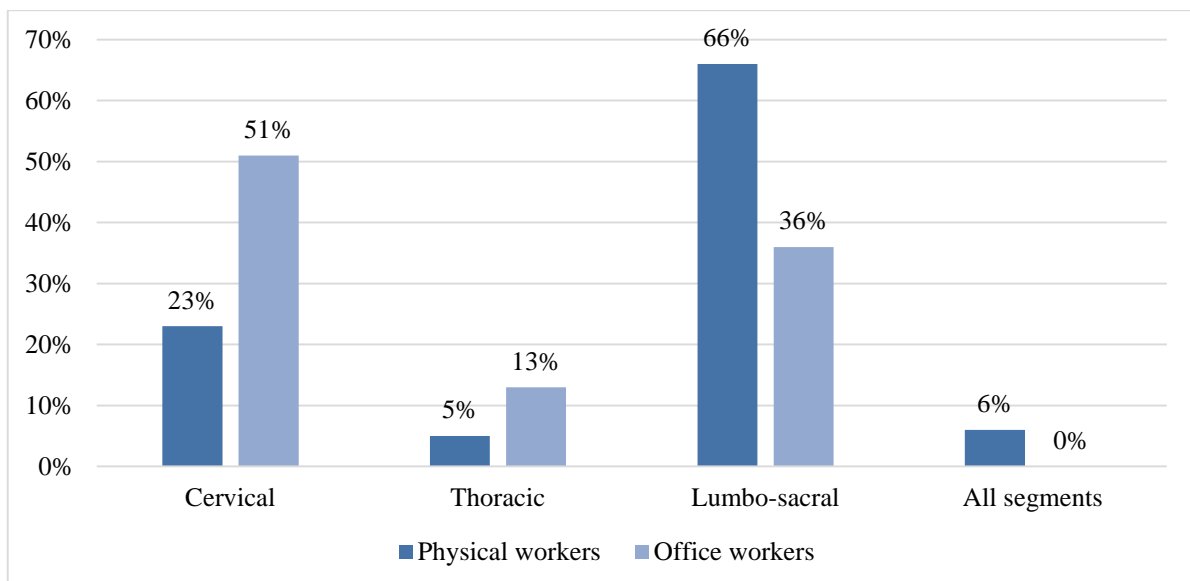


Figure 1. The pain localisation in the spine

The most common conditions diagnosed in responders were spinal osteoarthritis, sciatica and scoliosis but with different spread in the studied groups ($p < 0.001$) (Figure 2).

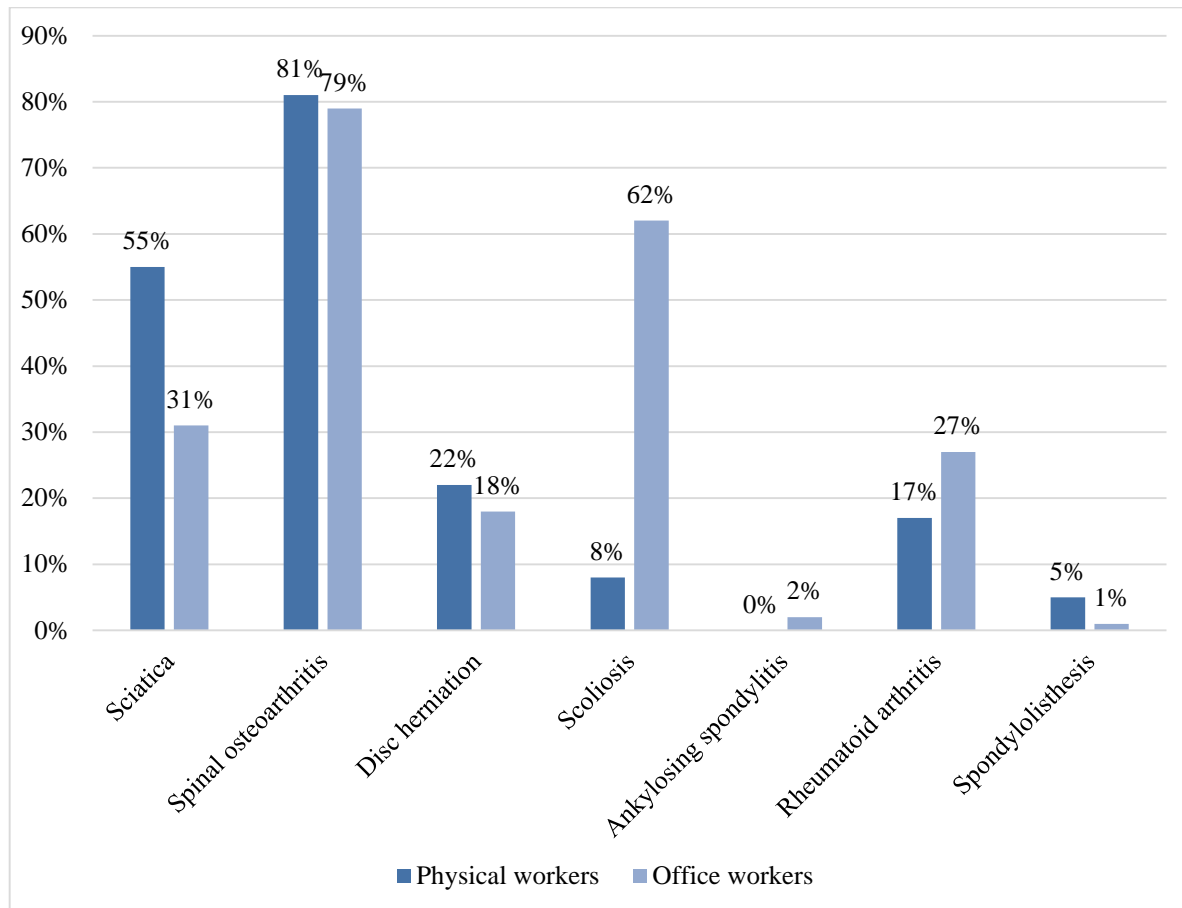


Figure 2. The back pain aetiology

In most responders' back pain lasted more than 5 years (67 % of PW, 59 % of OW) and variability of duration of back pain was similar in both groups ($p = 0.593$). Most PW suffered back pain less than once per month (61 % vs. 31 %) whereas most OW suffered frequent back pain 3-5 times per week (41 % vs. 13 %). Other occurrences, 1-2 per month and 1-2 per week were less common in both groups. Both groups differed significantly in terms of back pain frequency ($p < 0.001$). OW most frequently assessed pain intensity as 5 out of 10 in VAS (57 %) while PW as 9 out of 10 (46 %) (Figure 3). There were significant differences in pain intensity reported by PW and OW ($p < 0.001$). The most frequent back pain management reported by patients was pharmacotherapy, body positioning or manoeuvres to alleviate pain and physician consultation (Figure 4). There were significant differences between groups in back pain management ($p < 0.001$). At the same time the awareness of back pain prevention was similar in both groups (85 % in PW and 91 % in OW) ($p = 0.193$).

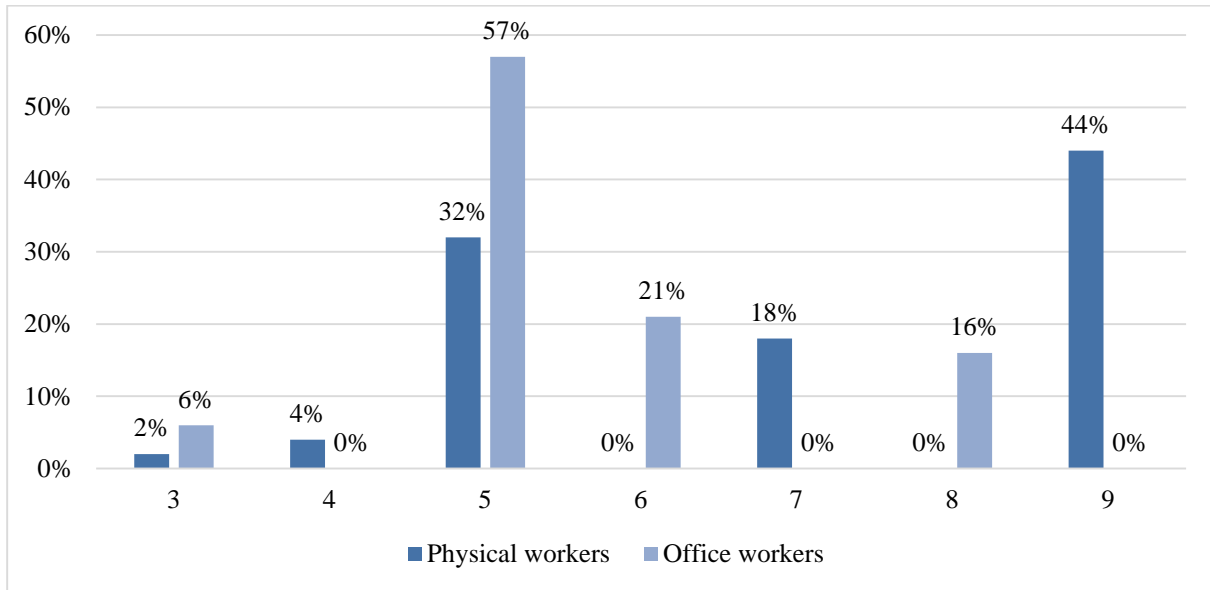


Figure 3. Pain intensity according to Visual Analog Scale (VAS)

The most frequent back pain management reported by patients was pharmacotherapy, body positioning or manoeuvres to alleviate pain and physician consultation (Figure 4). There were significant differences between groups in back pain management ($p < 0.001$). At the same time the awareness of back pain prevention was similar in both groups (85 % in PW and 91 % in OW) ($p = 0.193$).

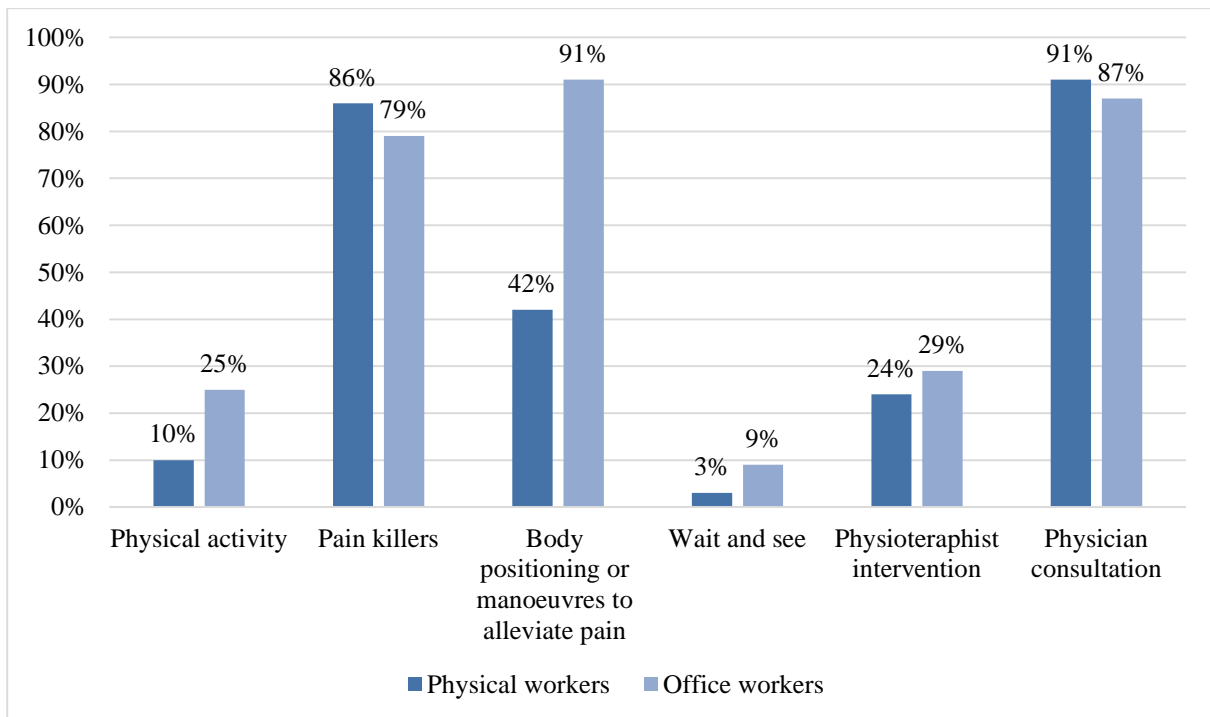


Figure 4. Back pain management reported by responders

The most recognized technique by PW were regular physical activity (67 %), evading long positioning in strained position (83 %) and correct body posture (79 %) whereas OW pointed regular physical activity (89 %), correct mattress (65 %) and evading long positioning in the strained position (51 %) (Figure 5).

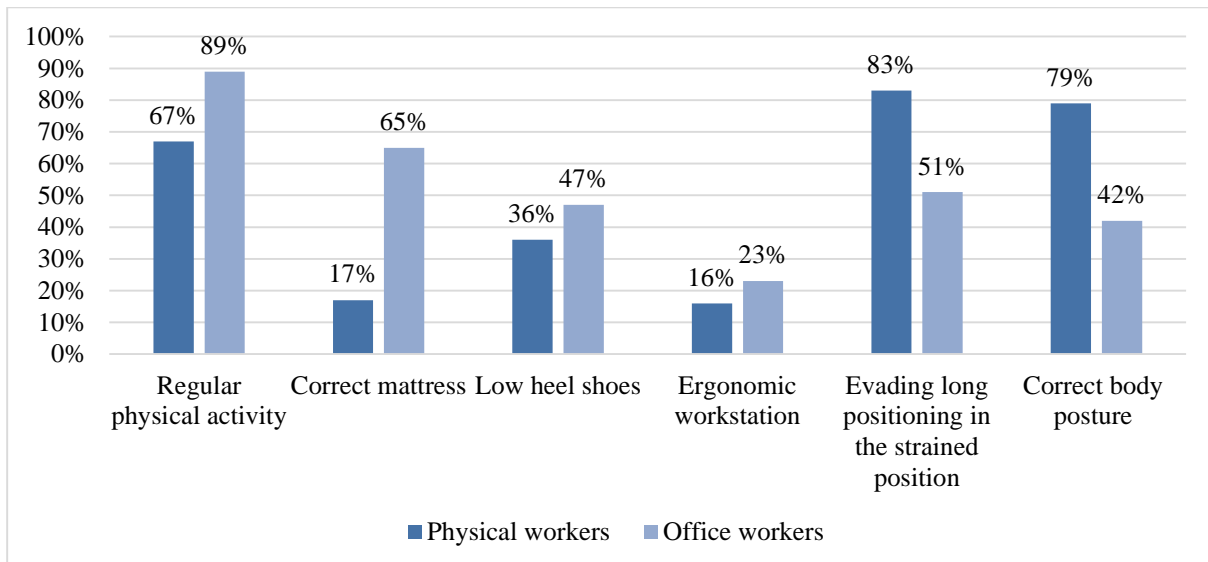


Figure 5. Preventive techniques recognised by responders

The preventive techniques reported by both groups differed statistically ($p < 0.001$). The adherence to back pain prevention was similar in both groups ($p = 0.691$). Preventive techniques were followed regularly by PW and OW in 6 % and 9 %, sporadically in 81 % and 77 % and were not followed in 6 % and 13 % respectively. The most common frequency of any mode of physical activity was less than once a month in PW group (61 %) and 3-5 times per week in OW group (41 %) (Figure 6). Both groups differed statistically in terms of the frequency of physical activity ($p < 0.001$). The most popular form of physical activity was muscle enhancement, 63 % in PW and 59 % in OW with no difference between groups ($p = 0.563$). All PW already had physiotherapy sessions in the past (100 %) but only 92 % of OW ($p = 0.004$).

PW and OW disagreed according to the evaluation of efficacy of physiotherapy sessions as complete recovery was reported accordingly by 13 % vs. 52 %, partial recovery by 46 % vs. 30 %, minor recovery by 28 % vs. 3 % and no recovery by 13 % vs. 7 % respectively ($p < 0.001$).

Discussion

There were important differences found in our study between PW and OW according to the kind of back pain reported. Most important seems to be the pain localization. PW mostly reported pain in lower back while OW in the neck. Job

status, working hours per day as well as standing hours per day were found the strongest risk factors influencing on lower back pain (LBP) (Mendelek et al., 2011) whereas sitting position is not associated with higher risk of LBP (Hartvigsen et al., 2000). Neck pain was similarly found more often in OW (Oha K et al., 2014). Higher risk of LBP in PW when compared to OW was also found in the prospective cohort study in Norway (Heuch et al., 2017). Probable explanation may be a different pattern of back strain in compared groups. PW are mostly exposed to dynamic strain while OW to static strain. The dynamic strain e.g. heavy workload, lifting, bending, twisting comprise structural changes in joints and spine and lumbar spine is the most exposed segment (Heneweer et al., 2011). Higher prevalence of sciatica in PW found in our study may well be the explained with higher exposition to the dynamic strain. The most frequent aetiology of sciatica is sciatic nerve root compression in spinal canal caused by disc herniation. The impact of dynamic strain is the highest in lower spine where sciatica nerve roots exit the spinal canal. There was no difference in disc herniation according to reported diagnoses however in the questionnaire the exact localization of disc herniation – cervical or lumbar - was not specified.

OW more often reported scoliosis and that could explain higher frequency of neck pain in this group. Neck pain is mostly related to chronic muscle strain caused by sustained body position at work with limited physical activity (Klussmann et al., 2008). The most frequent neck pain aetiology is overloaded musculoskeletal system and spinal muscle strain. Interestingly OW more frequently reported complete recovery after physiotherapy what may support the musculoskeletal aetiology of their symptoms. This condition is more prone to improve after physiotherapy than structural lesions of the spine and joints.

High frequency of scoliosis reported in OW is not supported by epidemiological studies as idiopathic scoliosis is found in up to 5 % of general population. The explanation might be unclear terminology and/or misunderstanding the diagnosis given to patients. However we are not able to compare to the frequency of scoliosis in our group to the general population. Our group consisted of patients already referred for treatment due to back pain.

Observed differences may well be biased by different characteristics of compared groups. PW were mostly men while OW were mostly woman. Woman are more prone to back pain than man regardless of the type of work performed (Ekman et al., 2000). PW were younger and had lower BMI. Sciatica was more frequent in man and scoliosis in woman. Slightly higher prevalence of sciatica in man was found in population based study in Tunisia (Younes et al., 2006) and most of published studies report higher prevalence of neck pain in woman (Fejer et al., 2016; Sarquis et al., 2016). To explain this fact one may consider different pattern of back strain in man and woman. Men are mostly exposed to dynamic injury while women to static strain. Heavy workload was found to be an important

risk factor for chronic lower back pain (Heuch et al., 2017). Type of work, gender as well as age are all independent risk factors influencing prevalence of back pain (Coggon et al., 2013). Apart from this there are non work-related factors influencing the prevalence of back pain for example physiological differences, such as different body size or body mass or endocrine functions, and differences in the willingness to report or seek medical care for pain or discomfort (Punnett & Bergqvist, 1997).

Higher BMI in OW suggest indirectly lower physical activity, which is a risk factor for musculoskeletal symptoms often coexisting with scoliosis. This seems to be contrary to reported knowledge regarding preventive techniques as well as usage of these techniques. OW more often reported the importance of regular physical activity as a preventive technique and declared more regular physical activity as well. At the same time OW rarely reported evading long positioning in strained position and correct body posture as a preventive technique. These risk factors play important role in prevention of neck pain which is mostly related to static strain and that was previously discussed in regards to pain localization.

PW more often reported the pain as severe and very severe while OW more often as moderate. Pain assessment is a subjective measure what makes the comparison difficult however one may try to explain this finding. Pain caused by direct neural injury what is observed in sciatica may be more severe than musculoskeletal pain. PW more often had sciatica diagnosed when compared to OW. The treatment of sciatica is often prolonged and complete recovery is more difficult to achieve what may explain the differences in assessment of treatment outcome. PW rarely reported complete recovery and more often reported lack of improvement.

Our patient questionnaire study was focused on pain characteristic in regards to job status and was performed in determined time span what resulted in several limitations. Differences found between groups are in line with specific risk factors related to job character. Interpretation was hindered due to imprecise questioning of disc herniation localization and type of physiotherapy methods employed in the treatment. Length and type of physiotherapy methods may influence the efficacy and therefore patients' assessment. Similar problem appears in most studies dealing with physiotherapy effectiveness apart from the subjective character of pain and efficacy assessment and lack of objective outcome measures.

The main conclusion arising from our results is the need of differentiation the treatment and preventive methods in regards to job character. Teaching proper body posture and preventive techniques at worksite should begin at very beginning to avoid inappropriate habits resulting in back strain. It is well recognized that risk of back pain increases with length of employment and structural changes in spine especially spinal osteoarthritis and disc herniation are irreversible. In the OW group it should be stressed out that proper workstation

alignment has essential role together with stretching exercises during office breaks to improve spine mobility and avoid back pain. It seems that in both groups stretching exercises should be preferred for back pain prevention. Awareness of the need of regular physical activity should be enhanced as it has positive effect not only on musculoskeletal system but also on cardio-vascular system. It has been found that walking or cycling to work lowers the risk of hospitalisation due to sciatica by 30 % (Shiri et al., 2017). Despite physical activity is every day routine in PW there is high risk of overload of musculoskeletal system due to unvarying character of activity. Lower back pain is particularly vulnerable what results in irreversible structural changes leading to disc herniation and sciatica.

New employees should be acquainted with the long-term health risk emerging from job characteristics related to worksite and appropriate preventive techniques should be acknowledged.

References

- Bevan, S., Quadrello, T., McGee, R., Mahdon, M., Vavrovsky, A., & Barham, L. (2009). *Fit for work? Musculoskeletal disorders in the European workforce. The Work Foundation*, Available from: <http://www.fitforworkeurope.eu/Website-Documents/Fit%20for%20Work%20pan-European%20report.pdf> .
- Coggon, D., Ntani, G., Palmer, K.T. et al. (2013). Disabling musculoskeletal pain in working populations: is it the job, the person, or the culture? *Pain*, *154*, 856-63.
- Ekman, A., Andersson, A., Hagberg, M., & Hjelm, E. W. (2000). Gender differences in musculoskeletal health of computer and mouse users in the Swedish workforce; *Occupational Medicine*. *50*, 608-13.
- Fejer R Ohm Kyvik K., & Hartvigsen, J. (2006). The prevalence of neck pain in the world population: a systematic critical review of the literature; *European Spine Journal*, *15*, 834–84.
- GBP 2016 DALYs and HALE Collaborators (2017). Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016; *Lancet*, *390*, 1260–1344.
- Hartvigsen, J., Leboeuf-Yde, C., Lings, S., & Corder, E. H. (2000). Is sitting-while-at-work associated with low back pain? A systematic, critical literature review; *Scandinavian Journal of Public Health*, *28* (3), 230-9
- Heneweer, H., Staes, F., Aufdemkampe, G., van Rijn, M., & Vanhees, L. (2011). Physical activity and low back pain: a systematic review of recent literature. *European Spine Journal*, *20*, 826–845.
- Heuch, I., Heuch, I., Hagen, K., & Zwart (2017). Physical activity level at work and risk of chronic low back pain: A follow-up in the Nord-Trøndelag Health Study. *PLoS One*, *10*, 12.
- Klussmann, A., Gebhardt, H., Liebers, F., & Rieger, M. A. (2008). Musculoskeletal symptoms of the upper extremities and the neck: a cross-sectional study on prevalence and symptom-predicting factors at visual display terminal (VDT) workstations, *BMC Musculoskeletal Disorders*, *27*, 96.

- Mendelek, F., Kheir, R. B., Caby, I., Thevenon, A., & Pelayo, P. (2011). On the quantitative relationships between individual/occupational risk factors and low back pain prevalence using nonparametric approaches, *Joint Bone Spine*, 78 (6), 619-24.
- Oha, K1., Animägi, L., Pääsuke, M., Coggon, D., & Merisalu, E. (2014). Individual and work-related risk factors for musculoskeletal pain: a cross-sectional study among Estonian computer users. *BMC Musculoskeletal Disorders*, 15, 181.
- Punnett, L., & Bergqvist, U. (1997). *Visual Display Unit Work and Upper Extremity Musculoskeletal Disorders: A Review of Epidemiological Findings*, (p. 16). Solna, Sweden. National Institute for Working Life (Arbetslivsinstitutet), Arbete och Hälsa
- Sarquis, L., Coggon, D., & Ntani, G. (2016). Classification of neck/shoulder pain in epidemiological research: a comparison of personal and occupational characteristics, disability and prognosis among 12,195 workers from 18 countries: *Pain*, 157, 1028–1036.
- Shiri, R., Euro, U., Heliövaara, M. et al. (2017). Lifestyle Risk Factors Increase the Risk of Hospitalization for Sciatica: Findings of Four Prospective Cohort Studies; *The American Journal of Medicine*, 130, 1408-1414.
- Younes, M., Béjia, I., Aguir, Z., Letaief, M., Hassen-Zrour, S., Touzi, M., & Bergaoui (2006). Prevalence and risk factors of disk-related sciatica in an urban population in Tunisia, *Joint Bone Spine*, 73, 538-42.

CHARACTER OF RELATIONSHIP BETWEEN SOMATIC COEFFICIENTS AND PHYSIOLOGICAL PARAMETERS THE 15-17 YEAR OLD ICE-HOCKEY PLAYERS

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Abstract. *The somatic structure in the significant degree determines the possibilities of applying definite tactical solutions, he can limit or stimulate unreeling the competitor individual technique. Somatic conditions can be the limiter of the motor preparation and coordination. The aim of investigations was qualification of dependence between coefficients of the somatic parameters and coefficients of aerobic and anaerobic efficiency. In investigations participated hockey players of National Team Poland in the age from 15 to 17 years. Essential dependences stepped out between the coefficients of aerobic and anaerobic efficiency, and the coefficients of the somatic conditions counted from the value of mass and the length of the body. The number of appointed dependences is higher in hockey players team U18 in the comparison with hockey players team U15.*

Keywords: *ice hockey, physiological parameters, somatic coefficients.*

Introduction

The somatic build of the ice hockey player, is considered one of the key factors conditioning the possibility of achieving high sports results in this discipline (Argeet et al., 1988; Quinney et al., 2008). Body length, and body mass are basic somatic factors of the ice hockey player, on the basis of which, comparative analyses are done on different sports levels (Allisse et al., 2017; Farlinger et al., 2007; Stanula et al., 2013). Competing, in ice hockey, which allows body play, requires a somatic build enabling competition against the opponent on equal terms. It is, thus, the fourth area, besides physical, technical, and tactical preparation, which cannot be omitted while evaluating the

competitor's sports perspectives. The somatic build determines, to a great extent, the possibilities of applying specific tactical solutions, it can either limit, or stimulate the development of a competitor's individual technique (Kutac & Sigmund, 2015). Of course, the somatic conditions cannot be the limiting factor of motoric, and coordination preparation. As in all sports disciplines, the right ratio between body length, body mass, and the tasks to be performed on the ice rink, determine start efficiency, and the prospects of a hockey player's professional development (Neary et al., 2003; Sherar et al., 2007). Numerous studies show relationships between physiological indexes, and the somatic build of the competitors in various sports disciplines (Chaouachi et al., 2009; Duncan et al., 2006). In ice hockey, both the aerobic, and the anaerobic capacity, are equally important in the motoric preparation of the athlete (Green et al., 2006; Vescovi et al., 2006). The changes in physiological indexes, are also related to the changes in the somatic build in the biological development period (Brtkova et al., 2014). Both, the training, and the natural biological development, are natural stimulants of the development of every young athlete, including the ice hockey player (Aitken & Jenkins, 1998; Gil et al., 2007a, 2007b; Gröger et al., 2001). The aim of this study, was to determine the nature of the relationship between the values of physiological aerobic, and anaerobic capacity indexes, and the somatic build indexes of the Polish National Team ice hockey players aged 14-17 years old.

Material and methods

The study group included Polish National Team ice hockey players aged 15-17 years old. The group of 15 year old hockey players (U-16) included 20 competitors. Body height: 177.33 ± 4.16 cm, body mass: 70.54 ± 7.6 kg. The group of 17 -year -olds (U-18) can be characterized as follows: body height: 179.48 ± 4.85 cm, body mass: 77.16 ± 9.27 kg.

The level of aerobic capacity was evaluated on the basis of a progressive test carried out by means of a cycloergometer Cyclus 2 (RGB, Germany), according to the following program: the three first levels in two minutes carried out with the power of 0.75, 1.5, 2.5 W/kg of body mass, the next levels: 1 minute with an increase in power by 0.5W/kg. With the aid of a K4b2 analyzer (Cosmed, Italy), the following values were registered by means of a breath-by-breath system: VO₂, VCO₂, VE, RF, and HR .

The Polar Team2 system (Polar OY Finland) was used for this purpose. Anthropometric measurements done according to the "Anthropometric standardization reference manual" (Lohman et al., 1988), constituted part 1 of the study. (Tab. 1) Aerobic capacity evaluation: the participant carried out the effort until refusal to go on. The first three effort levels, whose work time was 2 minutes,

were characterized by subsequent loads amounting to: 1.5, 2.25, and 3 W/kg, whereas the next ones were 1 minute long, and the increase in power was as follows: 3.5, 4, 4.5, and then by a further 0.5 W/kg of body mass of the participant.

During the effort trial, parameters such as: maximum oxygen usage- VO_{2max} (l/min), maximum ventilation - VE_{max} (l/min), and heart systole frequency - HR (bp/min). Anaerobic capacity evaluation. The participant carried out the Wingate test. The trial consisted in carrying out a 30-second maximum effort, on a cycloergometer with an 8 % (U-16), and a 9 % (U-18) body mass load, on a Cyclus-2 cycle ergometer. Once the rotation frequency of 100 rot./min. was attained, the load turned on. The registered parameters were: the maximum power - P_{max} (W), the total work - W_{tot} (J), and the power fall index (IF). The evaluation of anaerobic capacity was carried out using the cycloergometric test (Roczniok et al., 2016) on a Cylus 2 Ergometer (RBG, Germany), registering power, work, and the tiredness coefficient, expressed by the amount of a decrease in power during effort.

Table 1 Indicators of the somatic structure

	Index	Formula
The height- weight index	BMI (Body Mass Index)	$BMI = \frac{weight(kg)}{height^2(m)}$
	Rohrer's index	$index\ Rohrera = \frac{weight(g)}{height(cm)}$
	The slenderness index	$UKP = \frac{height(cm)}{\sqrt[3]{weight(kg)}}$
Body proportion, and body build indexes	Manouvrier's index	$= \frac{\text{the subischial length of the lower limb}}{\text{The height while sitting down}} \times 100$
	The pelvis- shoulder index	$\text{The pelvis – shoulder index} = \frac{ic - ic}{a - a} \times 100$ ic-ic- pelvis width a-a -shoulder broadness
	Chest index	$\text{Chest index} = \frac{xi - ths}{thl - thl} \times 100$ xi-ths- chest depth thl-thl- chest width

The analysis of the results of the study was carried out by means of the Statistica 10.0 program. In all the tests, a relevance level equal to 5 % was adopted. In order to examine the existence of differences in the groups of competitors aged 15, 16, and 17, the one factor analysis of variance was applied. In the case of the examples, where the difference turned out to be statistically

significant, a *post-hoc* analysis was carried out to determine, between which age groups there was a difference.

The analyses of the relationship among the somatic build parameters, and the aerobic, and anaerobic capacity parameters, as well as between somatic build indexes, and the aerobic, and anaerobic capacity parameters, were carried out by calculating, and testing the relevance of the correlation coefficient. The correlation analyses were carried out both, for all the groups combined, and for each of the groups separately.

Results

Tables 2 contain the values of somatic indexes determined in the studied groups of hockey players, of the U15, and, U17 teams. The BMI values according to the WHO, are as follows (WHO 1995): underweight < 18.5; proper weight 18,5-24,9; overweight ≥ 25 ; obesity ≥ 30 . Rohrer's index acc. to Kowalewska (Malinowski et al., 2000): leptosomic type $x-1.12$; athletic type 1.13-1.34; pyknic type $1.35-x$. The slenderness index acc. to Piechaczek et al. (1996): strong build $x-41.54$; average build 41.55-44.87; slender build 44.88- x .

Table 2 The weight-height and body proportion indexes in 15-, and 17-year old hockey players

Statistics	Weight-height indexes			Body proportion indexes		
	BMI	Rohrer's index	Slenderness index	Manouvrier's index	Pelvis-shoulder index	Chest index
Team U16						
x	22,41	1,27	43,01	92,91	77,5	70,49
± SD	2,12	0,12	1,36	4,17	8,52	7,2
Max	22,35	1,21	45,42	103,04	92,27	82
Min	26,2	1,52	40,34	86,13	65,43	58,62
Team U18						
x	23,92	1,33	42,26	93,39	77,4	68,4
± SD	2,36	0,13	1,44	6,67	6,05	6,07
Max	28,05	1,55	45,8	110,84	86,11	78,18
Min	19,05	1,04	40,11	85,65	67,9	60

The classification acc. to (Jagiello et al., 2011; Tomaszewskiet et al., 2011) was applied to analyze the values in tables 2, Manouvrier's index classifies the lower limbs as: very short: $x-74.9$; short 75.0-79.9; below average 80.0-84.9; average 85.0-89.9; above average 90.0-94.5; long 95.0-99.9; very long 100.0- x . The pelvis-shoulder index acc. to Wanke classifies the pelvis as: narrow $x-71.5$;

average: 71.6-76.1, and wide 76.2-x. The chest index acc. to Wanke, classifies the chest as: flat: $x-69.7$; average: 69.8-75.5, and deep: 75.6-x

The characteristics of body build, and body proportion indexes, calculated on the basis of anthropometric measurements of the ice hockey players, belonging to three age groups, are presented in table 2. In tables 3, relationships between aerobic, and anaerobic capacity indexes, and the weight-height indexes, in all competitor age groups were presented. In 15 year old competitors, there are relationships between the BMI, and the anaerobic capacity indexes (P_{max} and IF).

In the group of 17 year old hockey players, there are relationships among the BMI, VO_{2max} , and W_{tot} . The statistically significant differences among the BMI values, and all (except for the HR_{max}) aerobic, and anaerobic capacity indexes, were demonstrated in the study group, which was not divided according to age. The Rohrer index, calculated in the 15-, and 17 year old competitors, indicates the athletic body build type (Tomaszewski et al., 2011).

The relationships among the aforementioned weight-height index, and the physiological indexes, in the case, when, the hockey players were not divided into groups, and in the group of the 17 year old competitors, occurred between the same parameters i.e. the Rohrer index, VO_{2max} , and W_{tot} . According to the classification by Piechaczek et al. (1996), the average build type is characteristic of the study participants. Among the competitors, relations were demonstrated among the slenderness index, and VO_{2max} , and all the anaerobic capacity parameters. Negative correlations in the groups of 15-, and 17 year olds, occurred among the same parameters, as in the case of the BMI. In the group of 15 year old hockey players, relationships were noted among the slenderness index, and the P_{max} , as well as the IF, whereas in the group of the 17 year old competitors, relationships among the slenderness index, VO_{2max} and W_{tot} were observed.

The results of the correlation analysis, without the division into groups, and taking the age of the hockey players into consideration, among the body build proportion indexes, and the aerobic capacity indexes, are presented in tables 4. The values of the Manouvrier's index indicate, that the above average length of the lower limbs, is a characteristic among the hockey players. In the group of the 17 year old hockey players, there is also the statistically significant relationship between the Manouvrier's index, and the HR_{max} . According to the classification devised by Wanke, a characteristic feature of the 15-, and 17 year old hockey players, is a wide pelvis.

In all the groups without division, the pelvis- shoulder index correlates with the W_{tot} index. According to the classification devised by Wanke, a characteristic feature of the 15-, and 17 year old hockey players, is a wide pelvis. In all the groups without division, the pelvis- shoulder index correlates with the W_{tot} index. In 15 year old competitors, there was a relationship among the pelvis shoulder index, and the VO_{2max} , and W_{tot} indexes. In 17 year old hockey players, a

relationship was noted between the pelvis -shoulder index, and the HR_{max}. The values of the chest index, demonstrated that a flat chest was characteristic of 17 year old hockey players, whereas, an average chest was characteristic of 15 year old ones (acc. to Wanke) (Jagiello et al., 2011).

Table 3 The correlation coefficient values, and the level of statistical significance (p<0.05) of the relationship among the weight-height and body proportion indexes and aerobic (1) and, anaerobic (2), capacity of the combined U-15, and U-17 groups.

Physiological parameters	Weight-height indexes			Body proportion indexes		
	BMI	Rohrer's index	Slenderness index	Manouvrier's index	Pelvis-shoulder index	Chest index
VO2max (l/min)	0,3787	0,3855	-0,3062	-0,0235	0,1923	0,1133
	p=,007	p=,006	p=,032	p=,873	p=,186	p=,438
1 VEmax (l/min)	0,3564	0,241	-0,2297	0,0737	0,2798	0,1046
	p=,012	p=,095	p=,112	p=,615	p=,052	p=,475
HR max (ud/min)	0,0464	0,1377	-0,0131	0,085	0,0248	0,1349
	p=,752	p=,345	p=,929	p=,561	p=,866	p=,355
Pmax (W)	0,5855	0,2527	-0,4722	0,083	-0,0123	-0,0776
	p=,000	p=,080	p=,001	p=,571	p=,933	p=,596
2 Wtot (J)	0,5064	0,4728	-0,3937	-0,1536	0,3557	0,143
	p=,000	p=,001	p=,005	p=,292	p=,012	p=,327
IF (W/s)	0,5728	0,189	-0,5024	-0,0456	-0,1003	-0,3128
	p=,000	p=,193	p=,000	p=,756	p=,493	p=,029

Table 4 The correlation coefficient values, and the level of statistical significance of the relationship among the weight-height indexes, and the aerobic (1), and anaerobic (2), p<0.05 capacity of the U-15 and U18 groups

Physiological parameters	Weight-height indexes			Body proportion indexes		
	BMI	Rohrer's index	Slenderness index	BMI	Rohrer's index	Slenderness index
	Team U16			Team U18		
VO2max (l/min)	-0,274	0,0293	0,2609	0,8518	0,7948	-0,7908
	p=,242	p=,902	p=,267	p=,000	p=,001	p=,001
1 VEmax (l/min)	0,2813	0,2261	-0,1856	0,3844	0,2487	-0,2123
	p=,230	p=,338	p=,433	p=,195	p=,413	p=,486
HR max (ud/min)	-0,0304	0,2655	0,0571	0,1655	0,0192	-0,0024
	p=,899	p=,258	p=,811	p=,589	p=,950	p=,994
Pmax (W)	0,697	-0,0326	-0,5863	0,3546	0,3411	-0,3499
	p=,001	p=,891	p=,007	p=,235	p=,254	p=,241
2 Wtot (J)	-0,1275	0,1235	0,1001	0,8357	0,7476	-0,7129
	p=,592	p=,604	p=,674	p=,000	p=,003	p=,006
IF (W/s)	0,6328	-0,1654	-0,5957	0,4198	0,3502	-0,3656
	p=,003	p=,486	p=,006	p=,153	p=,241	p=,219

Table 5 The correlation coefficient values, and the degree of statistical significance of the relationship among the somatic coefficients, and the aerobic (1), and anaerobic (2) capacity indexes, $p < 0.05$, in the U15, and U 17 groups

Physiological parameters	Pelvis-shoulder index			Pelvis-shoulder index			
	Manouvrier's index	Chest index	Manouvrier's index	Chest index	Manouvrier's index	Chest index	
	Team U16			Team U18			
1	VO ₂ max (l/min)	-0,1376 p=,563	0,5037 p=,024	0,3298 p=,156	-0,1913 p=,531	-0,1016 p=,741	0,4056 p=,169
	VE _{max} (l/min)	0,3182 p=,172	0,303 p=,194	0,3952 p=,085	-0,213 p=,485	0,0665 p=,829	-0,0262 p=,932
	HR _{max} (ud/min)	-0,0791 p=,740	0,3717 p=,107	0,5442 p=,013	0,5892 p=,034	-0,1684 p=,582	0,2298 p=,450
	P _{max} (W)	0,1978 p=,403	-0,2012 p=,395	-0,1951 p=,410	-0,1285 p=,676	-0,4246 p=,148	0,3893 p=,189
	W _{tot} (J)	-0,3794 p=,099	0,5067 p=,023	0,1914 p=,419	-0,1424 p=,643	-0,0503 p=,870	0,2823 p=,350
	IF (W/s)	0,138 p=,562	-0,2547 p=,279	-0,5174 p=,019	-0,305 p=,311	-0,4921 p=,088	0,1492 p=,627

Discussion

The results of the studies demonstrated the existence of numerous relationships among body build indexes, and physiological indexes in 15-17 year old hockey players. In the literature of the subject, we find information, that the musculature component can have a significant impact upon the degree of the energy changes and the effective workload value (Angyan et al., 200; Tavinoet et al., 1995). In 15 year old competitors, there are no relationships among the aerobic capacity indexes, and the somatic build ones. The above- mentioned relationships are visible in the groups of hockey players aged 16, and 17 years old. The body mass, and the weight-height indicators in 16, and 17 year old competitors, clearly correlate with maximum oxygen usage (VO_{2max} l/min) The above parameters, and somatic indexes, determine the massiveness of the silhouette, and the degree of muscularity. On the basis of the examination conducted by Janusz & Jarosinska (1981), the participants of which were teenagers from Wroclaw, the total consumption of oxygen (VO_{2max} l/min) was significantly higher among muscular boys, than among those representing the fatty, or the linear body build type. According to Janusz & Jarosinska (1981), the muscular individuals have a greater aptitude for physical effort. In the group of 15 year old hockey players, correlations can be observed among the somatic build parameters, and indexes (body mass, weight-height indexes, the BMI, and the slenderness index, the content of active tissue), and the anaerobic capacity indexes, such as maximum power (P_{max}) and the index of the fall in power (IF). Among the 16 year old

competitors, there also are relationships among the above parameters, and somatic indexes, and all the studied anaerobic capacity indexes (P_{max} , W_{tot} and IF). In the group of the 17 year old hockey players, there are relationships among the body mass, all the weight- height indexes, the content of the active tissue, and the absolute value of total work (W_{tot}). Similar relationships relating to body build parameters, and indexes, and the physiological indexes were demonstrated by Byzdra et al. (2015) and Luszczuk et al. (2009) in their studies. In 11 year old football players (boys), a correlation was observed among the body mass, the BMI, and the maximum power (P_{max}), and the total work value (W_{tot}). In another study, Karnia et al. (2010), the participants were tennis players aged 15-18. Significant correlations were observed among the anaerobic capacity indexes, and body mass, and its components, among the youngest participants. According to the authors, 15 year old tennis players have the poorest technical, and tactical skills, which can be compensated by a proper body composition, and a high level of anaerobic capacity. It was also observed, that a large body mass may influence the increase in the value of the index of the fall in power. Burdukiewicz & Janusz (1995) in their studies conducted on the children, and teenagers attending Wroclaw schools, showed that there were significant relationships between mesomorphy, and the value of the work performed. The components of mesomorphy are reflected in the development of the musculature, and in the massiveness of the skeleton, and, as mentioned above, in hockey players, the correlations were demonstrated to concern the parameters, and somatic indexes, which prove the musculature, and the massiveness of the silhouette. In many studies, people competing in various sports disciplines are assigned specific kinds of somatotype (Garay et al., 1974; Leake & Carter, 1991; Farnosi I., 1980; Baxter-Jones, 1995). However, there are not many studies where the question of the relationship between anthropometric indexes, and physiological traits is discussed.

Conclusions

1. There are statistically significant relationships among selected physiological aerobic, and anaerobic capacity indexes in the groups of 15-, and 17 year old hockey players, and the body build indexes, calculated from the value of the mass, and length of the body. Most often, there is a statistically significant relationship among VO_2max , and W_{tot} , and the somatic indicators. In the group of older hockey players (U18), the number of the determined relationships is higher as to all the indexes, compared to the U15 group.
2. The somatic index value, indicates the athletic body build type of the hockey players. This build type demonstrates relationships among aerobic and

anaerobic capacity in the U 18 group of hockey players. This relationship was not observed during the earlier stages of training.

3. The body build proportions demonstrate, that the hockey players are a group with long lower limbs, wide pelvises, and flat chests. In all groups, without the division into age groups, the pelvis-shoulder index correlates with the W_{tot} . In the U15 player group, a relationship was noted among the pelvis-shoulder index, the VO_{2max} , and W_{tot} . In 17 year old hockey players, a relationship was noted between the pelvis-shoulder index, and the HR_{max}

References

- Agre, J., Casal, D., Leon, A., McNally, C., Baxter, T., & Serfass, R. (1988). Professional ice hockey players: physiologic, anthropometric, and musculoskeletal characteristics. *Arch Phys Med Rehabil.*, Vol. 69 (3), 188-92.
- Aitken, D., & Jenkins, D. (1998). Anthropometric-based selection and sprint kayak training in children. *J Sports Sci*, Vol. 16 (6), 539-543.
- Allisse, M., Sercia, P., Comtois, A., & Leone, M. (2017). Morphological, Physiological and Skating Performance Profiles of Male Age-Group Elite Ice Hockey Players. *Journal of Human Kinetics*, Vol. 1, 87-97
- Angyan, L., Teczely, T., & Zalay, Z. (2003). Relationship of anthropometrical, physiological and motor attributes to sport-specific skills. *Acta Physiologica Hungarica*, Vol. 90 (3), 225-231
- Baxter-Jones, A., Helms, P., & Maffulli, N. (1995). Growth and development of male gymnasts, swimmers, soccer and tennis players: a longitudinal study. *Ann Hum Biol.*, Vol. 5, 381-394.
- Brtkova, M., Bakalar, P., Matus, I., Hancova, M., & Rimarova, K. (2014). Body composition of undergraduates – comparison of four different measurement methods. *Physical Activity Review*, Vol. 2, 38-44.
- Burdukiewicz, A., & Janusz, A. (1995). Physical capacity and fitness of children and youths as related to their somatic development. *Biology of Sport*, Vol. 12 (3), 175-188.
- Byzdra, K., Jacyno, O., Mikołajczyk, J., Piątek, M., Kamrowska-Nowak, M., & Stepniak R. (2015). The level of the selected motor skills and components of body composition in children football training. *Journal of Education, Health and Sport*, Vol.5 (12), 345-376.
- Chaouachi, A., Brughelli, M., Levin, G., Boudhina, N., Cronin, J., & Chamari, K. (2009). Anthropometric, physiological and performance characteristics of elite team-handball players. *J Sports Sci*, Vol. 27 (2), 151-157.
- Duncan, M., Woodfield, L., & al-Nakeeb, Y. (2006). Anthropometric and physiological characteristics of junior elite volleyball players. *Br J Sports Med*, Vol. 40 (7), 649-651.
- Farlinger, C., Kruisselbrink, L., & Fowles J. (2007). Relationships to skating performance in competitive hockey players. *Journal of Strength and Conditioning Research*, Vol. 21, 915-922.
- Farmosi, I. (1980). Body composition, somatotype and some motor performance of judoists. *J. Sports Med.*, Vol. 20, 431-434.
- Garay, A., Levine, L., & Carter, J. (1974). *Genetic and Anthropological studies of Olympic Athletes*, Academic Press, New York-San Francisco-London

- Gil, S., Ruiz, F., Irazusta, A., & Irazusta, J. (2007). Selection of young soccer players in terms of anthropometric and physiological factors. *J Sports Med Phys Fitness*, Vol. 47 (1), 25-32.
- Green, M., Pivarnik, J., Carrier, D., & Womack, J. (2006). Relationship between physiological profiles and on-ice performance of national collegiate athletic association Division I hockey team. *Journal of Strength and Conditioning Research*, Vol. 20 (1), 43-46.
- Gröger, A., Oetl, G., & Tusker, F. (2001). Anthropometry and muscle force measurement of German male national junior hockey players]. *Sportverletz Sportschaden*, Vol.15 (4), 87-91.
- Janusz, A., & Jarosinska, A. (1981). Relations between the physical fitness and the build of Wrocław children in the century of the puberty (Związki między sprawnością fizyczną a budową ciała dzieci wrocławskich w wieku pokwitania.) *Materiały I Prace Antropologiczne*, Vol. 100, 75-92. (in polish press)
- Karnia, M., Garsztka, T., Rynkiewicz, M., Rynkiewicz, T., Zurek, P., Łuszczuk, M., Sledziwska, E., & Ziemann E. (2010). Physical Performance, Body Composition and Body Balance in Relation to National Ranking Positions in Young Polish Tennis Players. *Baltic Journal of Health and Physical Activity*, Vol. 2 (2), 113-123
- Kutac, P., & Sigmund, M. (2015). A Comparison of Somatic Variables of Elite Ice Hockey Players from the Czech ELH and Russian KHL. *J Hum Kinet.*, Vol. 45, 187-195.
- Leake, C., & Carter, J. (1991). Comparison of body composition and somatotype of trained female triathletes. *J Sport Sci.*, Vol. 9 (2),125-135.
- Łuszczuk, M., Laskowski, R., Ziemann, E., Grzywacz, T., & Szczesna-Kaczmarek, A. (2009). Anaerobic Power and Dependence on Chosen Anthropometric Parameters in Young Handball Players. *Baltic Journal of Health and Physical Activity*, Vol. 1 (1), 33-41
- Neary, J., Wenger, H., & Botterill C. (2003). The integration of physiological development programs on the acquisition of power in elite ice-hockey players. *Skating into the future: Hockey in the Millenium*. March 15th – 17th, 2003. New Brunswick
- Piechaczek, H., Lewandowska, J., & Orlicz, B. (1996). Changes in body composition among academic youth at Warsaw Technical University during 35 years (Zmiany budowy ciała młodzieży akademickiej Politechniki Warszawskiej w okresie 35 lat). *Wychowanie Fizyczne i Sport*, Vol. 3, 3-14 (in polish)
- Quinney, H., Dewart, R., Game, A., Snydmiller, G., Warburton, D., & Bell, G. (2008). A 26 year physiological description of a National Hockey League team. *Appl Physiol Nutr Metab.*, Vol. 33 (4),753-60.
- Roczniok, R., Stanula, A., Gabryś, T., Szmatlan-Gabryś, U., Gołaś, A., & Stastny, P. (2016). Physical fitness and performance of polish ice-hockey players competing at different sports levels. *Journal of Human Kinetics*, Vol. 2, 201-208
- Sherar, L., Baxter-Jones, A., Faulkner, R., & Russell, K. (2007). Do physical maturity and birth date predict talent in male youth ice hockey players? *Journal of Sports Sciences*, Vol. 25, 879-886.
- Stanula, A., Roczniok, R., Gabryś, T., Szmatlan-Gabryś, U., Maszczyk, A., & Pietraszewski, P. (2013). Relations between BMI, body mass and height, and sports competence among participants of the 2010 Winter Olympic Games: does sport metabolic demand differentiate? *Perceptual and Motor Skills*, Vol. 117 (3), 837–854.
- Tavino, L., Bowers, C., & Archer, C. (1995). Effects of basketball on aerobic capacity, anaerobic capacity, and body composition of male college players. *J Strength Cond Res*; 9 (2), 75–77

- Tomaszewski, P., Gajewski, J., & Lewandowska, J. (2011). Somatic Profile of Competitive Sport Climbers *Journal of Human Kinetics, Vol 29*, 107-113
- Vescovi, J., Murray, T., & VanHeest, J. (2006). Positional performance profiling of elite ice hockey players. *Int. Journal of Sports Physiology and Performance, Vol. 1*, 84-89.
- Jagiello, W., Kalina, R., & Jagiello, M. (2011). Differentiation of the Body Composition in the Polish National Team Pentathletes. *Baltic Journal of Health and Physical Activity, Vol. 3* (2), 105-111
- World Health Organization (1995). Physical status: the use and interpretation of anthropometry. *Report of a WHO Expert Committee. Technical Report Series No. 854*. Geneva.

DARBA VIDES RISKI SOCIĀLĀ DARBA SPECIĀLISTIEM

Risks of Work Environment for Social Work Specialists

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Abstract. *The article discusses research about the risks of work environment of social work specialists.*

In order institution wants to provide high quality service, it is important that staff maintain their mental and physical health in the long term. Daily work is physically hard because is associated with the movement of clients, long working hours, psychological load, daily inadequate socio-economic assessment and all this affects employee's safety and health.

Social Care Department lecturers from P. Stradins Medical College of the University of Latvia have carried out the study about the risks of work environment for social work specialists in social care and social rehabilitation institutions in order to identify the more common risks of work environment.

The aim of the study was to ascertain the views of social work specialists about the risks of work environment in order to identify common risks of work environment in institutions of social care and rehabilitation. In implementation of the study were involved students from the Social Care Department as well as several social care and social rehabilitation institutions in Latvia. In realization of the study were utilized a couple of research methods - analysis of literature, guidelines, laws and regulations, and quantitative research method with the research instrument – questionnaire. The results of the study suggest that there are several risks of the work environment but as the main ones, after the analysis of staffs' opinion, are psychological and ergonomic.

Keywords: *risks of work environment, social work specialists.*

Ievads

Introduction

Balstoties uz arodslimību analīzi Latvijā, periodā no 2012.-2016. (Centrālā statistikas pārvaldes ziņojums, 2016) un Valsts darba inspekcijas datiem par darba vides riska faktoriem, var secināt, ka izvēlētā tēma ir aktuāla, jo arodslimību un

nelaimes gadījumu skaits darbā ir ar augošu tendenci (Valsts Darba inspekcijas statistikas datu pārskats, 2016).

Arodveselības riski ir vieni no galvenajiem veselības riska faktoriem Eiropas reģionā, tādēļ izvēlētā pētījuma tēma ir aktuāla un nozīmīga, kuru ir nepieciešams aktualizēt. Latvijā pētījumi par darba vides riskiem ir veikti, bet galvenokārt akcentēta veselības aprūpe.

Darba aizsardzības galvenais uzdevums ir nodarbināto drošības un veselības nodrošināšana darbā. Preventīvajos pasākumos tiek izmantoti tiesiskie, saimnieciskie, sociālie, tehniskie un organizatoriskie pamatprincipi ar mērķi izveidot drošu un veselībai nekaitīgu darba vidi, kā arī novērst nelaimes gadījumus darbā un arodslimības.

Vadoties pēc Darba vides risku novērtēšanas vadlīnijām (2003.), darba aizsardzības vispārīgie principi ietver, ka darba devējam ir pienākums organizēt darba aizsardzības sistēmu, kurā ietilpst:

- 1) darba vides iekšējā uzraudzība, tai skaitā darba vides riska novērtēšana;
- 2) darba aizsardzības organizatoriskās struktūras izveidošana;
- 3) konsultēšanās ar nodarbinātajiem, lai viņus iesaistītu darba aizsardzības uzlabošanā.

Novērtējot darba vides risku, darba devējs ņem vērā, ka risku nodarbināto drošībai un veselībai galvenokārt var radīt:

- 1) darba vietu izvietojums un iekārtojums;
- 2) darba aprīkojuma izvēle un lietošana;
- 3) fizikālo, ķīmisko, psiholoģisko, bioloģisko, fizioloģisko un citu darba vides faktoru iedarbība;
- 4) darba un ražošanas metožu izvēle un lietošana, kā arī darba gaitas un darba laika organizācija;
- 5) nepietiekama nodarbināto profesionālā sagatavotība un instruēšana, arī darba aizsardzības jomā.

Darba vides riska faktori ir sastopami visās tautsaimniecības nozarēs un var ietekmēt lielu skaitu nodarbināto.

Darba vidi nav iespējams uzturēt pilnīgi bez riska faktoru ietekmes, tāpēc to samazināšana un kontrole ir būtiska, bet preventīvo pasākumu izvēle un to veikšana ir izvērtējama, ņemot vērā darba vides riska lielumu, uzņēmuma finansiālās iespējas un attiecīgo pasākumu piemērotību attiecīgā uzņēmuma / iestādes darbības specifikai.

Pilnvērtīga kontrole un riska faktoru samazināšana līdz pieļaujamiem līmeņiem ir iespējama tikai tad, ja iesaistītās personas ir informētas par darba vides riska faktoru raksturu un spēju prognozēt to iespējamās sekas. Strādājot sociālās aprūpes un rehabilitācijas institūcijā, sociālā darba speciālisti ir pakļauti vairākiem darba vides riska faktoriem:

- ķīmiskās vielas (piemēram, sintētiskie mazgāšanas līdzekļi);

- fizikālie faktori (piemēram, troksnis, mikroklimats, apgaismojums);
- putekļi (piemēram, drēbju, ādas vai matu, organiskas izcelsmes putekļi);
- bioloģiskie faktori (piemēram, ērcu encefalīta izraisītāji, vīrusa hepatīta B un C izraisītāji, HIV/ AIDS);
- psihosociālie faktori (piemēram, laika trūkums, virsstundu darbs, darbs naktīs, sliktas attiecības ar vadību, kolēģiem, konflikti, darbs ar klientiem un klientu radniekiem, paaugstināta atbildības sajūta, stress);
- Traumatisma riska faktori (piemēram, ratiņkrēslu un pacēlāju lietošana, paklupšana, slidenas un nelīdzenas grīdas segumi, applaucēšanās, elektriskās instalācijas un ierīces, nepietiekama nodarbinātā personāla sagatavotība un atbilstība veicamajam darbam) (Darba vides risku novērtēšanas vadlīnijas, 2003).

Lai sociālās aprūpes un sociālās rehabilitācijas institūcija sniegtu kvalitatīvu pakalpojumu ir svarīgi, lai darbinieks saglabātu savu psihisko un fizisko veselības stāvokli ilgtermiņā. Ikdienas darbs ir fiziski smags, jo saistīts ar klientu pārvietošanu, garām darba stundām, psiholoģisko slodzi un neatbilstošu sociāli ekonomisko novērtējumu ikdienā, tas ietekmē darbinieka drošību un veselību.

Latvijas Universitātes P. Stradiņa medicīnas koledžas Sociālās aprūpes katedras lektori veica pētījumu par darba vides riskiem sociālā darba speciālistiem sociālās aprūpes un sociālās rehabilitācijas institūcijās, lai identificētu biežāk sastopamos darba vides riskus.

Pētījuma mērķis bija noskaidrot sociālā darba speciālistu viedokli par darba vides riskiem, lai identificētu biežāk satopamos darba vides riskus sociālās aprūpes un rehabilitācijas institūcijās.

Pētījuma metodika *Research methodology*

Atbilstoši pētījumā izvirzītajam mērķim un uzdevumiem, tika izveidots pētījuma stratēģiskais plāns, kas ietvēra vairākus posmus-problēmas identifikāciju, definēšanu, pētījuma instrumenta izveidi, rezultātu novērtēšanu un popularizēšanu. Raksturojot izvirzīto problēmu, tika izmantota dokumentu kontentanalīze, kā rezultātā apkopoti zinātniskie fakti un atziņas par darba vides raksturojumu un ietekmējošajiem faktoriem. Pētījuma uzsākšanai, izmantojot statistiskās pētīšanas metodes, tika izveidota ģenerālā kopa- sociālā darba speciālisti un aprūpētāji. Respondentu viedokļa noskaidrošanai izmantotas empīriskās metodes-izlases veidošana, datu ieguve un statistiskā analīze, kuru pielietošana deva iespēju iegūt datus, kas tika analizēti un interpretēti (Kristapsone, 2008).

Izvirzītās pētījuma problēmas izpētei, balstoties uz darba vides novērtēšanas vadlīnijām un darba drošības instrukcijām, tika izveidots pētījuma instruments-strukturēta anketa, kura tika testēta pilotāžas pētījuma laikā. Anketa veidota no vairākām daļām un ietvēra jautājumus par respondentu statusu (vecums, dzimums, amats, darba stāžs) un darba vidi raksturojošajiem un ietekmējošajiem faktoriem (fizikāliem, ergonomiskiem un emocionāliem). Jautājumi sakārtoti tabulu veidā ar vairākiem iespējamām atbilžu variantiem, kā arī skalu veidā, kur respondentiem bija iespējams novērtēt faktoru ietekmi. Tāpat tika izmantoti arī daļēji atvērtie jautājumi, kas deva iespēju respondentiem sniegt savus komentārus vai papildinājumus.

Iegūtie dati analizēti ar secinošo statistiskas neparametrisko metodi, izmantojot Microsoft Excel un SPSS 21 datorprogrammu. Iegūtie dati variēti katras vienības ietvaros, salīdzināti starp vienībām un atspoguļoti tabulās un grafiskajos attēlos histogrammu veidā, kas parāda rezultātus. Balstoties uz iegūto datu analīzi, pētījuma beigās izvirzīti secinājumi un priekšlikumi.

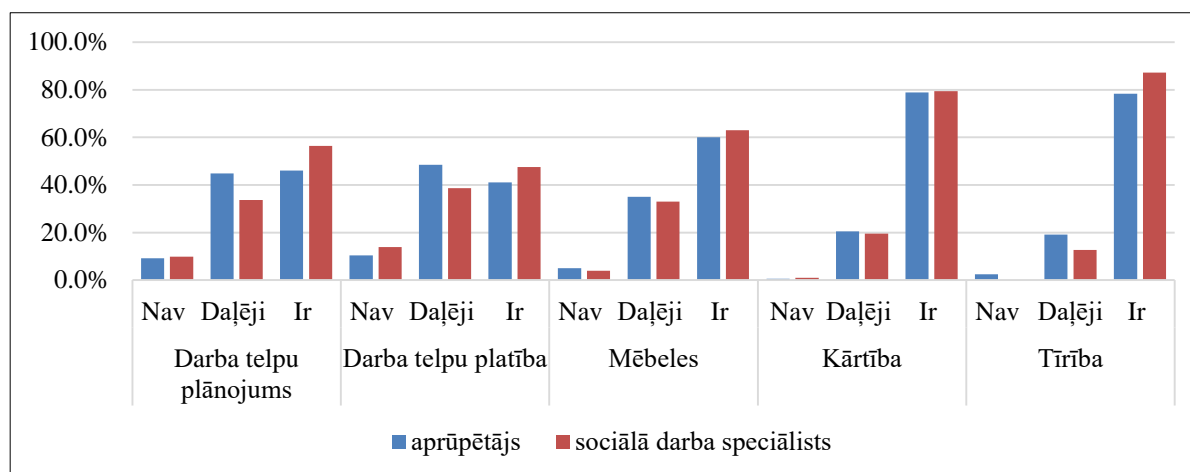
Pētījuma laikā tika ievēroti universālie pētniecības principi-dalībnieku aizsardzības un konfidencialitātes, godīguma, dalībnieku informētības, nozīmīguma, vispārināšanas, vienkāršības, uzticamības un atsauču norāžu principi.

Pētījums tika veikts 14 Sociālās aprūpes un sociālās rehabilitācijas institūcijās, kuras tika izvēlētas pēc nejaušības principa. Kopējais respondentu skaits-287.

Rezultātu analīze *Analysis of results*

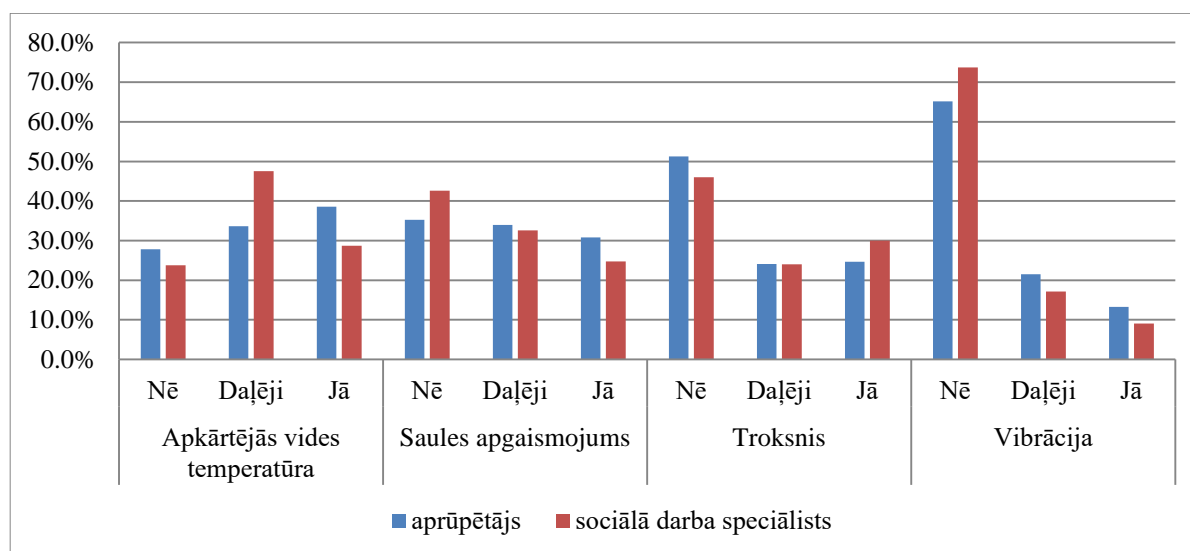
Lai noskaidrotu darba vides riska faktorus sociālās aprūpes un sociālās rehabilitācijas institūcijās, tika novērtēti fizikālās, ergonomiskās un emocionālās vides ietekmējošie faktori.

Novērtējot fizisko vidi, tika analizēts respondentu viedoklis par darba telpu platību, plānojumu, mēbeļu piemērotību, telpu tīrību un kārtību. Respondentu novērtējums bija pozitīvs, jo lielākā daļa aprūpētāju un sociālā darba speciālistu šos kritērijus ir novērtējuši kā atbilstošus vai daļēji atbilstošus un tikai neliels skaits respondentu atzīmēja, ka tie ir neatbilstoši (skat. 1. att.). Pie fiziskās darba vides kritērijiem pieder arī darba vietas apkārtnē, tās tīrība, kārtība, plānojums, platība. Arī šos kritērijus gandrīz visi respondenti atzīmēja kā piemērotus un tikai neliela daļa kā daļēji piemērotus ikdienā veicamajiem pienākumiem (skat. 2. att.).



1. att. Darba telpu piemērotība ikdienas pienākumiem

Fig. 1. The suitability of the surroundings of working places to everyday responsibilities

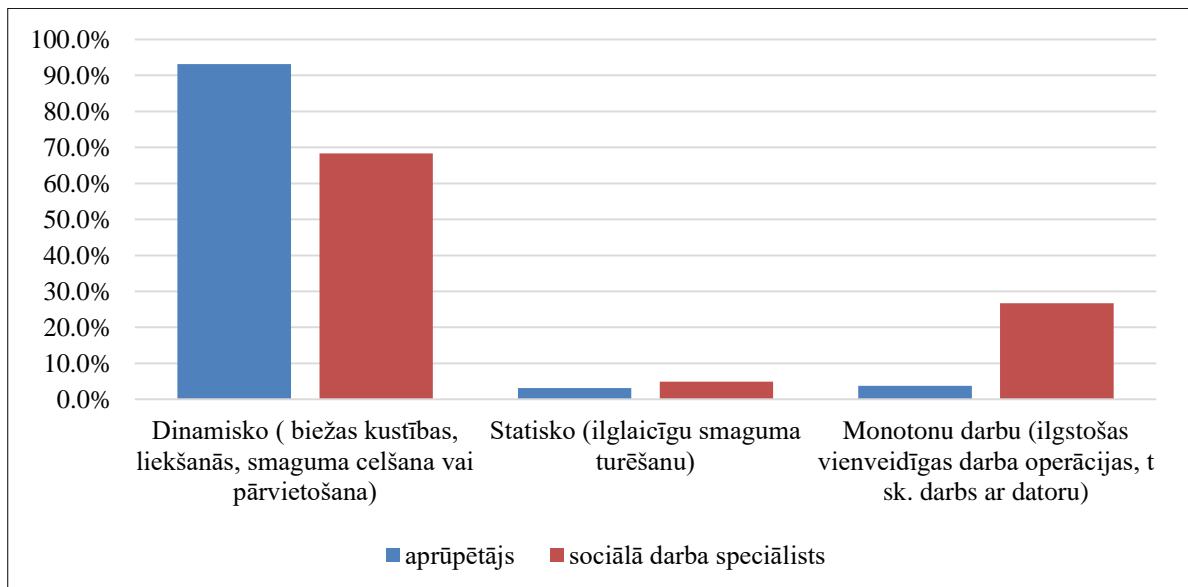


2. att. Fizikālo faktoru ietekme uz darbu ārpus telpām

Fig. 2. Physical factors influence on the outside

Lai ikdienā savā darba vietā būtu iespējams justies labi un komfortabli, svarīgs ir arī darba telpu mikroklimats. Aprūpētāji atzīmēja, ka darba pienākumu izpildi būtiski ietekmē vides temperatūra, nepietiekama ventilācija un caurvējš, turpretī sociālā darba speciālistu darbu būtiski ietekmē troksnis, saules gaisma, nepietiekama ventilācija un caurvējš. Abas respondentu grupas atzīmēja, ka ikdienā ir jūtama arī ķīmisko vielu klātbūtne - dezinfekcijas un mazgājamo līdzekļu, kā arī problēmas bieži rada slīdošas un mitras grīdas. Kā darba vidi ietekmējošs faktors noteikti jāatzīmē darbs, kas saistīts ar neērtām kustībām, ierobežotu telpu, bīstamām virsmām- asas malas un izvirzījumi. Daļēja vai minimāla ietekme uz ikdienas darbu ir vibrācijai, starojumam, darba vietas

stabilitātei, elektromagnētiskajam laukam, karstu un aukstu vielu klātbūtnei, saspiestam gaisam un tvaikam. Ikdienas darbā svarīgi arī pievērst uzmanību grīdas segumam. To pētījumā atzīmēja lielākā daļa aprūpētāju, jo to darbs saistīts ar biežu pārvietošanos, ko savukārt ietekmē slidenas un slapjas grīdas, kas var veicināt pakrišanas un pakļupšanas risku.



3. att. Ergonomiskās darba slodzes novērtējums

Fig. 3. Ergonomic conditions of the work

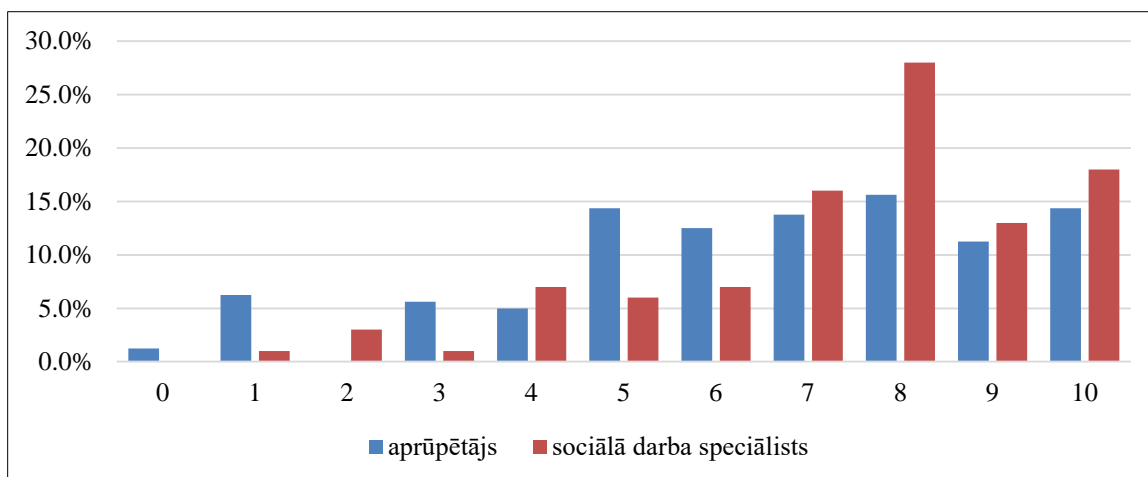
Ikdienas darbā sociālajās institūcijās, it īpaši tajās, kuru specifika ir saistīta ar ilgstošu sociālo aprūpi, darbiniekiem nākas saskarties arī ar ergonomiskajiem faktoriem, kas ietekmē viņu ikdienu. Tādēļ svarīgi izvērtēt slodzes apjomu. Pētījuma laikā tika noskaidrots kāda galvenā slodze prevalē ikdienas darbā, veicot klientu aprūpi un pārvietošanu (skat. 3. att.).

Lielākā daļa aprūpētāju (93,1 %) un sociālā darba speciālistu (68,3 %) atzīmē, ka viņu galvenā darba slodze ir dinamiskā slodze un saistīta ar biežām kustībām, liekšanos, smagumu celšanu vai pārvietošanu. Neliela daļa aprūpētāju (3,8 %) un sociālā darba speciālistu (26,7 %) kā galveno darba slodzi atzīmē monotonu darbu- ilgstošas, vienvēidīgas darba operācijas t.sk. darbu ar datoru. Statisko slodzi, kas ietver ilglaicīgu smaguma turēšanu, par galveno atzīmē 3,1 % aprūpētāju un 5 % sociālā darba speciālistu. Visvairāk nodarbinātās ķermeņa daļas ir rokas, kājas un mugura, kā arī muguras lejasdaļa. Lielākā daļa aprūpētāju, kuru darbs ir tieši saistīts ar klientu aprūpi, kas ietver smagumu pārvietošanu, smagumus pārvieto apmēram 11-40 reizes maiņas laikā, savukārt sociālā darba speciālistu darba specifika ir mazāk saistīta ar smagumu pārvietošanu. Sociālās aprūpes un sociālās rehabilitācijas institūcijās ikdienas darba veikšanai ir pieejami

palīgīdzekļi un kā biežākie tiek atzīmēti pacēlāji un jostiņas, bet izmantoti tiek arī slidināmie dēļi un paladziņi.

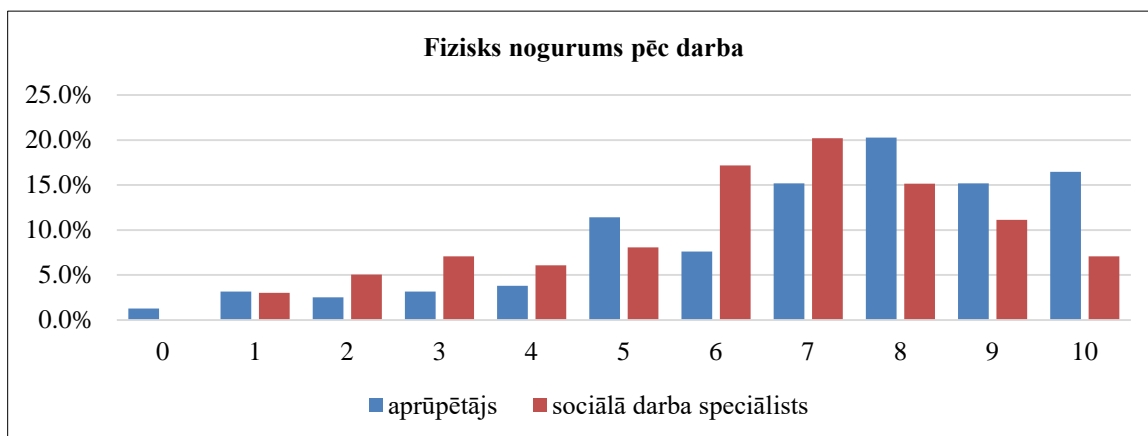
Sociālā darba speciālistiem un aprūpētājiem ikdienas darbā ir jāuzņemas liela atbildība saistībā ar darba pienākumiem, tādēļ darba kvalitāti ietekmē arī vairāki emocionālie faktori. Ikdienā strādājot ar klientiem, lai nodrošinātu sniegto pakalpojumu kvalitāti, būtisks aspekts ir saskarsmes procesa veidošana. Šajā procesā tiek iesaistīti klienti, klientu tuvinieki un personāls. Bieži vien tas ir ļoti sarežģīts, jo darbu, kas saistīts ar klientu aprūpi un ciešanām, var ietekmēt negatīvas emocijas. Novērtējot saskarsmes procesu ir svarīgi ņemt vērā arī to, kā veidojas saskarsme starp darbiniekiem un klientiem. Atbildot uz jautājumu vai saskarsmes procesa nepilnības var radīt emocionālās vides riskus, kas savukārt var ietekmēt darbinieku veselību. Lielākā daļa aprūpētāju (60,1 %) un sociālā darba speciālistu (70,6 %) pārliecinoši apstiprina, ka negatīva saskarsme starp klientiem un darbiniekiem ietekmē emocionālo vidi institūcijā, kas savukārt var ietekmēt arī darbinieku veselību. Lai darbinieki būtu apmierināti ar savu darba vietu, svarīgs ir institūcijas psiholoģiskais mikroklimate. Nenoliedzami svarīga ir arī klientu tuvinieku attieksme pret darbiniekiem. Uz šo jautājumu apstiprinoši atbild arī lielākā daļa aprūpētāju (75 %) un sociālā darba speciālistu (82,4 %). Ikdienas darbā nereti nākas izjust arī agresiju no klientu puses. Analizējot pētījumā iegūtos datus, to pārliecinoši apstiprināja lielākā daļa aprūpētāju (64 %) un sociālā darba speciālistu (69,6 %). Tomēr neskatoties uz darba smagumu un īpatnībām, lielākā daļa respondentu savos darba kolektīvos saskarsmē ar kolēģiem jūtas komfortabli un savstarpējais kontakts ir labs, kā arī darbinieki viens otru psiholoģiski atbalsta.

Lai novērtētu darba vidi un tās ietekmi uz darbinieku emocionālo sfēru, svarīgs ir darbinieku noskaņojums pēc darba beigām. Tādēļ pētījuma ietvaros, tika novērtēts arī morālais, fiziskais un emocionālais nogurums, kur respondentiem tika piedāvāts pašiem uz skalas 10 baļļu sistēmā atzīmēt savu noguruma līmeni (skat. 4., 5., 6. att.). Lielākā daļa sociālā darba speciālistu atzīst, ka darba dienas beigās izjūt lielu vai ļoti lielu morālo nogurumu, kas ir saistīts ar darba specifiku, kas ietver gan darbu ar klientiem un viņu tuviniekiem, gan darbu ar personālu, kā arī tiem ir liela atbildība, organizējot klientu sociālās aprūpes un sociālās rehabilitācijas procesu. Tāpat liels ir gan aprūpētāju, gan sociālā darba speciālistu skaits, kas darba beigās izjūt lielu fizisko nogurumu.



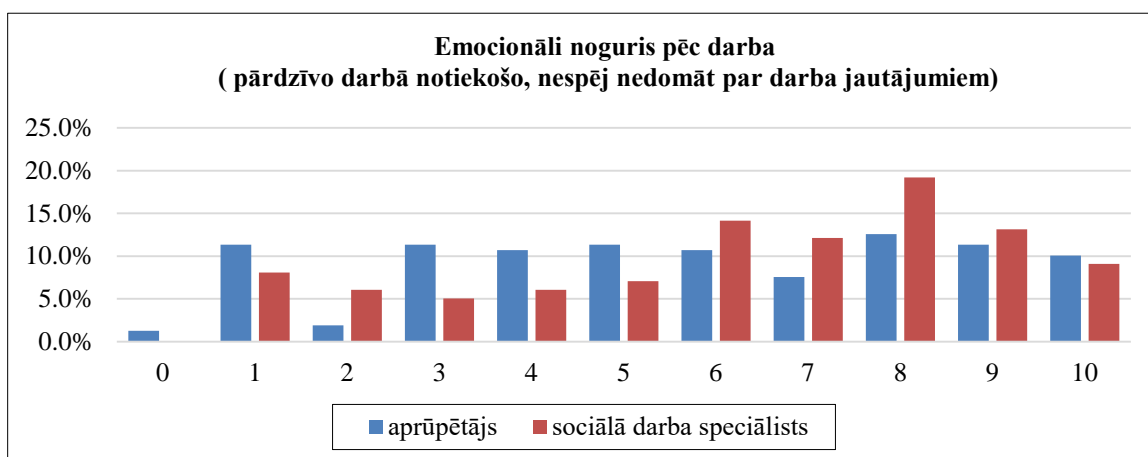
4. att. **Morālā noguruma novērtējuma pakāpe**

Fig. 4. Morally tired



5. att. **Fiziskā noguruma novērtējuma pakāpe**

Fig. 5. Physically tired



6. att. **Emocionālā noguruma novērtējums**

Fig. 6. Emotional tiredness

Sociālā darba speciālisti ikdienā vairāk izjūt emocionālo spriedzi, jo darba pienākumi ir saistīti ar klientu sociālās aprūpes un sociālās rehabilitācijas plānošanu, realizēšanu un rezultātu novērtēšanu, kam nepieciešama liela atbildība, kas savukārt rada emocionālo spriedzi, bet aprūpētāju darbs ir vairāk fizisks un tādēļ tie emocionālo spriedzi izjūt mazāk. Tomēr neskatoties uz darba dienā piedzīvoto, lielākā daļa sociālajā aprūpē un sociālajā rehabilitācijā strādājošo jūtas optimistiski noskaņoti un pozitīvi.

Secinājumi

Analizējot anketēšanā iegūtos rezultātus, var secināt, ka:

1. Lielākā daļa sociālās aprūpes un sociālās rehabilitācijas institūciju strādājošie ar saviem darba apstākļiem un darba vidi jūtas samērā apmierināti.
2. Lielākā daļa sociālā darba speciālistu darba telpu platību, plānojumu, mēbeļu piemērotību, telpu tīrību un kārtību un apgaismojumu, novērtē kā atbilstošu, tomēr ir joprojām institūcijas, kurās šie faktori ir daļēji atbilstoši.
3. Ikdienu vairāk ietekmē darbs, kas saistīts ar neērtām kustībām un ierobežotu telpu, kā arī grīdas seguma kvalitāte- slapjš, slidens un bojāts un kāpņu kvalitāte.
4. Ikdienas darbā par galveno slodzi sociālā darba speciālisti atzīmē dinamisko slodzi, kas saistīta ar biežām kustībām, liekšanos, smaguma celšanu vai pārvietošanu un visvairāk nodarbinātās ķermeņa daļas ir rokas, kājas un mugura, kā arī muguras lejasdaļa.
5. Ikdienas darba veikšanai biežāk pieejamie palīglīdzekļi ir pacelāji un jostīņas, bet izmantoti tiek arī slidināmie dēļi un paladziņi.
6. Saskarsme starp kolēģiem ir pozitīva, bet starp klientiem un darbiniekiem ir vērojamas saskarsmes problēmas, kuras būtiski ietekmē institūcijas psihoemocionālo vidi, kas savukārt var ietekmēt arī darbinieku veselību.
7. Lielākā daļa sociālajā aprūpē un sociālajā rehabilitācijā strādājošie jūtas optimistiski noskaņoti, lai gan atzīst, ka darba dienas beigās izjūt lielu morālo un fizisko nogurumu, un emocionālo spriedzi darba dienas beigās.
8. Lielākajā daļā sociālo institūciju vadība rūpējas par darbinieku pašsajūtu un veic uzlabojumus darbinieku darba vides uzlabošanā un risku samazināšanā.

Summary

Majority of staff in social care and social rehabilitation institutions are relatively satisfied with their work conditions and work environment. Most social work specialists assess as appropriate work space, layout, furniture, room cleanliness and order, and lighting. However, there are institutions in which these factors are partially satisfied. Daily work mostly affects the work related to the inconvenient and limited space, as well as floor quality – wet, slippery and damaged floors, and quality of stairs. In daily work as the main load was mentioned the dynamic load associated with frequent movement, bending, lifting and shifting heavy weights, and most employed parts of the body are arms, legs and back, as well as lower back. More available assistive products for everyday work are hoists and belts, but are used also sliding boards and slide sheets. Contact between colleagues is positive, but between clients and staff there are communication problems which significantly affect institution's psycho emotional environment, which in turn, create risks which may affect the health status of employees. Majority of social care and social rehabilitation workers feel optimistic although it is acknowledged that, at the end of the working day, there is a great deal of moral and physical fatigue, and emotional tension. Most social institutions' managements care about the employees' feelings and carry out improvements in the work environment, and try to reduce risks.

Literatūra References

- Darba vides risku novērtēšanas vadlīnijas* (2003). http://osha.lv/lv/publications/docs/darba_vides_riska_novert_vadl.pdf
- Kaļķis, H., Kaļķis, V., & Roja, Ž. (2015). *Arodveselība un riski darbā*. Rīga: Medicīnas apgāds.
- Kristapsone, S. (2008). *Zinātniskā pētniecība studiju procesā*. Rīga: Turība.
- Labklājības ministrija informatīvais materiāls (2010). *Ergonomika darbā*. Rīga.

CONSTRUCTIVE DEALING WITH ANXIETY AND ANGER AS AN ASPECT OF THE QUALITY OF LIFE OF MATURING GIRLS WHO PRACTISE TAEKWON-DO

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Abstract. *The quality of life, including the quality of life connected with health covers coping with difficult emotions and the ability of fulfilling aims, despite their deconstructive effects. Constructive dealing with emotions, such as anxiety and anger (i.e. that are considered to have negative character) makes a very important aspect of the quality of one's life. The process of growing up is, to a large extent learning to cope with difficult emotions. In this work we are concentrating on one of the aspects of the quality of life connected with health-related effects of systematic physical activity performance, such as taekwon-do. One of the very important reasons of a positive influence of practising martial arts (and other forms of physical activity) on the quality of life is a beneficial impact of such an activity on a widely-understood psychophysical skills, dealing with anger and better coping with anxiety. In the light of contemporary knowledge (and old sources) taekwon-do cannot only mean physical activity, though, undoubtedly, it is a very important, key aspect of this activity. In the paper we present the results of our own research concerning the ways of dealing with anger and anxiety by the girls practising taekwon-do (with the inclusion of the period of practise). In the light of the our research girls and women who have practised taekwon-do for over 2 years are more effective in coping with the situations of the choice between different options (to choose from) if each of them has its positive and negative consequences. Maturing girls and young women who practise taekwon-do have better abilities of constructive coping with stressful situations, including reaction for the situations causing anxiety.*

Keywords: *health, physical activity, quality of life, taekwon-do, anxiety, anger.*

Introduction

Constructive dealing with emotions, such as anxiety and anger (i.e. that are considered to have negative character) makes a very important aspect of the quality of one's life (Branden, 1995; Brock et al., 2016; Tsos et al., 2017; Ortenburger et al., 2015). The process of growing up is, to a large extent, learning to cope with difficult emotions (Aronson et al., 2012; Brodani & Zuskova, 2015). The aim of this paper is to develop knowledge concerning pro-health effects (frequent activities, being the factors maintaining and improving health, such as: regularly undertaken physical activity, gradation of the degree of

difficulty of the performed physical tasks) of practising taekwon-do by maturing girls, in the context of the quality of life. This article covers the presentation of the following issues: the presentation of selected problems concerning the role of anxiety and anger in health and life quality, with respect to the important role played by the intensification and ways of coping with anxiety (that often performs warning role). Anger, though it is considered to be a difficult and potentially endangering safety emotion, in many cases plays a beneficial role through triggering in a man the strength necessary to protect one's own borders and other activities that are essential from the perspective of social order. The key role is played by coping with anxiety and anger (Aronson et al., 2012).

Taekwon-do is a Korean martial art, the name of which is composed of three words: tae- meaning a foot, kick, kwon- fist, fist hit, do- i.e. road, philosophy of life. The term Martial Arts is very often used as general phrase to describe many of the different combat arts and martial sports which have developed in eastern cultures (Wąsik et al., 2016).

In this paper we present the results of our own research concerning the ways of dealing with anger and anxiety by the girls practising taekwon-do (with the inclusion of the period of practise). In this work we are concentrating on one of the aspects of the quality of life connected with health-related effects of systematic physical activity performance, such as taekwon-do. The arguments of a biological and social character speak for analysing the dependencies between taekwon-do training and the ways of coping with anxiety. In this work we are concentrating on one of the aspects of the quality of life connected with health-related effects of systematic physical activity performance, such as taekwon-do. During a professionally arranged and coach-supervised physical activity, such as taekwon-do, a number of mechanisms that mobilize for activity, increase involvement, make boring, repetitive and monotonous activities nicer, is used.

Due to an increase of the degree of difficulty and controlling the performance of certain techniques in the case of maturing girls, their confidence in own psychophysical abilities is built. It helps to boost self-esteem and lower the feeling of hopelessness in the situations causing anxiety. Due to an attractive formula of classes and the programme of classes created by the coach, the participants voluntarily undertake to perform the tasks that they would find hard to perform, due to tiredness.

In the light of contemporary knowledge (and old sources) taekwon-do cannot only mean physical activity, though, undoubtedly, it is a very important, key aspect of this activity. An activity specified as taekwon-do, besides being a regularly undertaken physical activity, also covers learning self-discipline, developing ability to manage own energy (by means of proper feeding and taking care about sleeping enough), avoiding unfavourable health habits. Practising taekwon-do covers, among others, gradual preparation for the tasks of

a growing degree of difficulty and preparing for undertaking rivalry during competitions and tournaments. It does not only mean undertaking rivalry with a sparring partner and opponents during the fight, but also coping with own anxieties (including anxiety about failure, stultification e.g. in front of friends, coaches and spectators). From the developmental perspective, it may mean an increase of the possibilities of a nervous system and increase of the ability of coping with the situations that cause different anxieties and even severe fear of failure.

By many authors, practising martial arts by maturing girls and women in the early stages of adulthood, it is considered to be the source of a better quality of life during those periods and in the later stages. It may make the source of strengthening the feeling of confidence and lowering the feeling of hopelessness (Richman & Rehberg, 1986; Wąsik et al., 2016; Leite, 2014). For this reason In the paper we present the results of our own research concerning the level of anxiety and anger by the girls practising taekwon-do with the inclusion of the period of practise.

Contemporary knowledge makes it obvious that there might be many factors influencing on an illness. There are data revealing that effective dealing with anxiety, fear, frustration and anger has a positive adaptive meaning. Looking at a man as a bio-psycho-social individual one must assume that all factors, including psychological factors, play a certain role and can make the stress and anxiety element favorable for the increase of an illness (Szerla et al., 2017; Spałek at al., 2017). That is reason why coping with anxiety so considerable for quality of life. Emotions (including anxiety, fear, anger) have their body, vegetative constituent. Some of the indications of this constituent are objective, as they are visible even for the environment e.g. paleness, blushing, sweating. Others are subjective and concern only the patient e.g. dryness in an oral cavity caused by fear, accelerated heartbeat; other indications of experiencing emotions can be revealed in laboratory tests. Symptoms of anxiety: heart rate increases, heart palpitations (“flutters”), chest pain, breathlessness, perspiration (increased sweating, sweaty palms), dryness of the mouth, dizziness, tingling sensations, aches and pains, headaches, tiredness, legs weak, trembling, digestive disturbance. Physical symptoms are very real. They may be caused by a normal bodily change, or by stress or worry. The symptoms caused by anxiety and worry often are just as real as those caused by illness. The physical symptoms can become a major problem (Brock, 2016; Aronson, 2012).

Physiological components of emotions are very important for a man as they make an adaptability mechanism: as a reaction, body answer to an impulse that has emotional value for a man. They are to prepare an organism for dealing with the situation that is signalized with the abovementioned impulse. The elements of an emergency reaction provide an organism with potential energy that can be

used for active confrontation with the danger (Leite, 2014; Spielberger, 1983; Wąsik et al., 2016).

Method

The research covered the group of 71 girls practicing taekwon-do aged between 14 and 21 (average 16.9 ± 1.6 year). In the presented research the data were gathered with the use of self-elaborated questionnaire including open and close questions (anger expression forms) and the State-Trait Anxiety Inventory. The State-Trait Anxiety Inventory is a research instrument for studying anxiety defined as temporary and conditioned by the situation state of an individual as well as anxiety defined as a relatively constant personality trait (Spielberger, 1983). This Inventory consists of two subscales, the first subscale measures state anxiety, the second measures trait anxiety. Internal compliance of both scales in the Polish language version is high. The state anxiety scale additionally may be useful in experimental studies that need to record changes in anxiety intensification.

For each indicator, mean value as well as standard deviation were calculated. Normality of the distribution was verified by Shapiro-Wilk test. Data were analysed using descriptive and inferential statistics. Data were analyzed using one-way analysis of variance (ANOVA). In all cases p -values < 0.05 were considered statistically significant. All calculations were made using Statistica 12.0.

Results

In group 1 (taekwon-do practice time from 1 year to 1 year and 2 months) level of anxiety was average 47.80 ± 10.32 . In group 2 (taekwon-do practice time: from 1 year and 2 months to 2 years and 2 months) level of anxiety was 40.86 ± 9.99 (scores 20-80). The obtained results are presented in Tables 1-2. The obtained data underwent statistical analysis, including the measurement of the parameters of variability such as mean, and standard deviation (Table 1).

This table presents the results showing what the level of anxiety is among girls who practise taekwon-do. Compared with the group 2, in the group 1 (duration of taekwon-do group attendance) there is a higher mean value of level of anxiety $F(1.69) = 8.28$, $p = 0.005$.

For level of anxiety of taekwon-do athletes indicator mean value as well as standard deviation were calculated (Table 1). From the data registered we see that the average in group 1 (taekwon-do practice time: from 1 year and 2 months to 2 years and 2 months) is 47.80 ± 10.32 scores and 40.86 ± 9.99 scores for the

group 2 (taekwon-do practice time: from 1 year and 2 months to 2 years and 2 months).

Table 1 Level of anxiety of maturing girls who practise taekwon-do

Duration of taekwon-do (TDK) group attendance	Level of anxiety scores: from 20 to 80			
	N	Mean	SD	p
Group1 Taekwon-do practice time: from 1 year and 2 months to 2 years and 2 months	35	47.80	10.32	0.00
Group2 Taekwon-do practice time: from 1 year and 2 months to 2 years and 2 months	36	40.86	9.99	

SD – standard deviation

Table 2 Obtained values of the anxiety

Level of anxiety (scale from 20 to 80)	Frequency	%
28	3	4.23
29	2	2.82
31	1	1.41
32	2	2.82
33	1	1.41
34	1	1.41
35	4	5.63
36	4	5.63
37	1	1.41
38	6	8.45
39	6	8.45
40	4	5.63
41	4	5.63
42	3	4.23
43	1	1.41
44	1	1.41
48	1	1.41
49	6	8.45
52	1	1.41
53	2	2.82
55	1	1.41
56	3	4.23
57	1	1.41
58	1	1.41
59	5	7.04
63	3	4.22
65	2	2.81
68	1	1.41

Obtained responses for the Anxiety Inventory assess intensity of current feelings “at this moment”: not at all, somewhat, moderately so, and very much so (maximum was 68 and minimum 28 scores) The higher score indicating greater anxiety.

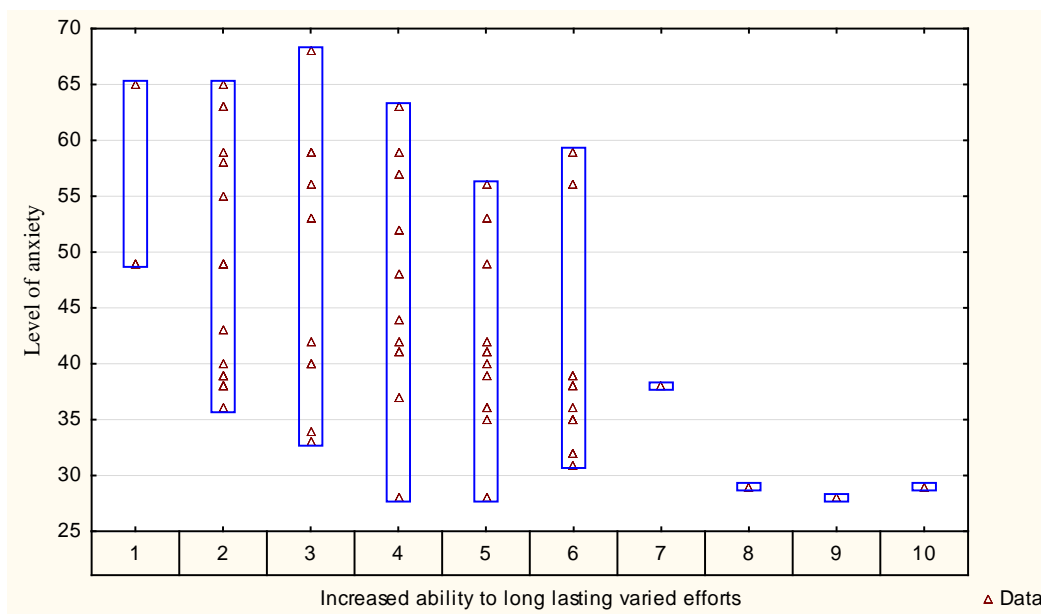


Figure 1. Level of anxiety and increased ability to long lasting varied efforts

Figure 1 presents the values of index increased ability to long lasting varied efforts and the value of the index of level of anxiety among 71 girls who practise taekwon-do. Pragmatically, the influence of the anxiety level for value of index increased ability to long lasting varied efforts is an intriguing area for future research.

Discussion

Obtained data can inform us about the average level of anxiety in tested female athletes. The results of this study showed that increased duration of taekwon-do group attendance of trainings is connected with increased the ability to restraining negative anxiety reactions (Figure 1).

In the assessment of anxiety the Polish version of Spilberger’s State-Trait Anxiety Inventory was used. The STAI scores correlate significantly with the scores of instruments measuring theoretical constructs similar to anxiety; the accuracy of the state anxiety scale has been additionally verified and confirmed in numerous experimental studies (Spielberger et al., 1983). Higher score indicating greater anxiety. Almost all levels of anxiety can be normal in specific

situations and for brief periods. However, frequent or persistent anxiety that causes distress is not healthy (Aronson et al., 2012).

Table 1 summarizes the values level of anxiety which can be experienced in varying degrees of intensity. However, frequent or persistent anxiety that causes distress influence for general functioning is predictor lower quality of live. Persistent anxiety can distort how maturing girls perceives and responds to threat (Jens et al., 1999; Aronson et al., 2012).

Data concerning expression of experienced anger were obtained. Increased frequency of trainings in connection with a longer training status (longer practice, more than 1,2 year) is connected with an increased ability of controlling oneself, restraining negative reactions. The research showed that 98 % of the girls, thanks to practising taekwon-do can cope with stress a lot better than before they started this exercising. In the light of the research girls and women who have practised taekwon-do for over 2 years are more effective in coping with the situations of the choice between different options (to choose from) if each of them has its positive and negative consequences. The sample group indicated that, under the influence of regular exercising, unpleasant anxiety connected with comparing their own body and appearance with other girls and women had lowered.

It corresponds with the research results indicating that, thanks to taekwon-do training, social anxiety, revealed in the situations of social exposure in the environment of competition, lowers (Wąsik et al., 2016; Ortenburger et al., 2015). The graph presented on Figure 1 indicates that there is need of a study of psychological aspects of physical preparation. A need exists for additional research on level of anxiety and increased ability to long lasting varied efforts (Tsos et al.).

Many authors think that practising martial arts by the maturing girls and women in the early stages of their adulthood is considered to be a source of a better quality of life during those periods and in the later phases (King & Williams, 1997; Richman & Rehberg, 1986). One of the most important reasons of the positive impact of taekwon-do (and other forms of physical activity) on the quality of life is a beneficial impact on such an activity on coping with anger and better dealing with anxiety. In light of literature the benefits to girls has been nothing less than astonishing (Wąsik et al., 2016; Richman & Rehberg, 1986). Benefits include less anxiety (Table 1) control of aggressive behavior and the gain of self-respect, self-control, self-defense and confidence. As an additional benefit, the girl will be also good in other athletic endeavors.

More active people cope better with anxiety. It is important reason (among others) why some people handle stress better than others (Szerla et al., 2017; Ortenburger et al., 2017). It shows that the influence of the anxiety level for value of index increased ability to long lasting varied efforts is an intriguing area

for future research. We all respond to stress differently, and some of us are more resilient than others (Jens et al., 1999; Leite, 2014; Spalek et al., 2017). In general, future studies that can control for a number of important influencing factors might be able to provide a better understanding of the true nature of the social-psychological outcomes of martial arts practise for adolescents (Vertonghen & Theeboom, 2010).

Summary

General activity connected with practicing taekwon-do co-create the healthy lifestyle and quality of life of maturing girls who practice this martial art. Why does the martial arts help girls keep balance? Why is it reducing the level of anxiety? Because, in order to obtain proper effects appropriate duration of trainings, intensity and frequency are necessary (Wąsik et al., 2016; Richman & Rehberg, 1986; King & Williams, 1997). These elements compose certain profile of an activity that influences on the overall functioning in the period of adolescence. It is a factor protecting against stress. Stress cannot be avoided. Stress and anxiety make an inseparable attribute of a human activity and life. Stress and the accompanying fear and anxiety are common in the world of human experience and have many different shades what makes it difficult to explain or even rationally classify them. Chronic physiological vegetative elements of emotions like strong anxiety can initially lead towards changes within body action, if they last for too long and additionally consider a weaker organ. Activity connected with practicing taekwon-do co-create quality of life of maturing girls who practice this martial art.

References

- Aronson, E., Wilson, T., & Akert, R. M. (2012). *Social Psychology. The Heart and the Mind*. Warszawa: Zysk i S-ka.
- Branden, N. (1995). *The Six Pillars of Self-Esteem: The Definitive Work on Self-Esteem by the Leading Pioneer in the Field*. New York: Bantam Dell.
- Brock, R., Rowse, G., & Slade, P. (2016). Relationships between paranoid thinking, self-esteem and the menstrual cycle, *Archives of women's mental health*, 19 (2), 271–279.
- Brodani, J., & Zuskova, I. (2015). Quality of life and physical activity of kindergarden teachers, *Physical Activity Review*, 3, 11–21.
- Jens, C. P., Dirk, H. H., & Kirschbaum, C. (1999). Low self-esteem, induced failure and the adrenocortical stress response, *Personality and Individual Differences*, 27 (3), 477–489.
- King, L. A., & Williams, T. A. (1997). Goal orientation and performance in martial arts, *Journal of Sport Behaviour*, 20 (4), 397–412.
- Leite, W. (2014). Competition versus nature: how the sport warps human character, *Physical Activity Review*, 2, 1–9.
- Ortenburger, D., Wasik, J., & Góra, T. (2015). Report of the 1st World Congress on Health and Martial Arts in Interdisciplinary Approach 17-19 September 2015. Czestochowa. *Physical Activity Review*, 3, 49-51.
- Ortenburger, D., Rodziewicz-Gruhn, J., Wąsik, J., Marfina, O., & Polina, N. (2017b). Selected problems of the relation between pain-immunity and depression, *Physical Activity Review 2017* (5), 74-77.

- Richman, C. L., & Rehberg, H. (1986). The development of self-esteem through the martial arts. *International Journal of Sport Psychology*, 17, 234-239.
- Spalek, R., Ortenburger, D., Szerla, M., & Bitner, B. (2017). Musculoskeletal pain as a challenging problem for patients and occupational therapists, *Physical Activity Review*, 5, 196-201.
- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto: CA Consulting Psychologists Press.
- Szerla, M., Ortenburger, D., Kluszczynski, M., & Wyszomierska, J. (2017). Exercise and psychological factors in low back pain, *Physical Activity Review*, 5, 6–9.
- Tsos, A., Hylchuk, Y., Andreichuk, O., Pantik, V., & Tsymbaliuk, S. (2017). Physical and mental health components condition in the life quality of students who regularly practice kickboxing and yoga. *Physical Activity Review*, 5, 37–43.
- Vertonghen, J., & Theeboom, M. (2010). The Social-Psychological Outcomes of Martial Arts Practise Among Youth: A Review. *Journal of Sports Science & Medicine*, 9 (4), 528-537.
- Wąsik, J., Ortenburger, D., & Góra, T. (2016). The kinematic effects of taekwondo strokes in various conditions the outside environment. Interpretation in the psychological aspect and perspective of application in sport, health-related training and survival abilities. *Archives of Budo*, 12, 287–92.

YOUTH PHYSICAL ACTIVITY AND THE PROCESS OF PHYSICAL EDUCATION IN LUBLIN PROVINCE, POLAND

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Abstract. *The research was conducted on a randomly chosen group of 916 students aged 16-18 in Lublin Province, Poland. The research was carried out in 2016 using the International Physical Activity Questionnaire, the extended version, and supplemented with additional questions regarding the students' assessment of physical education lessons. The majority of students (77.4 %) meet the requirements for a high level of physical activity, with the remaining 16.5 % demonstrating moderate and only 6.1 % – low level. There were no significant reductions of physical activity visible in the older age group, although in subsequent periods (in 16-18 year-olds), it was successively lower. The mean level of total physical activity in boys was 65566 MET¹ - min week, and it was significantly higher than in girls, i.e. 5345,5 MET-min/week. The vast majority of students (92.2 %) participate in school physical education classes, and over 75 % think that they like these activities. Students enrolled in physical education classes demonstrate a higher level of total physical activity (5960.5MET-min/week), in contrast to the non-participating ones (5637,2MET-min/week); however, no significant relationship has been found. Furthermore, it has been shown that girls and boys were willing to get involved in different physical activities. Apart from PE classes, boys would mainly get involved in football (23.2 %), volleyball (15.5 %), table tennis (13.0 %), and swimming (12.5 %). Girls would instead choose volleyball (14.7 %), football (12.6 %), swimming (9.4 %) and gymnastics (8.9 %). This favourable image of physical activity of students in the Polish schools in Lublin Province can contribute to the discussion of the place of physical activities in the modern school educational process.*

Keywords: *PE classes, physical activity, school youth.*

Introduction

According to the WHO, physical activity is one of the essential components in maintaining a healthy lifestyle, and its lack is a common cause of poor health at various stages of ontogenesis, including school-age youth.

Therefore, in addition to providing knowledge, it is necessary to properly care for the appropriate level of physical activity in students in the school didactic

¹ 1 MET - corresponds to the amount of oxygen consumed at rest and is equal to 3.5 ml of oxygen per kg body weight per minute.

process. It should be emphasised that in Poland the Ministry of Sport and Tourism initiated the campaign “Prevent sick absences in PE classes” in 2012, in which many well-known athletes and actors took part. Then, in the years 2013-2016, the programme “Physical Education in Class” was introduced in which over 3,000 schools, 7,000 teachers and 200,000 students participated. It aimed to increase the awareness of pupils, parents and those who issue exemptions from the PE classes.

To closely follow the level of physical activity of societies from different countries, the International Physical Activity Questionnaire was developed (Booth, 2000). It has been used over the years to test schoolchildren from various countries including Spain (Cocca et al., 2014) of Norway (Rangul et al., 2014), Brazil (Pellegrini et al., 2014), Nepal (Paudel et al., 2014), the Visegrad countries (Ács et al., 2016), Lithuania (Bergier B., Bergier J., & Wojtyła, 2012) as well as some other countries (Mazur, 2013).

The results of these studies point to an unfavourable phenomenon of low physical activity prevalence in adolescents, which comes with age and a lower level of physical activity in girls when compared to boys.

Thus, it seems vital to emphasise the place the school takes in popularising physical activity with young people (Kretchmar, 2006; Mc Kenzie et al., 2000; Woynarowska, 2011; Ács et al., 2016; Vanhelst et al., 2010; Zaza, Briss, & Harris, 2005).

Aim of the work

The primary objective of the following work was to learn about students’ health behaviour drawing on the data on their physical activity and participation in PE lessons. Accordingly, the following research questions were posed:

1. What is the level of physical activity of students?
2. Which sociodemographic factors (gender, age) determine physical activity?
3. In what way the participation in the PE classes, including their positive assessment, and the level of physical activity are linked?

Methodology of the research

Material and the method

The study was conducted in 2016 on a randomly chosen group of 916 students aged 16-18, in which 16 year-olds constituted 21.9 % (177 persons), 17 year-olds – 37.1 % (299) and 18 year-olds – 41.0 % (331), all coming from Lublin Province, Poland. The study based on the International Physical Activity Questionnaire (IPAQ – the extended version), supplemented with data concerning the participation in physical education lessons.

Results

Level of physical activity in students

The research results showed that the majority of students (77.4 %) meet the requirements of a high level of physical activity, 16.5 % demonstrate a moderate level and only 6.1 % – low (fig. 1).

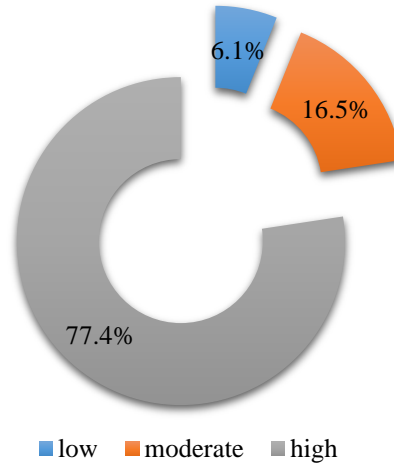


Figure 1. **Level of youth physical activity**

Gender and physical activity

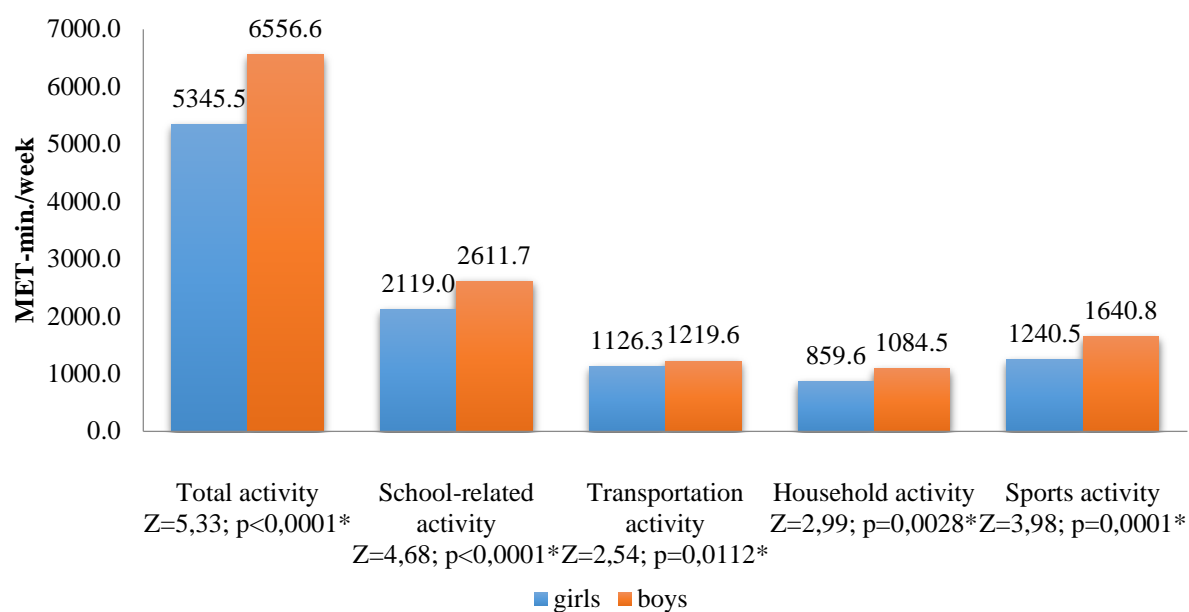
The level of total physical activity in boys amounted to 6556,6 MET-min / wk² and was significantly higher than in girls - 5,345,6 MET-min / wk³. Essential differences in favour of the boys were found in each of the four domains of physical activity: in the school-related activity, transportation activity, housework activity and sports (Fig. 2).

Age and physical activity

As for the place of residence, i.e. a village, a small town, a medium town or a large city, no significant differences were found at the level of total physical activity in pupils. However, significant variation was visible in the area of housework-related physical activity which was the highest in the students coming from rural areas (1,220.6 MET) and small towns (1,061.1 MET) when compared to those living in medium-sized cities (719.3 MET) and big ones (728.3 MET) (Fig. 3).

² 1 MET

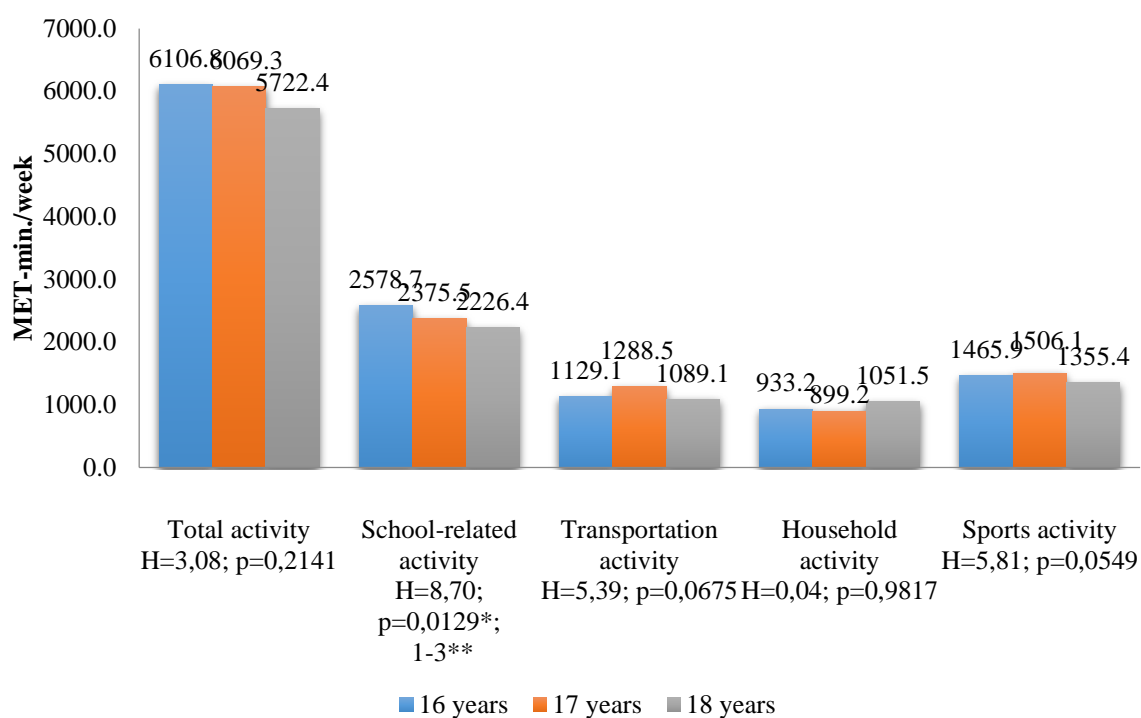
³ in the further part of the work the abbreviation "MET" will be used.



Z- value of Mann-Whitney U-test

* significant variation at $p < 0,05$

Figure 2. Physical activity and its domains with regard to gender



* significant variation at $p < 0,05$

** age groups among which significant statistical variation was found

Figure 3. Physical activity and its domains with regard to age

Participation in PE classes

The vast majority of students (92.2 %) declared that they participate in PE classes. 77.1 % of the respondents like these classes and nearly half would like to increase the number of hours in this subject (Fig. 4).

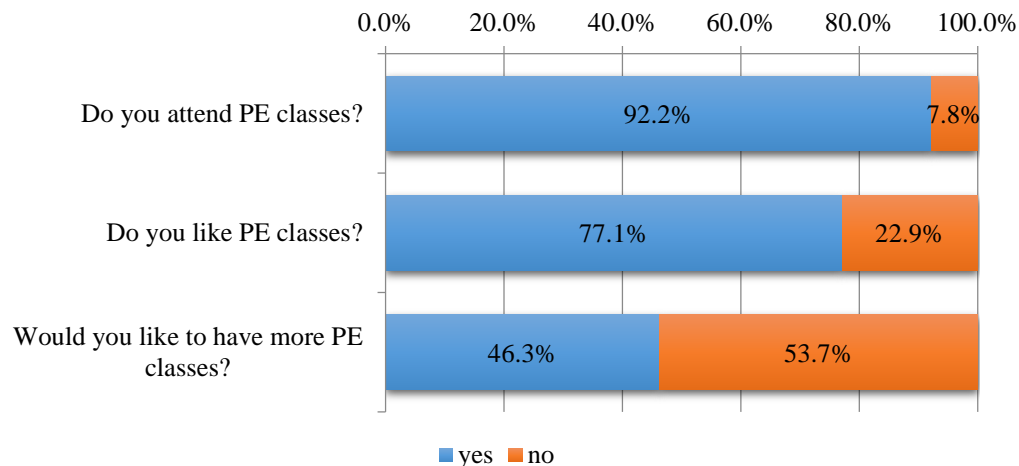


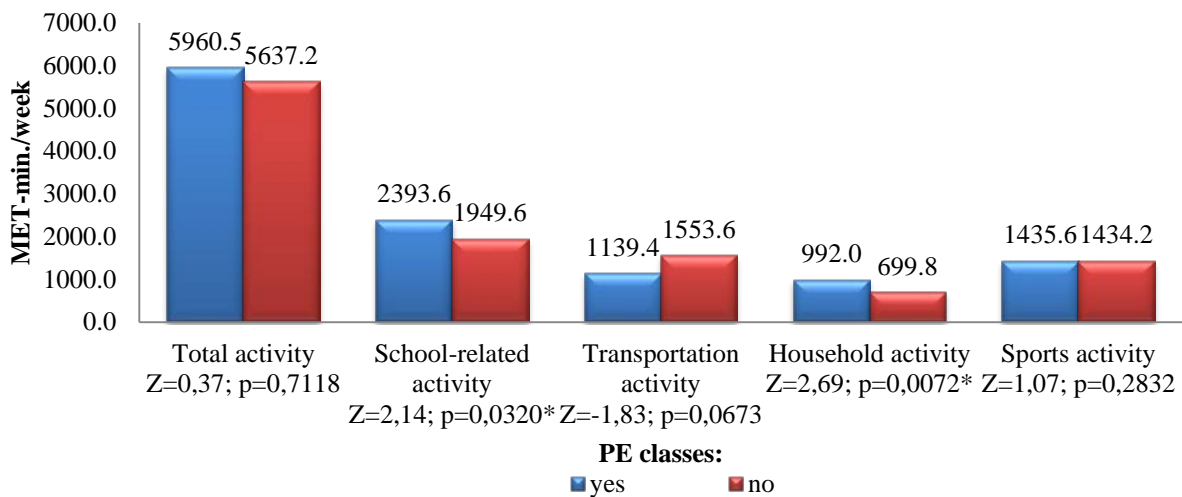
Figure 4. **Participation in PE classes**

The most frequently mentioned type of physical activities during the day turns out to be participating in PE lessons (82.8 %), getting to and from school – 80.2 %, doing sports (64.7 %), being involved in games and activities with peers (44, 6 %), walking the dog (31.4 %) as well as doing extracurricular activities at school (29.6 %).

The most common reasons for non-participating in PE classes given by the group of 63 students was a long-term sick leave (74.6 %), aversion to this type of activities (17.5 %) and other (7.9 %).

The most commonly practised sports disciplines in boys' sports clubs include football (23.2 %) and volleyball (15.5 %), as well as table tennis, swimming, martial arts, basketball, handball and winter sports – 13 indications (10 %). As for girls, the most popular were volleyball (14.7 %), football (12.6 %), swimming (9.4 %) and gymnastics (8.9 %).

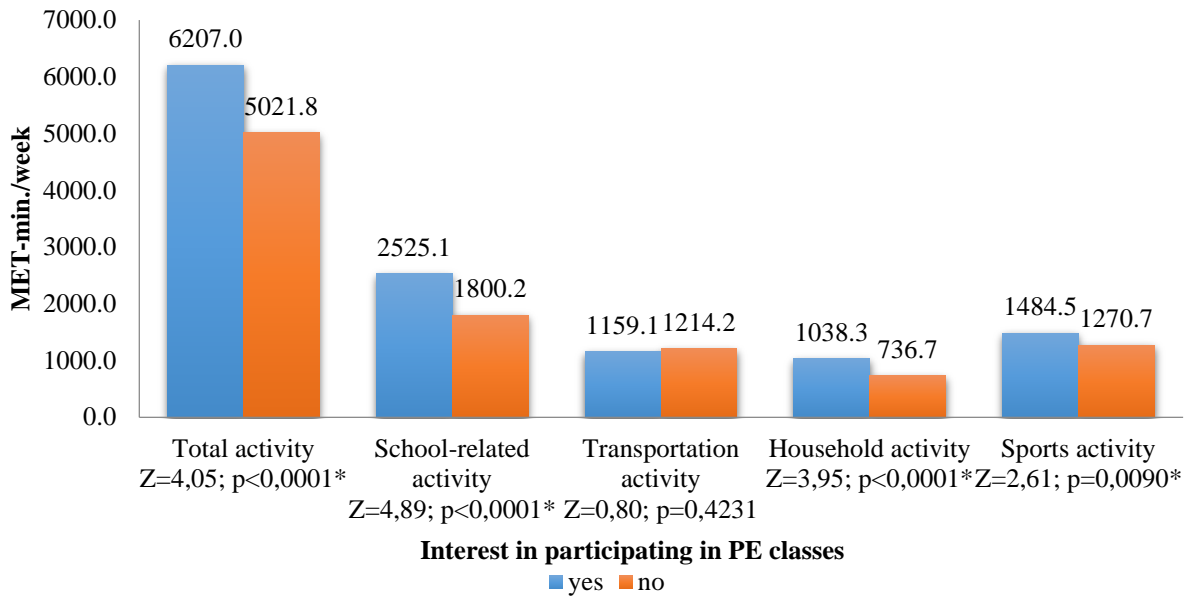
Students participating in PE classes demonstrate a higher level of total physical activity (5,960.5 MET) than those who do not take part in them (5,637,2 MET). Statistically significant differences were found, first of all, in the area of school- and home-related physical activities (Fig. 5).



* significant variation at $p < 0,05$

Figure 5. Physical activity and its domains with regard to participation in PE classes

A positive attitude to the PE lessons significantly impacts a higher overall physical activity and most of its domains, i.e. school and home-related activity as well as the one connected with doing sports (Fig. 6).



* significant variation at $p < 0,05$

Figure 6. Physical activity and its domains with regard to interest in participation in PE classes

Discussion

Monitoring physical activity of young people, as a component of health behaviours, becomes a necessity in the current efforts to maintain people's good health now and in the future. The analysis of the presented research findings of the youth from Lublin Province in Poland leads to a positive assessment of the young peoples' condition. 77.4 % of those who completed the IPAQ questionnaire demonstrate a high level of physical activity, with a total amount of 5,935 MET, which is much higher than that presented by other authors from different countries (Küdlacek, 2013; Cocca et al., 2014; Bergier B., Bergier J., & Wojtyła, 2012; Jurakić, Pedisić, & Andrijasević, 2009) and similar to the one visible in the Visegrad countries (Ács et al., 2016).

The authors realize that IPAQ research results may have an overestimation, which is why they were compared to the results of other studies using the same questionnaire.

The study has confirmed a higher level of physical activity in boys than girls (Küdlacek, 2013; Bergier B., Bergier J., & Wojtyła, 2012; Biernat, 2011; Jurakić, Pedisić, & Andrijasević, 2009; Cocca et al., 2014; Groffik, 2015).

The unfavourable picture of girls' physical activity shows that boys may receive more encouragement from their parents and society (Pelegrini et al., 2014). Girls also express anxiety about their unattractive look in sports outfits (Slater & Tiggemann, 2010). It seems, however, that the main problem of lower physical activity of girls is the offer of available physical activities which do not meet their expectations, including PE classes. This conclusion is evidenced by the present research, which shows that, in addition to traditional team games chosen by girls and boys, girls are more interested in swimming and gymnastics.

The research into all domains of physical activity has shown that the highest values of activity were visible in the domain of school-related activity, which was true both of the boys (2,611,7 MET) and girls (2,199.0 MET). Moreover, it has been shown that the efforts made by students during the day concerned mostly PE lessons (82.8 %), which is confirmed by other studies (Ács et al., 2016; Vasickova et al., 2013; Bergier B., Bergier J., & Wojtyła, 2012; Vanhelst et al., 2010).

A significant correlation between the higher level of physical activity and the participation in PE activities was found in those students who attended the classes in contrast to those who do not. The presented research results unequivocally indicate that proper implementation of PE activities in school may guarantee a higher physical activity in students. The presented positive image of a healthy lifestyle of school youth in the field of physical activity may be the outcome of two programmes introduced in Poland by the Ministry of Sport and Tourism, i.e. "Prevent exemptions from physical education" implemented in 2012, and "Physical education in class" in 2013-2016. Thus, it is worth

considering the measures applied in Poland aiming at improving physical activity in school youth in other countries.

Conclusions

The surveys conducted among school students in Poland aged 16-18 allow for formulating several conclusions and determining some recommendations.

1. Youth demonstrate a high level of total physical activity, most of which is school-related.
2. A vast majority of students (92 %) declare that they participate in PE classes and most of them like these classes.
3. The factors that significantly impact the level of physical activity are gender and age.
4. The differences in the physical activity in girls and their interests in other physical activities may indicate that greater diversity in the offer of what is done in PE classes and sports clubs is needed.

References

- Ács, P., Bergier, J., Salonna, F., Junger, J., Melczer, C., & Makai, A. (2016). Gender differences in physical activity among secondary school students in the Visegrad countries (V4). *Health Problems of Civilization*, 10 (3), 21-29. doi:10.5114/hpc.2016.61363 data dostępu 01.10.2017.
- Bergier, B., Bergier, J., & Wojtyła, A. (2012). Various aspects of physical activity among Lithuanian adolescents. *Annals of Agricultural and Environmental Medicine*, 19 (4), 775-779.
- Biernat, E. (2011). *Aktywność fizyczna mieszkańców Warszawy. Na przykładzie wybranych grup zawodowych* [Physical activity of Warsaw residents. On the example of selected professional groups. SGH Publishing House, Warsaw]. Warszawa: Oficyna Wydawnicza SGH.
- Booth, M. (2000). Assessment of physical activity: an international perspective. *Res. Q. Exerc. Sport*, 71, 114-120.
- Cocca, A., Liukkonen, J., Mayorga-Vega, D., & Viciano-Ramirez, J. (2014). Health-related physical activity levels in Spanish youth and young adults. *Perceptual & Motor Skills, Physical Development & Measurement*, 118, 1, 247-260.
- Groffik, D. (2015). *Struktura aktywności fizycznej młodzieży 15-17 letniej Górnego Śląska*. [Structure of physical activity of young people from 15-17 years of Upper Silesia]. Katowice: Akademia Wychowania Fizycznego w Katowicach.
- Jurakić, D., Pedisić, Ž., & Andrijasević, M. (2009). Physical Activity of Croatian Population: Cross-sectional Study Using International Physical Activity Questionnaire. *Croat Med J.*, 50, 165-73. doi:10.3325/cmj.2009.50.165
- Kretchmar, R. S. (2006). Ten more reasons for quality physical education. *Journal of Physical Education, Recreation & Dance*. 77, 9, 6-9.

- Küdlacek, M. (2013). Increase of the effectiveness of school PE classes through sport preferences survey: Contextual prediction of demanded sport activities. *Acta Univ., Palacki. Olomuc., Gymn.*, 43, 1, 42-48.
- Mazur, J. (2013). Zajęcia sedenteryjne. In: J. Mazur (Ed.). *Aktywność fizyczna młodzieży szkolnej w wieku 9-17 lat, aktualne wskaźniki, tendencje ich zmian oraz wybrane zewnętrzne i wewnętrzne uwarunkowania* (pp. 53-59) [Sedentary classes [In:] J. Mazur (ed.). Physical activity of school youth aged 9-17, current indicators, trends of their changes and selected external and internal conditions]. Warszawa: Instytut Matki i Dziecka.
- McKenzie, T. L., Marshall, S. J., Sallis, J. F., & Conway, T. L. (2000). Leisure-time physical activity in school environments: an observational study using SOPLAY. *Preventive Medicine*, 30, 70-77.
- Ministerstwo Sportu i Turystyki Rzeczypospolitej Polskiej. <http://www.msport.gov.pl/kampania/stop-zwolnieniom-z-wf> [Ministry of Sport and Tourism of the Republic of Poland. <http://www.msport.gov.pl/kampania/stop-zwolnieniom-z-wf>] accessed 05.01.2017.
- Paudel, S., Subedi, N., Bhandari, R., Bastola, R., Niroula, R., & Poudyal, A. K. (2014). Estimation of leisure time physical activity and sedentary behaviour among school adolescents in Nepal. *BMC Public Health*, 14-637. doi:10.1186/1471-2458-14-637
- Pelegrini, A., Silva, D. A. S, Claumann, G. S, Cardoso, T. E, Ferreira de Lima e Silva, J. M., & Petroski, E. L. (2014). Practice of walking, moderate and vigorous physical activity and associated factors in adolescents from a state capital of southern Brazil. *Rev Bras Cineantropom Desempenho Hum*, 17 (1), 11-20.
- Rangul, V., Holmen, T. L., Kurtze, N., Cuypers, K., & Midthjell, K. (2008). Reliability and validity of two frequently used self-administered physical activity questionnaires in adolescents. *BMC Med Res Methodol*, 8, 47-57.
- Slater, A., & Tiggemann, M. (2010). "Uncool to do sport": A focus group study of adolescent girls' reasons for withdrawing from physical activity. *Psychology of Sport and Exercise*, 11 (6), 619-626.
- Vanhelst, J., Theunynck, D., Gottrand, F., & Beghin, L. (2010). Reliability of the RT3 accelerometer for measurement of physical activity in adolescents. *Journal of Sports Sciences*, 28 (4), 375-379.
- Vasickova, J., Groffik, D., Frömel, K., Chmelik, F., & Wasowicz, W. (2013). Determining gender differences in adolescent physical activity levels using IPAQ long form and pedometers. *Annals of Agricultural and Environmental Medicine*, 20 (4), 749-755.
- WHO. Global Recommendations on Physical Activity for Health. http://www.who.int/dietphysicalactivity/factsheet_recommendations/en/index.html accessed 01.04.2016
- Wojnarowska, B. (2011). Potrzeba kształcenia nauczycieli w zakresie zagadnień biomedycznych i edukacji zdrowotnej [The need for teacher education in the field of biomedical issues and health education]. *Lider*, 9, 3-6.
- Zaza, S., Briss, P. A., & Harris, K. W. (2005). *The Guide to Community Preventive Services: What Works to Promote Health?* New York: Oxford University Press.

THE PROBLEMATICS OF SPORTS LAW IN LATVIA: CIVIL AND CRIMINAL LAW STATUTORY ACTS PERSPECTIVE

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Abstract. *The article shall be devoted to the problematics of Sports law in Latvia. Mainly authors shall be determining through the prism of civil and criminal law how does Sports law in Latvia looks like today, how it manifests itself and at what stage of development it allocates itself. The following chapters shall be observed: 1) Introduction: the origin of Sports Law in Latvia, 2) Sports Law through the prism of civil law; 3) Sports Law through the prism of criminal law; 4) Conclusions. The main problematics in question is whether there exists sports law in Latvia and what are the controversial issues in the national legislation regarding sports. The article is based on the analysis of legislature and relevant documents.*

Keywords: *Illegal actions in Sports, Sport in Latvia, Sports Law.*

Introduction: the origin of Sports Law in Latvia

Paragraph 11 of the Recommendation No. R (92) 13 of the Committee of Ministers to Member States of the European Sports Charter adopted by the Committee of Ministers on 24 September 1992 states as follows:

“11. Acknowledging that public authorities should develop reciprocal cooperation with the sports movement as the essential basis of sport, in order to promote the values and benefits of sport, and that in many European States, governmental action in sport is taken in order to be complementary to and support the work of this movement (subsidiarity).”

The member states of the European Union were given a freedom of action regarding how to implement the stated above general principles of co-operation and complementarity.

Alongside such European countries as Austria, Belgium, Finland, France, Spain, Portugal, Switzerland, Italy, Cyprus, Luxembourg (Charker, 1999) Latvia has a general law on sport - Sports Act (Latvian: Sporta likums). This law was passed by Parliament in October 2002, i.e., two years before officially entering the European Union, as a single document.

One would think that the existence of Sports Act indicates the presence of well thought-out sports legislation in Latvia, but authors suggest analysing the quality of this act and its relevance before asserting this fact.

Also a few words are to be said on the origins of Latvian sports, as the historical events that affected Latvia, greatly influenced the development of Latvian sports. Below authors shall list the major dates and events from the history of Latvian sports ascertained in the study provided by the Latvian Institute:

- before World War I, Riga was one of the main sports centres of the Russian Tsarist Empire, along with St. Petersburg, Moscow, Kiev and Revel (Tallinn);
- on December 18, 1911 the Baltic Olympic Committee was founded with an aim to co-ordinate its activities with the Russian Olympic Committee in selecting athletes from the Baltic provinces for the Olympic Games;
- on March 6, 1921, after Latvia declared its independency in 1918, the Provisional Union of Latvia's Sports Organizations was established in Riga. Its purpose was to co-ordinate the activities of Latvia's various sports organizations and promote the establishment of a unified system for sporting activities;
- the Ambassador of France in Latvia, Count de Martel, supplied the Latvian Olympic Committee with information about the Olympic Games in Paris in 1924. The Latvian Olympic Committee was recognized by the International Olympic Committee in year 1923;
- between the two World Wars Latvian sportsmen took part in seven Olympic Games: four Summer and three Winter Games, and many international competitions, while students participated in several World University Games. Latvian athletes won one silver (in Los-Angeles, 1932) and two bronze Olympic medals (in Berlin, 1936);
- from June 1941 until May 1945 Latvia was occupied by Nazi German forces, which in turn were replaced in 1945 by the Soviet regime. Incorporated into the USSR as one of the fifteen Soviet Socialist Republics, Latvia's sports system was reorganized according to the Soviet centralized model;
- in the late 1980's Gorbachov's "Perestroika" (Encyclopædia Britannica online, n.d.) relaxed some of the restraints on the republics. The first attempts to change Soviet regulations in Latvian sports took place in 1988, when the Sports Conference of Latvia unanimously voted for the restoration of the Latvian Olympic Committee and adopted resolutions on the democratization of the sports system at all levels. The Latvian Olympic Academy was founded on March 21, 1989;

- on May 4, 1990 the newly elected Supreme Council of the Latvian Soviet Socialist Republic, which included a majority of pro-independence deputies from the Popular Front of Latvia, adopted a declaration calling for the restoration of an independent Republic of Latvia. Moscow did not accept this declaration;
- the first meeting between the managers of the International Olympic Committee and the leaders of restored Olympic Committees of the three Baltic States took place in Lausanne in late autumn 1990. The Baltic representatives informed the International Olympic Committee about the restored Olympic Committees and their wish to participate in the next Olympic Games in Albertville in France. A negative answer was given by the International Olympic Committee on the grounds that these countries were still under the rule of the USSR;
- on August 21, 1991, as the USSR began to unravel, Latvia formally restored its legal independence;

After becoming an independent state Latvian sports trends and programs envisaged development in three directions:

1. Sports for All, including disabled and handicapped people,
2. Children/Youth Sports,
3. Elite/Top competition sports. (Latvian Institute, n.d.)

Up to this day these three directions are present in the Latvian sport policy and are being reflected in Sports Policy Guidelines for 2014-2020 (POLSIŠ, 2013), which is a policy planning document in the sports industry that determines the sports policy of the State for seven years.

The history of Latvian sports as well as the history of Latvian people was full of search of its true self and struggles for the independency, what of course has a reflection in Latvian legislative acts on sports and explains its possible imperfections.

Therefore, the aim of the paper is to determine through the prism of civil and criminal law how does Sports law in Latvia looks like today, how it manifests itself and at what stage of development it allocates itself.

Sports Law through the prism of civil law

In order to consider civil aspects of the sports law in Latvia two main types of the legislative acts are to be analysed, i.e., law and regulations of the Cabinet of Minister adopted on the basis of this law to support its functioning.

Sports Act framework

Latvian Sports Act was adopted by the parliament and proclaimed by Latvian president in year 2002 with a purpose pursuant to article 2: “to specify the general

and legal basis for sports organisation and development, mutual relationship of sports organisations, State and local government institutions and basic tasks in sports development, and the basis for the financing of sport, as well as the principles that shall be observed when taking part in the international sports movement.” It consists of 20 articles regulating only the general principles of functioning of the Latvian sports system and its subjects. Where subjects are deemed to be sport federations, sport teams, athletes, sport organizations, etc.

According to the article 1 (10) sport is defined as all types of individual or organized activities in order to maintain and improve physical and mental health, as well as to achieve success in sports competitions. For the comparison Federal Law “On Physical Culture and Sports in the Russian Federation” (Закон о физической культуре, 2007) of Latvian neighbour Russian Federation, divides sport into five types: sport, children and youth sport, mass sports, sport of high achievements and professional sport, and defines each of them separately. Also Code du Sport of French Republic at its Titre II: Sportifs (Code du sport, 2004) has two separate definitions of high-level sport and professional sport.

Under Article 3 of the Sports Act the following basic principles shall be observed in the field of sport:

1. the principle of equality, which provides that every person has a right to engage in sport;
2. the principle of fair play which determines that care shall be taken that the Olympic ideals and principles of ethics are observed, as well as dishonesty and the use of doping, physical and moral rudeness in sport is fought against in the educational, organisational and administrative work related to sport; and
3. the principle of safety which provides that sports events take place in a safe environment and are organised and conducted by qualified sports employees.

The realization of the principle of safety, mentioned above refers to the criminal aspects of Sports law.

Sports Act also regulates the following concepts:

- competence of state and municipal institutions
- competence of Latvian National Sports Council
- characteristics of sports organizations, i.e., sports federation, sports club, etc.
- competence of Latvian Olympic Committee
- allocation of financial resources for sport
- awarding of monetary prizes for outstanding achievements in sport
- organization of and participation in the international sport competitions
- rights and duties of athletes

- ban on manipulation of sports competitions
- definition of a professional athlete
- etc.

Only one article is devoted to almost every concept, whereas Sports Act does not cover such important elements of Sports law as: separate regulation for mass sport, professional sport and sport of high achievements, extra-judicial dispute resolution procedures, special “labour law” for sports contract, Paralympic sport, etc.

The very recent amendments were made in year 2016, when an article 15.1. on manipulation of sports competitions was added to Sports Act. Article 15.1. states that manipulation of sports competitions means any action aimed at an improper alteration of the course of a sports competition or making its result unpredictable. Such manipulation is prohibited and all the athletes, sports organizations, sports personnel and sports professionals are obliged to take all necessary actions to prevent such manipulation. The responsibility for the manipulation is provided in the article 212.1. of the Criminal Law of Republic of Latvia. This amendment is deemed to be the most urgent modification of Latvian Sports Act and shall be discussed in the chapter 3 of this research.

Nevertheless, authors suggest that regulation provided in the Sports Act is insufficient, not specific enough and does not answer the needs and tendencies of modern sport movement in Latvia. When comparing Latvian sports law regulation to the regulation and legal act on sports of other countries, e.g., France or Russia, the impression is that Latvian legislator’s aim, was only to provide the main guidelines and principles for the sports movement in Latvia.

Regulations of the Cabinet of Ministers on sport

Regulations of the Cabinet of Ministers are the primary sources of law in Latvia. The Cabinet of Ministers may issue legislation in the form of regulations (Latvian: noteikumi) in the following cases:

1. on the basis of an authorization laid down by statute;
2. to approve an international agreement or draft thereof, denounce an international agreement or suspend its operations, unless the Constitution or the law provides otherwise;
3. if necessary for the application of European Union legislative acts and if the issue in question has not been regulated by statute; these regulations may not impinge on the fundamental rights of private individuals (E-justice, 2016).

Below authors shall mention the regulations that were issued on the bases of Sports Act.

1. Regulation of the Cabinet of Ministers nr. 594 “The health care and the procedure of medical surveillance for the athletes and children with

increased physical activity” from September 6, 2016. According to the Sports Act the organization of such a procedure lies in the competence of the Ministry of Healthcare in collaboration with a Ministry of Education and Science, hence, National Sports Medicine Centre every year, before May 1 shall compile a report on the previous year about the status of the physical health of the athletes and children with increased physical activity and submit it to the Minister of Healthcare and Minister of Education and Science providing the proposals to improve the situation.

2. Regulation of the Cabinet of Ministers nr. 26 “Regulations on the procedure of granting money awards for the outstanding achievements in sport, and the amount of the prize money” from January 3, 2012. Article 3 states that money award is granted for the achievements attained in the official international sports competitions, that are included in the relevant international sports federation competitions calendar, if this sports federation is recognized by the International Olympic Committee or the International Paralympic Committee, or is a member of the International Sports Federations Association (SportAccord).
3. Regulation of the Cabinet of Ministers nr. 820 “Doping control procedures” from October 19, 2011. This Regulation prescribes the doping control procedures and regulates the competence of the institutions involved in doping control and their operation.
4. Regulation of the Cabinet of Ministers nr. 77 “Regulations regarding the procedures for the certification of sports specialists and the requirements specified for a sports specialist” adopted January 26, 2010. This Regulation prescribes the procedures for the certification of sports specialists and the requirements specified for a sports specialist in order to acquire the right to work in the field of sports; and the fee for the certification of a sports specialist.
5. Regulation of the Cabinet of Ministers nr. 76 “Regulations on the information content included in the sports facilities register and its updating procedures”. This Regulation was adopted in January 26, 2010 on the bases of the Article 12 of the Sports Act, that prescribes that “the information regarding sports facilities present in the State shall be compiled in the register of sports facilities. The register of national sports facilities shall be a part of the register of sports facilities. The register of sports facilities shall be kept by the Ministry of Education and Science. The content of information to be included in the register of sports facilities and the procedures for updating thereof shall be determined by the Cabinet of Ministers”.

6. Regulation of the Cabinet of Ministers nr. 1396 “Procedures for the recognition of sports federations and the control of the recognised sports federations” from December 8, 2009. This Regulation prescribes the procedures for the recognition of sports federations; the procedures for the control of the activity in the field of sports of the recognised sports federations; and the content of the information to be included in the Register of Sports Federations and the procedures for updating thereof.
7. Regulation of the Cabinet of Ministers nr. 819 “Procedures for the state financial support to the national team preparing for and participating in the European and world championships and Olympic Games qualifying tournaments and finals” adopted on July 28, 2009. According to its Article 2, regulation’s aim is to ensure the financial support to national team in preparation for sports games and participating in competitions in order to promote high level of achievements and results.
8. Regulation of the Cabinet of Ministers nr. 422 “Regulations regarding the procedures by which information shall be indicated regarding the co-financing of sport events from the state budget, and the content of the information referred to” from May 12, 2009. A natural person or legal person who receives co-financing from the State budget for the implementation of a sports event, shall use the following logo



in all mass media and publicity (for example, information stand, information board, poster, printed materials (including brochures, booklets, conference and seminar materials), Internet website, audio-visual material (including digital video discs, compact discs, cassettes and video films)).

9. Regulation of the Cabinet of Ministers nr. 422 “By-law of the Latvian National Sports Council” from July 29, 2003. The Latvian National Sports Council is a public consultative institution which participates in the development of the State sports policy, facilitates sports development and co-operation in the field of sports, as well as the taking of decisions regarding matters related to sports. In accordance with the Article 3 of the Regulation the Council shall have the following rights: to require and to receive information necessary for the work of the Council from State and local government institutions, sports federations and sports clubs; to establish advisory commissions and working

groups and to invite experts for the analysing and solving of matters related to sport.

Sports Law through the prism of criminal law

In order to get a more complete and clear idea of the sports law, there is a need of accurate and consistent comparison of its features as an integrated branch of the Latvian law to those of its other branches. The authors believe that the sports law as the newest complex branch in the Latvian legal system is based on the norms of constitutional, administrative, labour, civil, criminal, international, procedural, etc. branches of law. The main area regulated by the sports law is relationships developing during sports activities.

In this chapter, the authors consider the main current issues of the relationship between the sports law and the criminal law in the Republic of Latvia.

The criminal law regulates the relations arising from the commission of a crime; it is characterized by an imperative method and enforcement actions, as well as by the punitive nature of responsibility. The main function of the criminal law is protective; particularly, it protects relationships in the field of physical culture and sports.

There are many objects that are subject to public protection in sports, such as life and health of athletes, the procedure for holding professional sports competitions, social relations that ensure normal activity of the officials or organization's apparatus functioning in the sports sector, property matters between subjects of sports legal relations, human security (protection of the equal rights of citizens regardless of race, colour, sex, language, religion, political or other opinions, national or social origin, property status, birth and other circumstances), etc.

The Criminal Law of the Republic of Latvia (hereinafter referred to as the CL) stipulates criminal liability for a number of offenses that may be related to the organization and conduct of sports competitions and activities, namely (Krimināllikums, 1998):

- Criminal offences endangering life or health of a person (Chapters 12 and 13 of the CL)
- Criminal offences against fundamental rights and freedoms of a person (Chapter 14 of the CL)
- Criminal offences against property (Chapter 18 of the CL)
- Criminal offences of an economic nature (Chapter 19 of the CL). Among the criminal activities of this group, the authors deem necessary to identify separately such unlawful act as felonious manipulations during sports competitions and consider the amendments to the

Criminal Law on Manipulations of Sports Competitions (Article 212.1 of the CL) that came into effect in 2016 (see in Chapter 3.1 below).

- Criminal offences against general safety and public order (Chapter 20 of the CL)
- Criminal offences committed by the government officials (Chapter 24 of the CL)

Amendments to the Criminal Law and Sports Act

Amendments on the manipulation of sports competitions were introduced to the Sports Act and Criminal Law of the Republic of Latvia and entered into force on March 1, 2016. These amendments are an unprecedented case in the Latvian legislation and innovation in general.

Sports law in Latvia, as a specialized and integral area of law, is at the very beginning of its development. The above amendments were adopted in a comprehensive manner together with the amendments to the Sports Act. However, according to the authors, the amendments were adopted hastily without considering some aspects.

In the summer of 2015, the Ministry of Justice in cooperation with the Ministry of Education and Department of Sport, Latvian Olympic Committee, as well as with the assistance of the Football Federation and other professionals in the sports industry developed amendments to the Sports Act and Criminal Law. This work was founded on the provisions of the Council of Europe Convention on the Manipulation of Sports Competitions. Nevertheless, Latvia has not signed this document yet.

According to Article 3, paragraph 4 of the Europe Convention on the Manipulation of Sports Competitions (Council of Europe, 2014): “Manipulation of sports competitions” means an intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sports competition in order to remove all or part of the unpredictable nature of the aforementioned sports competition with a view to obtaining an undue advantage for oneself or for others.

As it can be seen from the above definition, the manipulation of sports competitions is both an act and omission. Nevertheless, omission is not included into article 15.1 of the Sports Act (Sporta likums, 2002). In accordance with article 15 (Sporta likums, 2002), manipulation of sports competitions means any action aimed at an improper alteration of the course of a sports competition or making its result unpredictable.

The Criminal Law of the Republic of Latvia has no definition for “omission”, in contrast to some foreign countries. However, there are many definitions of omission in criminal and legal literature of Latvian scholars.

The prevalence of sports crimes committed by omission is small, but their social danger may be greater if compared to an infringement in the form of action.

For example, omission by a sport federation (mostly in team sports), when a fixed match is uncovered (for example, obligation to carry out an internal investigation of the forfeit), will incur both financial losses for the industry in general, and for individuals in particular, not to mention the moral aspect of this issue, for one of the main principles of the European sports law is honesty and transparency of the European sports competitions.

Unfortunately, criminal science of the Republic of Latvia still has no common approach to criminal liability for omission, which is a serious problem and could be a reason to exclude the term “omission” from the definition in Article 15.1 of the Sports Act.

Sports and Illegal actions

There are several reasons why professional sports, as well as entertainment industry in general, are a subject of interest for many people. Firstly, it is a pleasant leisure-time. Over the last century, stadiums, sport and concert halls have become one of the most popular places to visit. Secondly, these events are a source of considerable income for a large number of individuals and companies. This income is generated by advertising sport events and competitions, organizing various lotteries, activities of bookmakers and betting offices, and TV broadcasting, as well as by professional sport activities and events themselves.

However, despite the harsh sanctions in many countries of the world, the thirst for wealth and fame is often much stronger than moral ideals and fear of punishment. Moreover, the manipulation of sports competitions is not, unfortunately, the only one illegal action in professional sports.

So far, many criminologists and experts in Sports law believe that there are the following types of illegal acts in professional sports:

1. Criminality among athletes.
2. Illegal money laundering.
3. Organized crime and illegal betting.
4. Illegal influence on the results of sports competitions.
5. Use of doping.
6. Criminal fanaticism and extremism in sports.

Qualifying a criminal act is followed by a competition of the legal acts of national and international public organizations (federations, associations, etc.), since such acts, as a rule, are also the torts specified by the statutes, disciplinary codes, regulations, etc. of these organizations.

For example, according to Chapter 2 “Special Part” of the Disciplinary Regulations of the Latvian Football Federation (LFF) (Latvian: Latvijas Futbola federācija) (Latvijas Futbola Federācija, 2016), the following punishable acts can be qualified as crimes:

- Misbehaviour of fans (Article 2.1.), namely, acts of force towards other individuals, destruction of the property at sports facilities, fire safety violation, abuse, etc. (Article 2.4.)
- Documents forgery and falsification (Article 2.8.)

For the commission of these acts, the players, officials and spectators are subject to the following disciplinary and sports measures provided for the LFF Disciplinary Regulations (Latvijas Futbola Federācija, 2016):

- Warning;
- Fine;
- Disqualification;
- Restricted access to changing rooms, technical zones and press conferences;
- Restricted access to the stadium;
- Prohibited participation in any kind of soccer-related activities;
- Deprivation of awards;
- Prohibited transfer;
- Holding games without spectators;
- Holding games on neutral territory;
- Prohibited registration of new players;
- Game result cancellation;
- Expulsion from competitions;
- Conferred defeat;
- Points cancellation;
- Transfer to a lower league.

According to the LFF regulations, as well as to the similar regulations of the International Federation of Football Associations (FIFA) (Org.: Fédération Internationale de Football Association) and the Union of European Football Associations (UEFA), any disputes between FIFA, its confederations, members, leagues, clubs, players and officials are subject to the general jurisdiction of the football associations bodies. No appeal to ordinary courts is allowed. The acts and offences mentioned above constitute public torts that cannot be attributed to the legal category of "dispute". The legal documents of the football associations contain no direct prohibition on the application of criminal liability measures by national jurisdictions.

The possibility and necessity of bringing an individual to criminal responsibility in accordance with the CL are never conditioned by the presence or absence of any violation of sports discipline, or any sports disciplinary process being conducted (including those conducted by a public organization), or any bringing to sports disciplinary responsibility. Therefore, the committer of an act constituting both crime and sports disciplinary offence component, shall be

brought to criminal responsibility (in accordance with the CL) and to sports disciplinary responsibility (in accordance with the LFF/UEFA/FIFA Disciplinary Regulations). In such a case, no sanctions for bringing the perpetrator to criminal liability shall be imposed by sports organizations.

Such practice is supported by a strong international background of parallel conduct of criminal and sports disciplinary trials without any sanctions from FIFA, UEFA or national sports organizations.

The problem of prevention of illegal actions in Latvian professional sports became topical quite recently. For example, football events in 2014 were the reason to change criminal and sport laws. It was at the end of the year 2014 when an investigation was initiated regarding manipulations with the results of some matches, involving two former representatives of the football club “Daugava” from Daugavpils. In mid-January 2017, the State Police of Latvia closed the investigation and referred the case to the public prosecutor in order to initiate a criminal process against two individuals, i.e. two men born in 1966 in 1983.

Moreover, public peace disturbance by football fans (it should be noted that over the past decade the actions contrary to the Latvian law are mostly taken by fans of the visiting teams) and illegal use of doping by athletes are issues of current interest in Latvia as well. For example, 2014 Anti-Doping Rule Violations (ADRVs) Report (WADA, 2016) was published at the beginning of the year 2016, and its data shows that 6 Latvian athletes were caught illegally using doping (basketball – 3 athletes, biathlon – 1 athlete, hockey – 2 athletes).

However, if each type of the above mentioned illegal actions in professional sports gets considered, the Criminal Law of the Republic of Latvia and the Sports Act might be amended for several times.

Conclusion

Sports law in Latvia is a very young branch of law that situates itself at the very beginning of its evolution because of the non-sequential progress caused by the aspects of the historical development of Republic of Latvia.

Authors suggest that Sports legislation provided in the Sports Act is insufficient, not specific enough and does not answer the needs and tendencies of modern sport movement in Latvia. If to compare Latvian Sports Act to the legal acts on sports of other countries, e.g., France or Russia, the impression is that Latvian legislator’s aim was only to provide the main guidelines and principles for the sports movement in Latvia specifying the procedures with the regulations of the executive power of the state.

Even so, Sports law in Latvia is an integral area of law, and the current issues affect:

1. Constitutional law – constitutional structure of the state and social system, fundamental principles of the individual.
2. Civil law – property relations and associated personal non-property relations in the field of sports law.
3. Labour law – labour of workers in the field of physical culture and sports, first and foremost professional athletes.
4. International law – international agreements. International economic relations: organization and holding international sports competitions; international cooperation and foreign investments in the field of sports; international movement of labour resources in the field of sports; establishment of joint ventures to produce goods for sports and tourism.
5. Criminal law – Criminality among athletes; illegal money laundering; organized crime and illegal betting; illegal influence on the results of sports competitions; use of doping; criminal fanaticism and extremism in sports.
6. Administrative law – public administration, public associations, local governments and other non-state entities related to sports and sports activities.

As is known, sports industry is a self-regulated industry and most of the above issues are settled at the level of national federations. Nevertheless, the experience of many countries shows that financial and security issues should be resolved at the national level.

For example, the criminal legislation in United States of America provides liability for bribing persons who participate in sports competitions, including referees, coaches, time keepers, etc. In turn, according to the Kyrgyzstan Criminal Code, bribery of athletes, referees, coaches, team leaders, and other participants or organizers of professional sport competitions, and also organizers or jurymen of profit-making entertainment competitions, shall be punishable by a fine in the amount of 300 to 500 minimum monthly wages.

Part 1 of the Criminal Code of the Republic of Belarus provides liability for giving money, securities or other assets, or provision of services of property nature, to athlete, referee, coach, team leader or organizer of sport competitions, organizer or jury member of a profit-making competition in exchange for influencing the results of competitions or receiving the above items to influence the competitions. The second part establishes criminal liability for the same actions committed repeatedly. As opposed to the Criminal Law and Sports Act of the Republic of Latvia, the differences are not only in a more expanded content of the legal provision, but also in the form of sanctions. For example, the Criminal Law of the Republic of Latvia provides such punishments as imprisonment,

forced labour and fine, while the Criminal Code of the Republic of Belarus provides punishments not only in the form of a fine, forced labour, or imprisonment, but also depriving the right to occupy certain positions or be engaged in certain activities.

Experience in studying the criminal legislation of the above and other countries, having different level of socio-economic development, shows that the issue of prohibition to manipulate sports competitions is differently treated in these countries. However, they have unity of views on the fact that these actions must be punished.

In the criminal legislation of most developed countries (United States of America, Germany, France, Spain, etc.) the issues of causing harm upon holding sports competitions are not considered as a distinct circumstance that exclude criminality of an action. However, bodily harm caused by violation of rules is considered to be illegal and may lead to criminal liability.

On the basis of the stated above, the authors suggest that the Latvian scientific world in cooperation with the legislators will have to resolve a number of issues regarding settlement of various relations in the field of sports industry. It should be done through the amendments of Sports Act, providing for regulations on professional sport, sport of high-achievements, extra-judicial dispute resolution, etc. Special labor law should be written for the convenience of the conclusion of the professional sport contracts. As well as the illegal actions in sports should be punished accordingly by the means of Criminal legislation.

References

- Anti-Doping Rule Violations (ADRVs) Report 2014* (2016). Retrieved from <https://www.wada-ama.org/sites/default/files/resources/files/wada-2014-adrv-report-en.pdf>
- Charker, A. N. (1999). *Study on National Sports Legislation in Europe*. Strasbourg: Council of Europe Publishing.
- Code du sport* (2004). Retrieved from <https://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000006071318>
- Council of Europe Convention on the Manipulation of Sports Competitions* (2014). Retrieved from <https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/09000016801cdd7e>
- Krimināllikums (1998). Rīga: *Latvijas Vēstnesis*, 199/200 (1260/1261)
- Latvijas Futbola Federācijas Disciplinārais Reglaments* (2016). Retrieved from http://www.lff.lv/webroot/file/uploads/files/dokumenti/Reglamenti/2017/2017_Disciplinārais_reglaments.pdf
- Perestroika. Soviet government policy *In Encyclopædia Britannica online*. Retrieved from: <https://www.britannica.com/topic/perestroika-Soviet-government-policy>
- The Latvian Institute*. Retrieved from <http://www.li.lv/en/>
- The legal system in Latvia* (2016). Retrieved from https://e-justice.europa.eu/content_member_state_law-6-lv-en.do?init=true&member=1
- Sporta likums (2002). Rīga: *Latvijas Vēstnesis*, 165 (2740).

Sporta politikas pamatnostādnes 2014.-2020. gadam. (2013). *POLSYS: Politikas Plānošanas Dokumentu datubāze*. Retrieved from <http://polsis.mk.gov.lv/documents/4599>

Федеральный закон «О физической культуре и спорте в Российской Федерации» (2007). Retrieved from <http://pravo.gov.ru/proxy/ips/?docbody=&nd=102118584>

MĀKSLA UN DIZAINS
ART AND DESIGN

THE FIGURE OF SHAMAN AS THE POTENTIAL MODEL OF LEADER IN MUSIC AND MUSICAL EDUCATION

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Abstract. Shaman is an individual, gifted with plenty of unusual skills - the medium between two worlds, human and the external one. Being a leader and healer, shaman is master for the younger entrants, leading them through the difficult initiation process and preparing them to independent work on their potential in the future. With time shamanism became a sort of the cultural model associated with pop-culture: a path of the artistic and spiritual transformation, a form of opposition for excluded communities, a type of common experience of art and a prototype of the figure of leader. The consciousness of the existence of this kind of artistic and psychological model and the possibility of its use in art could be the key element in young artist's music educational process, based on the intimate relation between the student and the master, especially in jazz music genre. In this context extremely important is informal and non-formal education - lasting for the whole life, it allows the artist to develop their individual personality and sensitivity on every level of existence. In this perspective the figure of shaman - first entrant, later leader - could be a valuable and useful educational model.

Keywords: lifelong learning, informal and non-formal music education, music and spirituality, shamanism, the figure of shaman, jazz music and education, pop-culture, jazz, sociomusicology.

Introduction

Speaking about jazz in the 60s there used to be a metaphor that jazz (such as funk, grunge or rock) is a „way of living”, being related to every level of human existence. Artists were creating specific communities with the independent, inner organizational structure. At the time the educational process was based on the model of self-directed learning, collective informal learning or it was a sort of informal educational process related with the relationship between the master and the student. The formal, institutionalized education was only a further part of the learning process. Furthermore, it could be helpless and even disturbing... Focusing on the process of „learning” and informal education (according to Jarvis, Livingston, Eco) and turning to the phenomenon of shamanism and its relation to jazz music (insufficiently analyzed in the literature) I would like to present the analogy of these two cultural areas, which allows - in my opinion - to create the model of shaman - understood as the potential model of leader and

performer. Its use in music education would, in my point of view, contribute to more effective and comprehensive development of individual.

Musical education, learning and shamanism: around concept

The phenomenon of education, just like the phenomenon of shamanism, brings a lot of difficulties, because of its amorphism and the lack of precise semantic boundary lines, allowing one to put both of these terms in a lot of semantic contexts. Depending on interpretation education could be the conscious or the unconscious activity - planned or incidental, institutionalised or individual, but most of all a kind of pervasive. The attempt to define the category of education in main discourse is usually brought to two concepts: the „**teaching**” and especially the „**learning**” process, which - taking many forms and determined by cultural, sociological, personal and biographical factors - becomes the very important realm of exploration for researchers. However, not every process of learning is considered education. Furthermore, when the figure of teacher is absolutely needed in the process of teaching, it is not necessary in the process of learning. Learning could be a very individualized, inner-manoeuvrability and intentional process - previously planned and directed to achieve certain results and skills. According to Peter Jarvis (Jarvis, 1995), education could be defined as the intentional, planned and well-organized process of learning, which - including the ability of understanding, connected with the consciousness and unconsciousness - is a typical human activity (according to Wittgenstein): steady, leading to universal transformation of the learning person through the wide experience on various areas of social activity and permanent modifications in one's emotional, physical and cognitive sphere (Muszyński, 2014).

In this point it is justified and necessary to mention the concept of Penelope Peterson, who presents the phenomenon of education in four basic elements, such as: the well-organized content (which could be so-called „study programme”), methods (by means of which student gains knowledge), the person taking the lessons in a very precise system of learning and previously stated aims and results that student is supposed to achieve. Much like Jarvis, but in more narrow context, Peterson notices how important the planned learning process is. The author emphasises that the consequence of this specific process ought to be student's awareness of aims, methods and content one uses and new skills acquisition. These new abilities, according to American author, ought to be transmitted by the outsider - the teacher, the master or the leader - in the appropriate way.

However, as learning is the individual and unitary process (it could be spontaneous and intuitive as well), education is strongly situated in the social context, being based on the relationship between the student and the outside world one lives in. This statement bring us to the reflection on the sociocultural roots of

the phenomenon of learning process, that reaches back to ancient cultures being connected with individual and collective experiences (Przybylska, 2014). Speaking about education, it is necessary to emphasize that **learning process** (in the context of Jarvis and Peterson) is well known from the centuries, being deeply connected with the phenomenon of culture understood as the set of organized and schematic answers to the material and sociological condition of human life, which creates another set of traditions, rules, rituals, models and ideas that are heritated from the past and collectively re-worked by every generation. According to Jonathan Gottfried Herder (Ibidem.), the process of individualization is a part of the culture, which is a dynamic and transformative phenomenon. Self-learning has always been and still is a sort of sociological process determined by life experience and one's social environment as well. Culture and education are strongly related to each other. In the various forms of learning and teaching the condition of the reality is reflected - peoples beliefs, ideas, concerns, models' and traditions' change, ways of communication, personal relations and various forms of collective unconsciousness.

It could be said that the central point of education is the figure of student-entrant, who is supposed to achieve certain abilities through the process of learning with supervisor or with the self-directed learning or collective informal learning, that David Livingstone is writing about (Livingstone, 2001). The author divides education into three types, such as **formal**, **non-formal** and **informal education**. At the same time Livingstone allows one to create the area of learning where self-directed learning is taking the form of informal education - planned but not enforced and obligated way of student's individual self-development process, monitored by the supervisor. This type of intentional self-learning is very important in musical education as well, creating the new perspectives for self-development, especially in the area of individualized and cultural determined jazz music, that is the main axis of this article.

Livingstone seems to presents the perfect area for the musical education, especially jazz music education and the learning process of artist - a performer, musical virtuoso and aware leader. However, speaking about musical education, it is important to notice that classical music education is mostly organized in formal (institutionalized process of studying music with the master-teacher in relation to official study programme) and non-formal education (private lessons, scholars or workshops, supervised by master-teacher in relation to official study programme etc.). When it comes to jazz music education and the artists connected with popular music scene the learning process looks differently. Formal and non-formal forms of education are not satisfying enough - based on the classical and European educational tradition and devided of sociocultural context of the genre they might be even damaging. Speaking about jazz music we need to remember that jazz was born and it was evolving in the area of crisis and racial and social

tension. According to many artists, this context is the key element in this music even now. Furthermore, analyzing the phenomenon of musical education, therefore the process of learning and teaching, we need to take into account that the main aim in this area is development of the specific potential and extraordinary abilities of the individual in order to release one's personality and sensitivity and give one the precise methods that would be helpful in self-directed development in the future.

Here comes the question if there are any other alternative ways and models of developing and shaping the figure of individual and of an artist, that are different from the formal and non-formal education? In brief, isn't it the ancient tradition where the process of learning, including the universal transformation of human being on every level of the existence (spiritual, emotional, physical, spiritual) has left us some useful solutions - the individual and the collective one, based on the relationship between the master and the learner? Maybe it would be helpful to analyze some of the artists' practices and concepts, therefore it will be possible to notice a new (however well-known for the centuries) path to constitute artist's identity as the performer and the leader? The artist, who could become a master for one's band and audience as well, showing up cultural roots of certain genre of music and helping to understand it better. This actually seems to be the area where ancient traditions and practices, so-called **shamanism**, had a chance (and still have) to combine with pop-culture and be transferred into the area of art, becoming a path that allows one to reach the individual voice and identity, and creating something like the cultural model of shaman-performer and shaman-teacher.

The figure of shaman and pop-culture: in the area of reconstruction and reinterpretation of the model

Similar to the term of education, the phenomenon of so-called **shamanism** - in main literature defying usually religious and magical practices of Siberian and North American tribes - brings a lot of difficulties as well, because of the variety of its interpretations. Heterogeneous, various, rooted in certain folklore it co-exists with different forms of religion and magic, connected with trans and ecstasy, such as: syncretic religions or Tibetan Buddhism. It is said - according to Andrzej Szyjewski - that the fundament of shamanism is a specific religious experience so-called trans, ecstasy, visitation or shamanic state of consciousness, that defines a states of prophet's afflatus, visions, possessions and mediumism and that is related to the particular practices and behaviours, such as: dance, meditation or repeating mantra (Szyjewski, 2005). The aim of the shamanic magical religious practices is to communicate with the external world, crossing the visible dimension – with the woof spirits, ancestors and deities – and to create

the spiritual bond acting for the community, not only for personal salvation. The key figure, which „experience” all these altered states of consciousness is shaman - the master of ecstasy (Eliade, 2011) - whose main attributes are handmaded shamanic drum and shamanic outfit wealthy decorated (different for every tribe and culture).

Shaman is one of the most important figures, that takes a huge role in a social and spiritual life of the community, being the healer, the medium between the human and the external world, the messenger of the ancestors whose souls one leads to the other world. Shaman is the individual gifted with the special skills and the abilities one cannot resist and reject; sometimes considered the incarnation of previous shaman or one of the ancestors. Very often the function of shaman comes together with the role of hungan, magician, the head of the community, but the predisposition to trans and controlled states of ecstasy makes one really extraordinary. Furthermore, shaman's aim is to contact with the world of gods and ancestors and serve the community in order to protect and unify its members (Ibidem.).

What is the most interesting, shaman is going through the spiritual path to one's destiny from the state so-called shamanic illness (recognition of the shamanic gift) through the traditional process of initiation and shamanic training, supervised by other experienced and respected shaman, who helps the entrant in developing one's potential and „power” and getting new skills and abilities that would lead one to the self-directed shamanic practice and status of leader. Shamanic state might be the part of the family heritage or the individual life choice (just like in North American tribes), therefore the time of initiation and training becomes the form of self-directed learning and searching for a master. Sometimes young entrant is trained by elder shaman in the group of other young learners (f.e. in tribes of Caribbians) and taxing with the series of traditional rituals. In this perspective it might be said that the future shaman is included in the organized and reworked with traditional system, learning shamanic songs, structures of the rituals, ancient techniques of ecstasy and techniques of building and playing on the drum. Analyzing the works of famous researchers such as: Eliade, Campbell, Deren, Pentikainen or Szyjewski) it is obvious that shamanic techniques of ecstasy and trans are present in nearly every part of the world: in Asia, Tibet, Haiti and in Africa, that is very meaningful in relation to jazz music. According to Włodzimierz Szturc (Szturc, 2014), who defines shaman as the very first actor and performer, we should wonder if the figure of shaman was not a prototype of the spiritual leader - the teacher who created the first methods and techniques providing the learner with organized and planned system of education, transforming the individual on every possible level. The process of learning seems to be the specific combination of self-directed learning and informal education: the entrant is individually searching for the master, who - becoming one's

supervisor and teacher - leads one through the process of initiation into the world of shamanic craft.

The huge variety of magical and religious practices brings a lot of definitions of the term of shamanism, however the most flexible one is presented by Piers Vitebsky, who understands shamanism as a form of a not-institutionalised spirituality free from dogmas that leaves a space for the individual creativity (Vitebsky, 1996).

According to Vitebsky's concept it is possible to consider shamanism in the perspective of the cultural model, that is in-written in the collective unconsciousness, which - being a cultural and human heritage - was transformed with time and transferred into pop-culture and area of art, inspiring some artists. Therefore, the figure of shaman could be understood in the categories of Jung's archetype and - just like Anima, Animus or Shadow archetypes - it has its own representation: the certain image, the description recognizable for everyone intuitively (Jung, 1993). Considering the figure of shaman in these categories, the transposition of the shamanic image and shamanic ritual structures by the performers into area of art seems to be very possible. One of the example could be Jay Kay (the leader of Jamiroquai), whose fantastic, indian hat inspired by Irokee culture and use of polirhythmic funk structures taken from the rythms of West African rituals and South American *clave* rythm, made him strongly recognizable. The next example might be rock guitar player, Slash, whose image (dark glasses, cigarette and high, black cylinder) is definitely inspired by the figure of Haitian *loa* - Baron Samedi, just like the image of Miles Davis (especially in the 70s).

However, the strongest inspiration could be noticed among Afro American jazz artists in the 60s and the 70s, for whom shamanism become a path of the spiritual transformation and the form of constituting the collective identity of the race, a kind of exemplification of the „back to the roots” movement. We need to remember that jazz was born in the area of crisis and racial conflict. Connected with the category of community, the history of slavery and colonisation and later, with racial segregation in the USA - considered by Black American people as the outcome of slavery – jazz, by the evolution of its musical language, has always been showing up the air of the reality, starting from *negro spirituals*, through „aggressive” and „hot” *be-bop* of the 40s to *new black music* in the 60's, with the great artist such as Miles Davis, John Coltrane, Theleoniou Monk, Herbie Hancock, Ornette Coleman or Wayne Shorter. Therefore, in the 60s artist are searching for new forms of expression, which might be a next step in the evolution of jazz musical language. On the one hand they are fascinated by new technologies, on the other hand they try to find the way to make jazz another voice of racial heritage and dignity in the sociocultural discourse. Jazz starts to be the voice of the revolution leaded by Martin Luther King or Malcolm X.

The solution turns out to be the return to the multicultural and syncretic roots of jazz music and bringing back its fundamental function of integrating the discriminated community, for example slaves' *negro spirituals* and *work songs* based on the collective participation or, mentioned by Andrzej Schmidt (Schmidt, 1988) dynamic voodoo rituals, frightening colonizers, that took place on plantations and New Orleans's Congo Square.

It is needed to emphasise that in the 60s there was a time of cultural change and deconstruction of modern models and worldview. In the work from the 1962 Umberto Eco says that modern art is based on the category of disorder - the positive and „prolific” disorder, that is the opposition of the traditional order, that the modern man of the West used to identify with the objective world structure. Nowadays, when this category was deconstructed because of the evolution of historical dialectics, methodical doubt and variable expository models, the only thing that is left for art is to accept the size of it and try to form it into something. The concept of „open structure” - understood by Umberto Eco as the open structure, dynamic and mobile, synthesizes the fundamental change in artists' way of thinking: art, culture and science are not linear and evolutionary anymore, being the processing of postmodern concept of the, „rhizome”. This change of art's conceptualization strongly affects jazz artists' works: (1) music starts to be composed differently than in the past, (2) improvisation takes the main role, being the equivalent of artistic individuality, (3) past tonal system is depleted. It could be said that artists, searching for a different forms of expression, are trying to revitalize jazz musical language and start from the „zero point”. All the efforts are concentrated on individual potential development, in opposition to mainstream system. This kind of openness to new musical and performing concepts allows artist to express one's non-musical ideas in the act of organizing the musical material. This way of thinking is presented by Miles Davis and John Coltrane., whose experiments are an attempt to transfer ancient, ethnic (mainly African and Native American) shamanic structures and figures into musical material and jazz live performance.

Very interesting is the case of John Coltrane who is trying to transfer the figure of shaman and shamanic seance (Ascending and Descending, magical flight etc.) to his personal performing practices and the working process with the band (classic jazz quartet). The instrument becomes the shamans voice and the body (connecting the external world and the community), while the band is taking the role of the shamanic drum. Trane's quartet (or quintet) becomes the exemplification of the figure of shaman - the messenger of the external world of spirits and dieties; the live performance starts to be a collective quasi-religious experience of sacrum, that musician was talking about in many interviews, considering himself the leader and healer (DeVito, 2017).

The very similar concept of collective work could be noticed in Miles Davis's practices, who turns to technology and ethnic spirituality at the same time in the late 60s and the 70s (best example: *Bitches Brew*, 1970). The trumpeter is experimenting with trans rhythms, polirhythmic structures (strongly inspired by voodoo musical tradition and Yoruba rituals) overtaking the models of open structure and collective improvisation, that he tries to work out with his band. Analyzing Miles's works and biography the Haitian possessive cult voodoo influences and inspires him a lot these days. It could be said that Davis starts to transfer the structure of voodoo ritual into the musical material (re-structuralization of the songs, incorporating Nikolay Slonimsky's tonal system etc.). One can see that he uses the image of hungan as well - live performances start to be a sort of ritual, led by the musician, a form of collective experience. Analogical shamanic inspirations could be found in work of two pianists: Keith Jarrett's work (G. Gurdzjew's philosophy) or Herbie Hancock and his band Mwandishi when the concert used to be a spiritual seance connected with chanting and collective meditation while playing (Hancock, 2015).

Certainly, it is possible to find more examples of this kind of artistic practices. However the consciousness of existing this kind of practices is not common, therefore the influence of the „shamanic” model on young students work is minimum. Finally, the most important thing in the examples mentioned above is the fact, that this kind of model could be very helpful on a lot of levels: artist are re-working it again, creating their own artistic path of self-development in the performative, social and individual levels.

What is interesting, the consequence of this kind of perspective of jazz in the 60s and 70s was the transfer of traditional model into jazz music society structure and work in general. It became a sort of community and jazz itself became the language of initiation with its clear function and social context. The complex process of becoming a jazz musician seemed to be similar to the initiation process, including self-directed learning of the certain skills and individual searching for the master-teacher. It is necessary to say that formal education was dominated by European educational models and it was out of reach for majority of Afro American musicians, because of the racial segregation. However, the progressive jazz society was created mostly by Black artists and it took a form of hermetic community, creating its own structures, psychological models that one need to be initiated in. Therefore, the educational process of young artists was a form of self- directed learning and collective informal learning.

In this context it is not difficult to notice the analogy between jazz musician learning and initiation process in ancient communities: (1) We can speak about so-called acknowledgement and individual searching for talent, considering the gift, something external that „comes from the outside”. (2) We will not find here literally understood initiation, however it seems to be present in numerous acts

that a young musician is required to perform to be accepted to the community, such as: testing one's skills and personality on jam session (a collective and spontaneous performing and improvising), that was the pass to be accepted by the community. (3) The process of self-directed learning the instrumental techniques was based on searching for the master, who would spontaneously lead the entrant through all the levels and the „programme” (jazz standards). This function was fulfilled by working as an apprentice with other appreciated leader: just like Miles Davis working with Charlie Parker at the beginning, who finally became the master for Hancock, Coltrane or Wayne Shorter.

To conclude, the fundament of jazz musician's self-directed learning was the relation of the master and the learner - intentional, based on certain methods, content and aims, that Peterson is writing about. On the other hand, it is difficult to omit the fact, that jazz music was a kind of lifelong journey, filled with episodes and changes that Jarvis is speaking about - it contributed to comprehensive development of individual in the real-life perspective, determining various transformation in one's lifestyle and mentality. Both collective performances at Village Vanguard, Minton's Playhouse, Blue Note, Birdland, testing on jam session and common joint drug doing or spiritual seances (meditation and chanting before or during the concerts) were integral parts of initiation, that I have mentioned above. The main result of these acts was the transformation of young entrant into strong, capable and charismatic artist - performer, whose personality had a chance to be developed enough to make one the leader for the next generations, one's band and the audience, which at the same time participate in the process of learning (spontaneously and intentionally), being taught the essence of jazz by the leader with its social, cultural and ethnic senses taken into account.

Summary

Nowadays, musical education including jazz music and popular music education is almost completely formalized. The most important institutions, such as Berklee College of Music and Julliard School of Music, create study programs and methods of learning and teaching, that are imported to other schools and seats of learning, becoming a kind of official study programs. Jazz was systematized in imitation of classical music forming a masterful system based on widely respected and obligated dogmas (f.e. methods of B. Stoloff, J. Abersold, M. Levin). The initial reaction of euphoria in the 80s and the 90s, accompanying the elite status that jazz was finally brought to, started to melt into doubt and reflection... Today it seems that jazz was shorn of the fundamental category of freedom, inner-maneuvrability and collective way of learning in everyday life, that was proper to this musical genre in the middle of the last century, creating artist with the lack of this inner-maneuvrability and individual character. Therefore, bringing awareness to the analogy between the phenomenon of so-called shamanism (neoshamanism) and jazz music (and some of the important jazz artists' works) and taking into account the sociocultural background of this genre I would like to emphasize the need of the reinterpretation of jazz music from the perspective of the artists' inspirations and cultural

practices, presented in this essay. Including these aspects in educational discourse (f.e. jazz history, philosophy in jazz music etc.) would bring, in my opinion, the very important knowledge and new perspective to young generation and contribute to increase one's potential in performance and composition. In addition, I would like to notice the presence of the possible alternative educational path, which could be: (1) implementation of the model of shaman-leader/teacher and focusing on the intimate relation between the student and the master, that could even take the form of arte-therapy (individual mentoring); (2) return to the collective informal learning in the reality, out of institutions. The use of the model presented in the article would open music education to new possibilities in the area of „learning” and „teaching”, which main aim - to my point of view - is to evolve the individuality and independence in one's artistic activities.

References

- Berendt, J. E. (1991). *Wszystko o jazzie*. Warszawa: Polskie Wydawnictwo Muzyczne
- Berendt, J. E. (1979). *Od raga do rocka. Wszystko o jazzie*. Warszawa: Polskie Wydawnictwo Muzyczne.
- Collier, J. L. (2001). O funkcji ekstatycznej w jazzie. In: Sadie, S., & Grove, G. (Eds.) *The Grove Dictionary of Music and Musicians*. Oxford: Oxford University Press.
- Deren, M. (2000). *Taniec nieba i ziemi. Bogowie haitańskiego wudu*. Kraków: Wydawnictwo A.
- DeVito, C. (2017). *Coltrane według Coltrane'a. Wywiady z Johnem Coltrane'em*. Kraków: Kosmos Kosmos.
- Eco, U. (2008). *Dzieło otwarte*. Warszawa: W.A.B.
- Eliade, M. (2011). *Szamanizm i archaiczne techniki ekstazy*. Warszawa: Aletheia.
- Hancock, H., & Dickey, L. (2015). *Autobiografia legendy jazzu*. Kraków: Sine Qua Non.
- Jarvis, P. (2001). *Learning in later life. An introduction for educators and carers*. London: Kogan Page.
- Jung, C. G. (1993). *Archetypy i symbole: pisma wybrane*. Warszawa: Czytelnik.
- Kofsky, F. (1998). *Black Music, White Business: Illuminating the History and Political Economy of Jazz*. United States of America: Pathfinder Press.
- Kofsky, F. (1998). *Black Nationalism and the Revolution in Music*. United States of America: Pathfinder Press.
- Kolankiewicz, L. (2010). Teatr kultów transowych. *Kultura-media-teologia*, 1 (1).
- Kolankiewicz, L. (2011). *Wielki mały wóz*. Gdańsk: Słowo/Obraz terytoria.
- Livingstone, D. W. (2001). Adults' informal learning. Definitions, findings, gaps and future research. *Nal Working Papers*, 20.
- Muszyński, M. (2014). Around concepts: education and learning. *Anragogy Yearbook*, 21, 77-87.
- Pentikainen, J. (2006). *Shamanism and culture*. Helsinki: Ethnika Oy.
- Przybylska, E. (2014). Learning cultures: some reflections in the context of lifelong learning. *Anragogy Yearbook*, 21, 119-130.
- Schmidt, A. (1988). *Historia Jazzu. Rodowód*, Warszawa: Polskie Stowarzyszenie Jazzowe
- Szturc, W. (2014). *Rytualne źródła teatru. Obrzęd-maski-święto*. Kraków: Państwowa Wyższa Szkoła Teatralna im Ludwika Solskiego.
- Szyjewski, A. (2005). *Szamanizm*. Kraków: WAM.
- Troupe, Q., & Davis, M. D. (1990). *Miles. The Authobiography*. New York: Simon & Schuster.

Vitebsky, P. (1996). *Szaman*. Warszawa: Świat Książki.

Netografia:

<https://www.youtube.com/watch?v=8CoPGDfMWFc&t=38s>, access on 3 June 2017.

<https://www.youtube.com/watch?v=jAtaxon9t5g>, access on 3 June 2017.

ФИЛОСОФСКАЯ ИНТЕРПРЕТАЦИЯ СИМВОЛИКИ КАРТИН М.-К. ЧЮРЛЕНИСА

Philosophical Interpretation of Symbolism of Čiurlionis' Paintings

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Abstract. *The art of M.-K. Čiurlionis is unique and at the same time emblematic of the culture of the art nouveau period. A deep connection of his art to Lithuanian folklore was combined with his fascination with European philosophical trends of the turn of the 19th - 20th centuries. The aim of this article is to identify the cross-cutting themes (leitmotifs) in the artist's works and, with the help of this, to reveal the philosophical basis of his works. The methods of research are the study and analysis of both individual Čiurlionis' paintings and his artistic production in general, as well as the analysis of the literature devoted to his works. As the result, two groups of leitmotifs were identified in the Čiurlionis' paintings: a) figurative themes; and b) non-figurative themes (up to complete abstraction). Analysis of the meanings of these themes and of their influence on the content of the paintings shows that concrete figurative images (themes of kings, bird, hand, and castle) are associated with Lithuanian folklore. Semi-abstract and abstract images (chaos, glance, gesture, and beauty) reveal the connection between the art of Čiurlionis and European philosophy, from Plato's ideas to Nietzscheism and mystic-visionary movements of the early 20th century. Revealing the philosophical basis of his paintings makes it possible to simultaneously review the artist's entire work in the context of culture of art nouveau, understand this culture more deeply, and thus get a better understanding of some important phenomena of our time.*

Keywords: *art of M.-K. Čiurlionis, epoch of art nouveau, figurative images, abstract images, images-leitmotifs, Lithuanian folklore, philosophical symbolism of paintings.*

Введение

Introduction

Фигура Миколаюса Чюрлениса является знаковой для символистской эпохи. Творчество художника привлекало внимание еще при его короткой жизни (отзывы А. Белого, А. Бенуа, Н. Рериха, А. Скрябина, И. Стравинского и других выдающихся деятелей эпохи) – и не теряет актуальности в конце XX и в XXI веке (исследования И. Ванечкиной (1999), А. Сафрая (1998, 2001), О. Лапко (2004), Я. Жемойтель (2012) и многих других). М. К. Чюрленис интересен тем, что воплощает и реализовывает

идею синтеза искусств уже универсализмом своей творческой личности: музыкант, художник, поэт, философ.¹ Чюрленис наследует традиции романтизма, попадает под влияние миропреобразующих идей Ницше и мистиков-космистов: Рудольфа Штайнера и Елены Блаватской, – и творит собственный индивидуальный маленький Космос по законам красоты и гармонии, почерпнутых из литовских сказок и легенд. Визионерский характер творчества Чюрлениса подтверждается тем, что часто его стихи и поэтические строки из писем, комментирующие его собственные живописные произведения, не исчерпывают их философской глубины и масштабности замысла, что дает основание некоторым исследователям (например, Н. Бердяеву) прямо говорить о мистицизме его творческого дара (Бердяев, 1990: 24).

Объектом исследования является творчество Чюрлениса как синтез философии, живописи и музыки.

Цель исследования - выявить в картинах Чюрлениса сквозные темы (лейтмотивы) и на этой основе раскрыть философский базис творчества художника.

Методы исследования: изучение и анализ отдельных картин Чюрлениса и его художественного творчества в целом, анализ литературы, посвященной его творчеству.

Результаты данной работы могут быть полезны для исследователей творчества Чюрлениса и для специалистов-культурологов, занимающихся культурой эпохи модерн. Они могут быть также использованы при изучении творчества Чюрлениса в художественных вузах. Системный взгляд на творческое наследие Чюрлениса-живописца дает возможность прочесть его в контексте эпохи как соединение индивидуального и общего, национального и надмирного, лирического и космогонического.

Особенности стиля М. Чюрлениса *M. Čiurlionis: peculiarities of style*

Основное профессиональное образование Чюрленис получил как музыкант. Внук литовского крестьянина и сын органиста, он учился сначала в музыкальной школе князя М. Огиньского в Плушнях (Польша), а позже –

¹ Чюрленис практически не печатал свои литературные опусы. Единственную попытку публикации – «Записки выздоравливающего», - от осуществил в 1905 году. Однако рукописи, дневники и письма хранят ценнейший материал, дающий возможность проследить формирование замыслов многих произведений и раскрывающих внутренний мир художника-символиста (Landsbergis, 2011). Изучением литературного наследия художника занимался Игнас Шлапялис, литовский искусствовед и живописец, писавший в своей неизданной монографии: «Немало он трудился и оставил плодов своего творчества в литературе (...) Сохранились образцы беллетристики в форме писем, обширные дневники, есть и так разные записи. Все его работы, все его сочинения написаны в том же духе, что и его живопись – глубоко лиричны, символичны, музыкальны» (Ландсбергис, 2008).

в Варшавском музыкальном институте (1894-1899 гг.) и в Лейпцигской консерватории (1901-1902). И, хотя Чюрленис долго не жил в Литве и даже не говорил по-литовски (как, например, Ф. Лист – по-венгерски), именно переосмысленный образ Литвы, некогда оставленной родины, служил ему источником вдохновения на протяжении всей жизни. Таким образом, творчество Чюрлениса реализует важнейшую тенденцию эпохи романтизма – создание национальных школ. Особенно важна она для тех регионов Европы, которые не имели в прошлом богатой национальной традиции. В этом смысле Чюрленис для Литвы – то же, что Шопен для Польши, Глинка для России, Дворжак для Чехии или Григ для Норвегии. В творчестве этих авторов обязательно присутствуют две составляющие: укорененность в национальной фольклорной традиции – и профессиональная приобщенность к современной европейской культуре, что позволяет их творчеству выйти из региональной замкнутости и встроиться в контекст искусства Европы.

Поскольку в случае с Чюрленисом этот процесс возник поздно, уже на рубеже XX века, он впитал именно те тенденции европейского искусства, влияние которых было особенно значительно в это время. Вероятно, Вагнер был тогда одним из самых «модных» композиторов. Его философия и эстетика, опередив время почти на полстолетия, оказались в высшей степени востребованы именно в эпоху символизма, причем не только в музыке, но во всех видах художественного творчества. Речь идет прежде всего о двух составляющих характеристики творчества Вагнера: идее синтеза искусств в мировоззренческом – и идее глобальной лейтмотивной системы в формообразующем плане. Система образов-символов, наделенных определенными смыслами и переходящими из одного произведения в другое, которую создает Чюрленис в живописном наследии, – прямая отсылка к Вагнеру. Создается своего рода «бесконечная мелодия» на основе варьирования устойчивых узнаваемых интонаций.

Обращает на себя внимание не просто стилистическое единообразие живописного наследия Чюрлениса, но некая глубинная общность, позволяющая воспринять все творчество как цикл с единым замыслом, раскрывающим в вариативной форме одну главную мысль – сверхидею и сверхзадачу.² Объединяющим фактором при прочтении творчества Чюрлениса является система лейтмотивов вагнеровского типа, и этот прием дает возможность интерпретировать картины разных лет в едином ключе. Так прочитываются партитуры опер Вагнера, в которых вокальный ряд, подкрепленный словом, не является основным носителем смысла: его берут

² Не случайно исследователи так часто проводят параллель между творчеством Чюрлениса и Скрябина. Идея создания Мистерии, хотя и не осуществленная в соответствии с авторским замыслом, позволяет рассматривать все творчество композитора как путь к одной цели.

на себя лейтмотивы, неизменные по значению, но всякий раз раскрывающие новый аспект сюжета благодаря разнообразным сочетаниям друг с другом.

Можно выделить две группы лейтмотивов:

1. Конкретно-образные лейтмотивы: фигуративные, узнаваемые, связанные с историей, мифологией, сказкой. К ним относятся темы *Королей, Птицы, Деревя, замка, горы и т.п.*
2. Образы-символы, уходящие от прямой фигуративности и воплощающие уже не конкретные образы, а философские идеи, актуальные для эпохи рубежа XIX-XX веков – темы *Хаоса, Света, Взгляда, Жеста, Красоты и т.л.*

Граница между стилистикой изображения этих групп лейтмотивов прозрачна: порой фигуративные темы «размываются», модулируя в условную орнаментальность, вплоть до полной «дематериализации» - абстрактных цветовых и световых потоков. И, наоборот, из стихийной, нерасчлененной первоматерии цвета рождаются ритмы, членения, в контурах которых угадывается реальный предметный мир. Это и придает единство и целенаправленность потоку творческой фантазии.

Представляется необходимым остановиться на некоторых наиболее часто употребляемых лейтмотивах и попытаться дать их более подробную интерпретацию.

Романтическая сказка Чюрлениса: Фигуративно-конкретные темы *Romantic fairy-tale by Čiurlionis: figurative and concrete themes*

Лейтмотивы первой группы соответствуют романтической составляющей творчества Чюрлениса, - и по содержанию, и по форме. Здесь господствует типичная для романтиков образность, связанная с созданием индивидуального авторского мифа. Однако, в отличие от предшествующей эпохи, миф как глобальная космическая идея приобретает камерный, субъективный характер, что позволяет говорить не столько о мифе, сколько о сказке – столь любимом романтиками жанре. Герои сказок больше связаны с фольклорной традицией, что отвечает национальному чувству Чюрлениса и, вероятно, сказочный мир наиболее органичен для его нежной, чувствительной натуры.

Один из важнейших мотивов, проходящих через все творчество художника – образ Короля. Он является центральным в таких картинах как «Дружба», «Сказка королей», «Водолей» из цикла «Зодиак», четвертом листе из 13 «Сотворения мира», в «Гимне (вторая из трех картин цикла), в «Вечности, наконец, в «Рех'е», кульминации всего творчества художника. Король - прямая отсылка к литовскому фольклору (впрочем, аналогичные предания встречаются и в эпосе других европейских народов). У литовцев

речь идет о короле войска жемайтов (великанов) Казимирасе.³ У Чюрлениса этот образ встречается в двух вариантах: бодрствующего и спящего существа. В первом варианте (бодрствования) несомненна охранительная семантика образа. Например, в «Сказке о королях» (1909) Короли держат в ладонях литовскую деревушку, излучающую яркий свет. Мотив короля как хранителя мира усилен еще одним мифологическим мотивом: *руки* (на руке Королевы покоится деревня). Рука – символ власти (мирской и духовной). «Действие, сила, господство, защита... способна передать духовную и физическую энергию» (Рошаль, 2006: 145).

Вариантом темы *Короля* следует считать образ *спящего короля*. Хотя он более соответствует народному сказанию, автор явно вкладывает в него несколько иное содержание. Спящий Король – олицетворение Родины, некогда бывшей великой империей, но сегодня погруженной в сказочный сон. Изображение уснувших королей – размышление о судьбах мира, о бренности жизни. Не случайно уснувшие короли, часто восседающие на сказочных тронах, стоящих на вершинах гор, изображаются со склоненными головами, а в финале «Сонаты солнца» мир королей еще и заткан паутиной (образ достаточно прозрачный). Интересно, что на многих картинах спящие короли как бы развоплощаются, теряют антропоморфное начало, превращаясь в древесные кроны («Лес»), или едва угадываясь в очертаниях облаков («Ночь»), что делает образ не только эфемерным и таинственным, но и глубоко пессимистическим, разрушая надежду на пробуждение и возрождение.

В фольклорном ключе, хотя и субъективно переосмысленно, прочитывается лейтмотив *Черной Птицы*, семантически объединяя картины «Весть» (1904/5), «Стрелец» из «Зодиака» (1906/7), «Сказка» (второй картон из триптиха 1907), «Прелюд» из цикла «Прелюд и fuga» (1908). Птица в разных фольклорных традициях воспринимается как вестник, ей вняты и земные людские дела, и божественный промысел.⁴ Темные птицы с картин Чюрлениса – это, безусловно, образ пророческого знания, но всегда – мрачного и угрожающего, таящего предчувствие смерти.

Интересно, что птицы на картинах Чюрлениса чаще всего имеют темно-коричневый цвет. Символика цвета давно является объектом интереса исследователей творчества художника, но в отношении данного лейтмотива убедительных толкований найти не удалось. Коричневый цвет (точнее, все оттенки охры) очень характерен для палитры Чюрлениса, и это

³ Казимерас (Казимир) – литовский княжич и польский королевич, святой покровитель Польши и Литвы). Казимирас спит на горе в труднодостижимом месте, но проснется тогда, когда Литва окажется в опасности. Вместе с ним воскреснут его воины, чтобы защитить Родину.

⁴ Не случайно два ворона, Хугин (мысль) и Муниин (память) – являются атрибутами верховного божества скандинавской мифологии – Одина.

часто придает его живописи душный, томительный, по-экспрессионистски напряженный колорит. Коричневый цвет в сознании человека чаще всего ассоциируется с землей, почвенностью, бездуховностью – в противовес всем оттенкам синего. Не потому ли в «Стрельце» из цикла «Зодиак» коричневый стрелок, стоящий на вершине коричневой горы целится в коричневую птицу, застилающую огромными крыльями изумрудно-голубое небо? Не следует ли рассматривать эту цвето-фигуративную символику как обреченную попытку вырваться из удушающей атмосферы приземленности в небесный простор чистого духа?

Еще отчетливее данная мысль прочитывается в «Прелюде» из диптиха «Прелюд и fuga», 1908. Композиционно очень близкая «Стрельцу», эта картина объединила в себе образы стрельца и птицы: тёмно-коричневое пятно – то ли птица, то ли крылья кентавра-стрелка, сам образ которого объединяет в себе животное и духовное начала.

Но у Чюрлениса *темная птица* появляется не только как основная тема, под знаком которой прочитывается вся картина. Изображенный схематически, почти доведенный до абстракции, силуэт птицы, раскинувшей темные крылья, возникает во многих произведениях как часть фона, вплетаясь в полифонию лейтмотивов все с теми же угрожающими, вселяющими дурные предчувствия, коннотациями. Введение «фоновых» лейтмотивов, вплетенных в полифоническую ткань, позволяет трактовать содержание картины так же, как интерпретируется смысл партитур Вагнера и других композиторов-романтиков: через лейтмотивный контрапункт.

Рассмотрим с этой точки зрения упомянутую картину «Сказка о королях» (1909, холст, темпера, 70,2x75,3). Литовская деревушка, излучающаяся ярким свет, покоится в ладонях склонивших к ней головы королей. Интересно сравнить окончательный вариант картины с графическим эскизом: там присутствуют два короля – черный и белый. В темперном варианте белый король превратился в королеву, что не изменило, но углубило первоначальный замысел: если черное и белое – злое и доброе начала, что очевидно, то мужское и женское – воля и мягкость, строгий суд – и всепрощающая любовь.⁵ Представляется возможным увидеть в двойственном образе королей символическое изображение alter ego автора: черное и белое, мужское и женское, суровое и доброе, - это отражение сложной души художника, устремленной помыслами к фантазийному идеалу, своего рода «далекой возлюбленной» - сияющему миру литовской сказки.

⁵ Аксиологические коннотации подчеркнуты даже положением рук королей: поддерживающий, охранительный жест Королевы, - собственно, она и держит на ладони деревню, - и жесткий, указующий жест Короля.

Эта сцена разворачивается на сложном фигуративном фоне: в таинственном освещении ночного неба полифоническое переплетение черных древесных стволов, за ветвями которых скрыты и черная птица (тема рока), и гора (символ тяжелого пути наверх), и замок как завершение жизненного пути. Итак, возникает универсальный сюжет романтизма: противоречивое, амбивалентное начало авторского «я» с вечным стремлением к идеалу – и невозможность его достижения из-за вмешательства роковой силы. В таком ключе прочитываются многие работы художника, основанные на фольклорных мотивах.

Космогония Чюрлениса: Абстрактно-символические мотивы *Čiurlionis's cosmogony: abstract and symbolic motives*

Более сложный, субъективно-философский смысл, имеют темы синтетического характера, в которых фигуративность, то есть связь с конкретным образом, не столь важна и может свободно перетекать от одного изображения к другому, не меняя философской основы.

Абстрактный лейтмотив, пронизывающий все творчество художника, можно определить как мотив хаоса. Хаос – первостихия, из которой все рождается и в которую погружается мир после прохождения всех этапов становления, - выглядит на картинах художника, как абстрактный красочный поток, извилистые линии и пятна, могущие принимать любую форму: облака, водного потока, размытого силуэта дерева, подобия руки, развоплощенной до характера охранительного, угрожающего или предупреждающего жеста.⁶

Вполне логично господство лейтмотива цикле «Сотворение мира». 13 листов темперы по бумаге, размер которых не превышает 31x37 см, иллюстрирует все этапы Творения в соответствии с авторским мифом Чюрлениса.

Тема первозданного хаоса здесь господствует повсеместно, порождая некие фантастические формы, еще не достигающие стадии полного воплощения.

Первый лист представляет своего рода вступление. Его обычно трактуют в библейской традиции, как иллюстрацию к первой книге Бытия,

⁶ Картины: «Осень», 1904; «Мысль», 1904; «Концерт», 1904; «Композиция», 1904; «Моисей», 1904; «Угроза», 1904; «Заход солнца», 1904; «Потоп» - весь цикл, 1904/5; «Лица», 1904/5; «Мысль», 1904/5; «Сутки» - весь цикл, 1905; «Истина», 1905; «Ночь», 1905; «Сотворение мира» - весь цикл, 1905; «Гимны», 1906; «Вечность», 1906; «Искры», 1906; «Гора», 1906; «Лес», 1906; «Ночь», 1906; «Весна» 1907; «Солнце», 1907; «Соната солнца»: 2 и 4 части, 1907; «Соната весны»: весь цикл, 1907; «Лето»: весь цикл, 1907; «Зима», 1907; «Фантазия», 1908; «Соната ужа»: весь цикл, 1907; «Соната лета»: весь цикл, 1908; «Соната звезд», 1908; «Жертва», 1909; «Пяркунас», 1909; «REX», 1909. (подробнее об этом – Besant & Leadbeater, 1905: 122-125).

видимо, из-за надписи в правом нижнем углу картины: «Да будет» по-литовски. Однако, возможно, композиция отсылает не столько к библейским, сколько к платоновским идеям об эйдетическом мире. Этот мир уже есть, он каллиграфически прорисован в верхнем левом углу, диагонально к надписи «*Stai sie!*». В этом маленьком мире уже все существует: гора, замок, солнце, - основные «мирские» лейтмотивы. Но этот идеальный мир замкнут и отгорожен, погружен в холодное голубое пространство. Макс Фридендер пишет о том, что «холодные тона выражают отрешенность, удаленность, просветленность и вместе с тем сдержанное благородство» (Фридендер, 2013: 46). Сдержанное благородство и отрешенность от мира - не есть ли это мир эйдосов, недоступных прямому человеческому созерцанию? Поэтому светло-голубое облако, пересекающее по горизонтали верхнюю часть картины и принимающее форму гигантской руки, скорее скрывает, загораживает эйдетический мир от еще не созданного мира эфемерных подобий, чем благословляет или повелевает. Под рукой – нерасчлененное, мутное пространство, сотканное из сочетаний синих и желтых тонов, в совокупности дающих зеленые пятна. Синее и желтое – дух и материя. Из сочетания этих субстанций суждено родиться новому миру.

Следующий этап (второй лист) – исходный момент творения. Исследователи творчества Чюрлениса указывают на несомненное влияние на художника философии Р. Штайнера, о чем уже говорилось (Сафрай, 2001: 21-23). Это вполне обоснованное предположение. Известно, что Чюрленис, обучаясь в варшавской Школе изящных искусств, сблизился с Казимиром Стабровским, который увлек его теософскими идеями и практикой оккультизма. Анализ второй и третьей картин цикла «Сотворение мира» показывает наглядно, как некоторые визуальные фантазии Штайнера находят иллюстрированное воплощение в живописи Чюрлениса. Так, например, Р. Штайнер пишет: «Если способность к самопожертвованию вырастает из сильной воли, выражающейся в деятельном служении миру, тогда синее просветляется до светло-фиолетового» (Штайнер, 1990: 124). На втором листе воспроизводится процесс высветления от темно-синего, почти черного до бледно-лилового в центре. Отсутствие фигуративности, нерасчлененность красочных мазков прекрасно передает ситуацию начала некоего космического процесса. Цветовая палитра ассоциируется не только с идеями Штайнера: строка «*lux*» в партитуре «Прометей» А. Н. Скрябина также начинается потоком фиолетового света, символизируя процесс перехода от первобытного хаоса к стихии Прометей (впрочем, источник скрябинской идеи может быть тот же, что и у Чюрлениса). А. Блок в статье «О современном состоянии русского символизма» 1910 года пишет о «лиловых мирах революций»

(Блок, 1910: 27), рассматривая революцию как инициатический акт рождения нового мира.⁷

На третьем, четвертом и пятом листах мнимо-спонтанное движение кисти порождает не только море, звезды и водные потоки, - из того же хаоса возникает и человеческое лицо, точнее - маска, тень, безжизненный профиль сказочного короля, созерцающего процесс созидания мира.

На следующих картинах появляются фантастические растения и животные, с каждым листом прописанные все более отчетливо. Так передается процесс воплощения эйдосов. Цветовая гамма следует по пути «материализации» цветов: в каждой фазе творения все меньше синего, больше охры и белого, видимо, как знака чистоты и невинности вновь созданной вселенной. Только на восьмом листе возникают красные пятна, которые на девятом распускаются, принимая форму фантастических цветов, - так в мир приходит страсть, пока только как внезапный яркий аккорд, сформированный переплетением полифонических пластов. И на последних листах все успокаивается, хаотические наплывы красок принимают облик подводных гадов и, наконец, вполне реалистического морского пейзажа с восходящим солнцем, с преобладанием спокойных зеленых тонов. В «Символике цвета» Н. Серова читаем: «Зеленые тона занимают промежуточное положение между теплыми и холодными цветами (...) Зеленый цвет является цветом природы и роста, что оказывает успокаивающее действие, создает нейтральное настроение, впечатление мягкого, приятного и благотворного покоя» (Серов, 2015: 115).⁸

Таким образом, главным лейтмотивом цикла стала тема хаоса. Из темы хаоса рождаются практически все лейтмотивы Чюрлениса. Так, плавно извивающаяся, текучая линия становится змеей, ужом, символизирующим мудрость («Сотворение мира», «Соната ужа»). Два переплетенных потока – темный и светлый – становятся дымом жертвенников, символизируя доброе и злое начала («Жертва», 1908; «Жертва», 1909; «Жертвенник», 1909). Из растекающихся темных и светлых пятен возникают очертания материков и морей на поверхности земной сферы («Соната звезд», «Соната солнца»). Наконец, в картине «Рех» сами хаотические потоки выстраиваются в некую космическую структуру, симметричную и расчлененную, в которой многие поклонники мистической философии Р. Штайнера видят буквальную иллюстрацию к описанной им картине мира (Сафрай, 1998: 22). Однако это

⁷ Мы не рассматриваем здесь христианскую трактовку фиолетового цвета, впрочем, она и не противоречит вышесказанному.

⁸ В литературном наследии Чюрлениса есть поэтическое осмысление зеленого:

« - Приятель, не скажешь ли, как выглядит зеленый цвет?

- Зеленый цвет? Гм... Зеленый цвет – это цвет... ну, такой, как трава... деревья, деревья тоже зеленого цвета – листья, - ответил я ему и огляделся вокруг. Но нигде не было никакого деревца, никакого росточка травы.» - М.-К. Чюрленис. Литературный фрагмент «Сказка» (Вяряките-Фядаравичете, 2006: 185).

все-таки субъективный чюрленисовский космос, о чем свидетельствуют использованные в картинной партитуре лейтмотивы. В этом Космосе в строгом порядке расположены не только космические объекты (Солнце, Луна, звезды), но и символы культуры: жертвенный огонь на вершине зиккутара, король на троне – и крохотные рощицы, освещенные солнцем, как в «Сказке о королях». Так в одной картине (самой масштабной у Чюрлениса: 147,1x133,7, - и единственной, написанной маслом), безусловно, самой значительной в творчестве художника, соединилось несовместимое: космический масштаб замысла – и каллиграфия прорисовки того, что, видимо, ощущается художником как венец творения: образ очага, дома – маленькая литовская деревушка, хранимая великим Рех'ом.

Выводы *Conclusions*

Творчество Чюрлениса является эмблематичным для культуры ар нуво. Его отличает сочетание укорененности в литовской фольклорной традиции и интерес к философским исканиям, характерным для европейской культуры рубежа XIX-XX веков.

Стилистическое единство творчества Чюрлениса позволяет рассматривать его как целостный текст, основанный на развитии системы образов-лейтмотивов вагнеровского типа.

Можно выделить две группы лейтмотивов по принципу живописного воплощения образов. Первая группа – фигуративные темы, связанные с фольклорным началом, с миром народных сказок и легенд. Вторая группа – полуабстрактные и абстрактные темы, через которые метафорически раскрывается авторская мистико-идеалистическая философия.

Важнейшую роль имеет лейтмотив хаоса, пронизывающий все творчество художника. Склонный к трансформации, перетеканию в другие знаковые темы, он является основой космогонии Чюрлениса.

Раскрытие философской основы картин дает возможность симультанно обозреть все наследие художника в контексте культуры эпохи модерна, получить более глубокое представление об этой культуре и вследствие этого лучше понять некоторые важные явления современности.

Summary

The art of M.-K. Čiurlionis is unique and at the same time emblematic of the culture of art nouveau period. A deep connection of his art to Lithuanian folklore was combined with his fascination with European philosophical trends of the turn of the 19th - 20th centuries. The aim of this article is to identify in the artist's works the cross-cutting themes (leitmotifs) reflecting the author's philosophy. In the process of analyzing the artist's works, two groups of leitmotifs

were identified: a) figurative themes; and b) non-figurative themes (up to complete abstraction). The figures of King and Bird are vivid examples of the first group. The king may be depicted awake or asleep. In Lithuanian folklore the king personifies the country's power, but a sleeping figure has a tragic undertone as it symbolizes a once mighty empire now dead asleep. Sleeping kings represent the author's reflections on the world's fate and frailty of life. Another frequent figure - the bird - in folk tales is often a messenger linking the worldly and the divine. Čiurlionis's dark birds symbolize prophetic knowledge, always grim and menacing, a presentiment of death. The symbolism of colour is very important in Čiurlionis's paintings. His birds are dark brown, and the brown colour is associated with the Earth and soil, as opposed to all shades of blue symbolizing the spiritual. The figure of a bird in Čiurlionis's art symbolizes the fatal conflict between common reality and a creating spirit.

Čiurlionis's cosmogony is represented by abstract (non-figurative) motives, primarily by the Chaos. In his art this theme is expressed by colorful streams, sinuous lines and patches, sometimes forming this or that symbolic object. Many philosophic and symbolic motives in Čiurlionis's art spring from the theme of Chaos. It may transform into the figure of a snake (a water-snake) symbolizing wisdom, into the black and white smoke from an altar symbolizing good and evil, into the shapes of continents, islands or cosmic structures representing the creation of the world. The article studies Čiurlionis's cyclus "Creation of the World" from the perspective of how the theme of Chaos is developed and transformed throughout the cyclus. Other abstract themes with a symbolic meaning in Čiurlionis's works include Light, Glance, Gesture, Beauty, and some others.

Analysis of the meanings of these themes and of their influence on the content of the paintings shows that concrete figurative images (themes of kings, bird, hand, and castle) are associated with Lithuanian folklore. Semi-abstract and abstract images (chaos, glance, gesture, and beauty) reveal the connection between the art of Čiurlionis and European philosophy, from Plato's ideas to Nietzscheism and mystic-visionary movements of the early 20th century.

The results of this article can be useful for the researchers of Čiurlionis' paintings and experts in cultural studies dealing with the culture of the art nouveau period. They may be used in the study of Čiurlionis' art in art schools as well. Revealing the philosophical basis of his paintings makes it possible to simultaneously review the artist's entire work in the context of the culture of art nouveau, understand this culture more deeply, and thus get a better understanding of some important phenomena of our time.

Литература References

- Besant, A., & Leadbeater, C. W. (1905). *Thought-Forms*. New York: John Lane.
- Landsbergis, V. (2011). *M. K. Čiurlionis. Laiškai Sofijai*. Vilnius: Baltos lankos.
- Вярякялите-Фядаравичете, Б. (Сост.) (2006). *Mikalojus Konstantinas Čiurlionis: Картины. Эскизы. Мысли*. Москва: «Россия молодая».
- Бердяев, Н. А. (1990). *Кризис искусства*. Москва: СП Интерпринт.
- Блок, А. А. (1910). О современном состоянии русского символизма. *Аполлон*, № 8, 27-28.
- Ванечкина, И. Л. (1999). Скрябин и Чюрленис: музыка и живопись на пути к синтезу. *Вестник Казанского государственного технологического университета*, № 1, 68-73.
- Жемойтель, Я. Л. (2012). М.-К. Чюрленис и истоки европейского романтизма. *Вестник Череповецкого ун-та*, Вып. 2 (39), т. 2, 194-198.

- Ландсбергис, В. (2008). Литература. Чюрленис. Available from Internet: <http://ciurlionis.eu/ru/literatura/>.
- Лапко, О. А. (2004). Трансформация музыкальных закономерностей в живописном цикле “Соната моря”: философский аспект творчества М. К. Чюрлениса. *Альманах «История, культура, общество»*, 276-186.
- Рошаль, В. М. (2006). *Полная энциклопедия символов*. Москва: АСТ, П51; СПб.: СОВА.
- Сафрай, А. (2001). М.-К. Чюрленис: «музыкальная живопись и «музыкальные формы». *Новый мир искусства*, № 2, 34-36.
- Сафрай, А. (1998). Микалоюс-Константинас Чюрленис и “теософия” Рудольфа Штайнера. *Новый мир искусства*, № 5, 21-23.
- Серов, Н. В. (2015). *Символика цвета*. СПб.: СТАРТА.
- Фридлендер, М. (2013). *Об искусстве и знаточестве* (пер. с нем.). СПб.: Андрей Наследников.
- Штайнер, Р. (1990). *Теософия. Введение в сверхчувственное познание мира и назначение человека*. Ереван: «Ной».

LATVIJAS FILMU MĀRKETINGA STARPTAUTISKAJĀ TIRGŪ

Latvian Film Marketing in the International Market

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Abstract. *The film industry is an important part of the culture of any country and is inseparable from its cultural development and growth, both locally and internationally. Any film created or even its idea is a product which is being promoted and sold on the market similarly as with other types of products. In doing so, many traditional and not-so-convenient communication tools are used in order to reach the required audience and supporters to the viewers for the finished product – the film itself. In order to achieve support and gain popularity, there are certain marketing tools absolutely necessary which are specifically tailored to foster the film promotion. On the international scene, particularly in the major film markets – with the key players being Hollywood, Bollywood and South Korea – it is difficult for the film producers of the smaller countries to break into these markets, therefore a specific approach is needed to attract the attention of supporters and the viewers.*

Comparatively the Latvian film industry is very small, but this is not a reason why it would be impossible to achieve good results in promotion of films on the international market and attracting supporters. Compared with Estonia and Lithuania, in various indicators Latvia is somewhat lagging behind of its direct neighbours on the international scene. One reason for this is the ineffective use of marketing in order to attract the attention of the international market.

The methodology of the research includes analysis of documents and interviews. There were data and statistical rates analyzed from the National Film Centre and five representatives interviewed of the film industry from Latvia. As a result of this research three basic problems appeared that prevented film marketing in Latvia: a lack of understanding the necessity of film marketing, a lack of the film marketing skills and a minimal budget for the industry. In order to promote the development of film marketing in Latvia, there is a necessity to create a film marketing agency that could do a film promotion in the local and in the international level.

Keywords: *cinema of Latvia, film industry, film marketing, international market.*

Ievads

Introduction

Filmu nozare ir katras valsts kultūras nozīmīga sastāvdaļa, tā nav atdalāma no valsts attīstības un izaugsmes kultūras jomā gan vietējā, gan starptautiskā līmenī. Filmas ir arī viens no populārākajiem un ietekmīgākajiem mākslas veidiem mūsdienu pasaulē, jo tās spēj uzrunāt ļoti plašu sabiedrības daļu. Pēdējos

simts gados filmu nozare ir attīstījusies ļoti lielā ātrumā, izaugot līdz ārkārtīgi ietekmīgai vispasaules industrijai. Taču jāņem vērā, ka izveidotā filma pēc būtības ir produkts, kurš tiek popularizēts un pārdots tirgū līdzīgi kā cita veida produkti, izmantojot dažādus tradicionālus un ne tik ierastus mārketinga paņēmienus, lai sasniegtu nepieciešamo auditoriju un iegūtu skatītājus gatavajam produktam – filmai. Lai panāktu atbalstu un popularitāti, filmai neiztikt bez mārketinga, kurš pielāgots tieši filmu virzīšanai un popularizēšanai. Starptautiskajā vidē, it īpaši lielākajos filmu tirgos, kur noteicošā loma ir Holivudai, Bolivudai, Dienvidkorejai, Nigērijai, savukārt Eiropā – Dānijai, Lielbritānijai, Itālijai un Francijai, nelielo valstu filmu ražotājiem ir sarežģīti ielauzties ar savām filmām. Tādēļ ir nepieciešama īpaši pārdomāta pieeja, kas piesaistītu skatītāju uzmanību.

Latvijas filmu nozare šobrīd ir ļoti maza un neievērojama, salīdzinot ar daudzām veiksmīgām kino valstīm gan Eiropā, gan citur pasaulē, tomēr tas nav iemesls, kādēļ nebūtu iespējams sasniegt labus rezultātus, popularizējot filmas starptautiskā tirgū un iegūstot atbalstītājus. Atliek vien atcerēties par latviešu kino uzplaukumu 1960. gados, lai saprastu, ka nav neiespējami Latvijas vārdu padarīt ievērojamu starptautiskajā filmu vidē. Tomēr, lai to izdarītu, ir nepieciešams atrast un izprast iemeslus, kas līdz šim ir kavējis Latvijas kā brīvvalsts filmu starptautisko atpazīstamību. Salīdzinot ar Lietuvu un jo īpaši ar Igauniju, Latvija ar savu filmu produkciju dažādos rādītājos atpaliek starptautiskajā kino vidē un, ļoti iespējams, tieši tādēļ, ka netiek efektīvi izmantoti mārketinga instrumenti, lai iegūtu starptautiskā tirgus uzmanību.

Šī pētījuma mērķis – analizēt pašreizējo Latvijas filmu mārketingu starptautiskajā tirgū, to ietekmējošos iekšējos un ārējos faktorus, un izstrādāt risinājumus situācijas uzlabošanai. Izmantotās pētījumu metodes – dokumentu analīze (tiek analizēti Nacionālā Kino centra dati un statistiskie rādītāji) un daļēji strukturētās intervijas (intervēti pieci nozares pārstāvji). Pētījuma jautājums: kā pilnveidot un attīstīt Latvijas filmu mārketingu starptautiskajā tirgū?

Filmu mārketinga specifika *The specifics of film marketing*

Mūsdienās ar vārdu mārketinga vairs neidentificē tikai vienvirziena aktivitātes, lai panāktu maksimālu preču vai pakalpojumu noietu. Mārketinga ir kļuvis par sabiedrības ikdienas sastāvdaļu, tas manāms it visur, un mūsdienu mārketinga speciālisti sīvā konkurencē cīnās par mērķauditorijas uzmanību. Lai gan mārketinga pamatmērķis joprojām ir saglabāties tāds, kāds tas bija pagājušajā gadsimtā, ir krasī mainījušies veidi un instrumenti, kā šis mērķis tiek sasniegts – šobrīd mārketinga ir „apaudzis” ar smalkām mērķauditorijas izpētēm, līdz niansēm izstrādātām stratēģijām un plāniem, kā apiet konkurentus un panākt, lai sabiedrība pievērs uzmanību tieši konkrētajam produktam. Taču ne tikai

mārketings ir kļuvis sarežģītāks, arī paši cilvēki ir kļuvuši daudz izvēlīgāki un grūtāk pieejami, kas arī ir galvenais iemesls, kādēļ mārketiņgam ir jāmainās līdzī laīkam.

Vīena no svaīgākajām mārketiņga definīcijām, kuru definējis mārketiņga profesors Filīps Kotlers (*Philip Kotler*), ir: „Mārketiņgs ir klientu attīecību vadīšana abpusējam labumam” (Kotler & Armstrong, 2011: 4). Tātad – ja mārketiņga speciālists izprot patērētāju vajadzības, attīsta produktus, kas atbilst patērētāju prasībām un cenu līmenim, izplata un virza tos efektīvi, šie produkti tiks pārdoti ātri un veiksmīgi.

Mārketiņgs mūsdienās tiek izmantots praktiski visās nozarēs, turklāt ne tikai biznesa darījumos, bet arī kultūrā un sociālajā jomā. Arī darbs kino nozarē nav iedomājams bez padziļinātas izpratnes par tirgus procesiem un mārketiņga zināšanām, turklāt tām ir jābūt orientētām ne tikai uz vietējo tirgu – līdzīgi kā pasaule kopumā, arī kino ir kļuvis ne tikai starptautisks, bet bieži vien pat globāls, un reti kura filma ir paredzēta tikai vienas valsts skatītājiem.

Ir maldīgi domāt, ka filmas producentam galvenā darbības sfēra ir filmas uzņemšanas procesa organizēšana un koordinēšana. Tas ir smags un atbildīgs darbs, tomēr tas ne tuvu nav viss, kas jāveic filmas veidotājiem – daudz pūļu ir nepieciešams veltīt tieši tam, lai filma nonāktu līdz lielam skaitam skatītāju un iegūtu pēc iespējas lielākus ieņēmumus, tātad – filmu mārketiņgam, kurš sākas ar jaunā produkta (filmas) attīstības stadiju un turpinās visās filmu projekta attīstības fāzēs: idejas izstrādē, ražošanā, kā arī gatavās filmas izplatīšanā un izrādīšanā, katrā no posmiem liekot citus uzsvārus. To apliecina arī vīena no filmu mārketiņga definīcijām: „Jebkādas aktivitātes, kas palīdz filmai sasniegt tās mērķauditoriju jebkurā projekta stadijā” (Kerrigan, 2010: 10).

Kā jebkurā lielā biznesā, arī filmu industrijā mārketiņgam tiek atvēlētas milzīgas naudas summas, jo pastāv liels finansiālais risks – ja filma neiegūs popularitāti, nebūs peļņas un tas novedīs pie lieliem zaudējumiem (Kerrigan, Fraser, & Ozbilgin, 2004: 28). Izlaist filmu bez mārketiņga aktivitātēm ir ļoti bīstami pat kases grāvējiem. Vidēji vīenas lielbudžeta filmas mārketiņga izmaksas ir 34,5 miljoni ASV dolāru (Joshi & Hanssens, 2009: 239). Pētījumā, kas veikts ASV 2010. gadā, ir noskaidrots, ka lielākā daļa amerikāņu par jaunajām filmām uzzina no televīzijas reklāmām un filmu reklāmas rullīšiem pašos kinoteātros (ap 70 % aptaujāto). 44 % no aptaujātajiem par filmām uzzina internetā, savukārt 46 % uzzinājuši par filmām no saviem draugiem, paziņām vai ģīmenes locekļiem, kas ir tā saucamais „mutvārdu” (*word of mouth*) mārketiņgs. Ievērojami mazāk (16 %) par filmām uzzina no reklāmām avīzēs vai žurnālos, toties 27 % ievēro filmu reklāmas standus (Rousseau, 2013). Lai gan šie dati ir par ASV kino skatītājiem, tos var pielāgot arī Eiropas, tajā skaitā Latvijas sabiedrībai. Tomēr jāņem vērā, ka Latvijā filmu mārketiņgs, izmantojot reklāmas standus, nav tik populārs kā Amerikā, kur vides reklāmas tiek izmantotas ļoti plaši, lai reklamētu

filmas – tiek iesaistīts sabiedriskais transports, izmantoti lieli reklāmas stendi ceļu malās, uz ēkām, lielveikaliem utt., kamēr Latvijā visbiežāk reklāmu stendi tiek izvietoti pie pašiem kinoteātriem un dažkārt tiek izmantotas vides reklāmas sabiedriskā transporta pieturvietās.

Iepriekšminētais lielākoties ir attiecināms uz lielbudžeta filmām, taču, kā zināms, Latvijā un lielākoties visā Eiropā šādas filmas gandrīz netiek ražotas. Eiropas filmām, kurām ir nesalīdzināmi mazāki budžeti kopumā, arī izdevumi mārketingam ir izteikti mazāki, taču tirgū tām nākas konkurēt ar plaši reklamētām Holivudas filmām. Troksnis, kuru rada lieli filmu veidotāji, ir tik liels, ka tam ir ļoti sarežģīti izlauzties cauri, tomēr tas ir izdarāms, prasmīgi īstenojot pārdomātas mārketinga aktivitātes, un labus panākumus šajā jomā ir guvuši arī ne visai liela budžeta filmu producenti (piem., Latvijā par veiksmīga filmu mārketinga piemēriem var minēt producenta Andreja Ēķa filmas, piem., “Baiga vasara”, “Rīgas sargi”, “Sapņu komanda 1935”, arī jaunākās filmas “Svingeri” un “Nameja gredzens”, gan piebilstot, ka šo filmu panākumi ir vietējā tirgū, tās nav bijušas komerciāli veiksmīgas aiz mūsu valsts robežām).

Neatkarīgi no budžeta, jebkuras filmas mārketinga mērķis būtībā saglabājas vienāds – panākt filmas popularitāti pēc iespējas plašākas auditorijas vidū. Finola Kerigana (*Finola Kerrigan*), pieredzējusi filmu mārketinga praktiķe un arī Birmingemas Universitātes profesore, ir apkopojusi mārketinga principus vidēja un maza budžeta filmām un sagrupējusi tos pa soļiem: 1) mērķauditorijas izpratne; 2) filmas „āķu” analizēšana; 3) īsa, kodolīga filmas saukļa radīšana; 4) neatkarīgo bezmaksas mediju iespēju izmantošana; 5) publicitātes triku izmantošana; 6) filmas pirmizrādes organizēšana; 7) darbs ar sponsoriem; 8) filmas atsauksmju vākšana un izmantošana; 9) interneta (sociālo tīklu) izmantošana; 10) dalība filmu festivālos (Kerrigan, 2010: 52).

Pirmais solis filmas mārketingā – perfekta filmas mērķauditorijas pārzināšana. Filmās galvenais peļņas avots ir tās skatītāji, kas attiecīgi tālāk nodod savus iespaidus draugiem, paziņām, dalās sociālajos tīklos ar saviem iespaidiem, un šādā veidā tiek sasniegta ļoti plaša sabiedrība. Filmu auditorijas iedalās dažādos veidos, bet visbiežāk tiek iedalīts vecumos, pēc dzīvesstila vai pēc attieksmes. Mūsdienās filmu potenciālās auditorijas tiek pētītas ļoti detalizēti.

„Lai veiktu iedarbīgu filmas mārketinga stratēģijas plānošanu, ir nepieciešams definēt filmas „āķus”, ar ko jāsaprot ekspluatējamie filmas elementi, aspekti, kas saistīti ar scenāriju, filmas veidošanu un piesaistītu mērķauditorijas uzmanību. Filmās mārketinga „āķis” var izpausties dažādās formās – tas var būt cilvēks, vieta, lieta, darbība vai ideja” (Turpat: 53). Bieži vien filmas nosaukums vien var darboties kā mārketinga „āķis”. Pareizās nianšes atrašana var viduvēju filmu padarīt veiksmīgu plašā mērogā, kamēr tajā pašā laikā daudz sarežģītāks un izkoptāks filmas projekts, kuram nav izceltas īpašas nianšes – „āķi” – paliek ēnā, netiek ievēroti. Prakse pierāda, ka vidējā un mazā

budžeta filmu veiksmē un izdzīvošana ir galvenokārt atkarīga no tā, vai tiek atrasts piemērots mārketinga „aķis”, kuru izmantot filmas virzīšanas kampaņā.

Tālāk nepieciešams īsi un kodolīgi paust filmas ideju. Nav iespējams vienā filmā ietvert visu un uzrunāt visus cilvēkus. Filmās veidotājiem jābūt spējīgiem definēt savu filmu vienā kodolīgā teikumā, identificējot tās žanru un atklājot pamata informāciju par stāstu potenciālajam skatītājam. Šāda metode, kad visa filma tiek rezumēta vienā teikumā, angļiski ir nodēvēta par „*logline*”, latviski vistuvāk piemērojamais vārds ir „sauklis”. Lai to atrastu un uzrakstītu, ir nepieciešams saprast filmas žanru, struktūru, emocionālo pamatu, tēlus, darbības un uzbūvi. Sauklis tālāk tiks izmantots lielākajā daļā mārketinga aktivitāšu kā veids, kādā pavēstīt filmas stāstu (Turpat: 54).

Veidojot filmas mārketinga komunikācijas plānu, ir jāapsver visi iespējamie mediji, kas var tikt iesaistīti (žurnāli, avīzes, televīzija, radio, internets). Informācija ir jāveido rakstiska, pievienojot fotoattēlus vai videoklipus, un tālāk preses relīzes formā jānosūta medijiem (Joseph, 2014). Ziņai ir jābūt saistošai, viegli uztveramai un saprotamai, vizuālajiem materiāliem ir jārada intriga par filmu un interesi to noskatīties. Ir svarīgi arī panākt atsauksmju veidošanos par filmu, vēlamams no sabiedrībā zināmiem viedokļu līderiem, tāpat arī no atsevišķiem sabiedrības locekļiem. Atsauksmēm, protams, būtu jābūt pozitīvām, intrigu veicinošām, slavinošām, lai citātus no tām varētu izmantot kā mārketinga elementu.

Runājot par publicitāti, tās galvenais mērķis ir oriģinālā veidā panākt gan sabiedrības, gan pašu mediju interesi. Tāpēc ir nepieciešams analizēt filmu un atrast uzmanību piesaistošus elementus, kurus iespējams ekspluatēt, izmantojot publicitātes paņēmienus. Bieži vien, lai panāktu publikas iesaisti, tiek izmantoti dažādi alternatīvā mārketinga paņēmieni, kurus iespējams īstenot ar nelielu budžetu, tomēr attiecīgi tiem ir jābūt daudz oriģinālākiem un pārsteidzošākiem. „Konfrontējoši paņēmieni ir veiksmīgas publicitātes pamatā, un ja filma ietver konfrontējošu ideju, tad tā arī lielā mērā ir jāekspluatē” (Bosko, 2003: 22). Kā piemēru var minēt aģentūru ap latviešu režisores Ievas Bērziņas dokumentālo filmu “Mans tēvs baņķieris”.

Arī filmas pirmizrādes rīkošana ir lielisks veids, kā radīt filmas publicitāti. Lai būtu pārliecība, ka pirmizrāde būs veiksmīga, ir jāņem vērā sekojošie punkti: 1) jāaicina visi vietējo mediju pārstāvji – redaktori, apskatu veidotāji, blogeri, kas ir saistīti ar kultūras un filmu nozari un masu medijiem; 2) pirmizrādi rīkot projektam piemērotā vietā. Piemēram, bārs ir laba vieta viegli izklaidējošai filmai, var izmantot dažādu kultūras iestāžu piedāvātās telpas, kā arī pirmizrādi var rīkot kādā savdabīgā vietā un apstākļos – tas ir atkarīgs no filmas specifikas un veidotāju redzējuma; 3) uzaicināt sabiedrībā zināmus cilvēkus, piemēram, sportistus, kultūras personības, politiķus; 4) uzaicināt pēc iespējas vairāk draugus un citus zināmus cilvēkus, kuri sniegtu nepieciešamo atbalstu un vēlamu reakciju

uz filmu; 5) nodrošināt kādus nelielus suvenīrus ar filmas tematiku visiem, kuri ieradušies (Clevé, 2006: 43).

Visticamāk, ka Latvijas apstākļos budžets filmas mārketingam būs ļoti neliels vai arī nebūs vispār, tādēļ ir ārkārtīgi svarīgi veidot veiksmīgu sadarbību ar dažādiem sponsoriem – uzrunāt produktu ražotājus, pakalpojumu sniedzējus, restorānu un bāru īpašniekus, mediju kompānijas un citas organizācijas, lai panāktu atbalstu, sekmējot filmas mārketingu. Šāda veida sponsorēšana tiek panākta, piedāvājot ko pretī, un arī tā parasti ir publicitāte attiecīgajai kompānijai, kas ir piekritusi sponsorēt filmas mārketinga aktivitātes. Protams, pirms tam ir jāpārdomā, cik lielu labumu gūst atbalstošais uzņēmums, tātad ir jā sagatavo saistošs piedāvājums, kurā tiktu uzsvērtā filmas oriģinālā ideja un pamatota iespēja, ka filma gūs popularitāti. Ir jāpārdomā situācijas, kādās būtu iespējams sasniegt pēc iespējas lielāku un konkrētāku auditoriju, tad jāuzrunā kompānijas, kuras jau ir veiksmīgi sasniegušas šīs auditorijas, un jāstrādā ar tām, lai arī uz šo kompāniju rēķina iegūtu attiecīgās auditorijas uzmanību (Bosko, 2003: 164).

Veidojot filmas mārketinga plānu, nozīmīga vieta ir jāatvēl jau iepriekšminētajām interneta iespējām. Ir daudz veiksmīgu piemēru, kad, vēl neesot uzfilmētam ne kadram un esot bez jebkāda budžeta, tiek izveidotas filmu mājaslapas un sociālo mediju konti, kuri reklamē šāda projekta esamību. Šāda proaktīva rīcība var panākt finansējuma iegūšanu, filmēšanas komandas atrašanu, mediju uzmanības piesaistīšanu, kā arī pat izplatīšanas līgumu noslēgšanu ar ārvalstu kompānijām, un tas filmas veidotājam var prasīt tik vien kā interneta vietņu uzturēšanas izmaksas. „Ir vērts apskatīt šādu filmu mājaslapas un aizgūt idejas, kuras tālāk izmantot savam projektam, protams, iztiekot bez plaģiātisma” (Clevé, 2006: 51). Šādām vietnēm ir jābūt profesionālām, tehnoloģiski kvalitatīvām, ar saistošiem vizuāliem un skaņas elementiem, un viegli atrodamai kontaktu sadaļai. Šobrīd un vismaz tuvākajos gados aktivitātes internetā būs jāierindo pie primārajām mārketinga komunikācijas aktivitātēm.

Visbeidzot, lielisks veids, kā filmai iegūt tieši starptautisku uzmanību, ir dalība festivālos un filmu tirgos. “Sākotnēji festivāli tika veidoti, lai izrādītu jaunas un oriģinālas neatkarīgās filmas auditorijai, kas augstu novērtē filmas māksliniecisko izpildījumu, tomēr tagad filmu festivāli ir kļuvuši par pārdošanas tirgiem un publicitātes paņēmieniem lielai daļai visu veidu filmu, kuras ir mērķētas uz vispārējo auditoriju. Mūsdienās festivāli ir piemeklējami ikkatriai filmai. Tomēr ir svarīgi piedalīties tajos festivālos, kas dos tiešu labumu filmas virzīšanā” (Hill, O`Sullivan, & O`Sullivan, 2003: 214).

Biznesa pamatprincipi nosaka – ja produkts ir interesants, kvalitatīvs un atbilstošs prasībām, tas viegli padosies mārketingam. Kino nozarē, kur produkts ir filma, šie nosacījumi saglabājas, tomēr jāņem vērā vēl citas nianšes. Lai veiksmīgi veidotu filmu mārketingu, it īpaši neliela budžeta apstākļos, ir jāatrod īpaša pieeja auditorijai, tas ir smags un laikietilpīgs darbs. Tomēr, ja vien filmas

veidotāji vēlas, lai viņu filma taptu populāra pēc iespējas lielākā auditorijā, tad mārketinga ir neatņemama filmas projekta sastāvdaļa. Pasaulē ir tapušas neskaitāmi daudzas konkurētspējīgas mazbudžeta filmas, taču to veiksmi ir kavējusi filmu veidotāju nepilnīgā, nepareizā vai vispār neesošā mārketinga stratēģija. Kopumā, ar retiem izņēmumiem, Latvijā filmu veidotāji ar mārketinga aktivitātēm nodarbojas visai pasīvi, tādējādi rodas jautājums – no kā ir atkarīga šāda tendence? Turpmākajā pētījuma daļā tiks apskatītas Latvijas filmu mārketinga aktivitāšu tendences, lai izveidotu konceptuālu skatījumu uz latviešu filmu mārketinga attīstīšanas iespējām gan valstī, gan starptautiskajā tirgū.

Latvijas producentu pieredze filmu virzīšanā starptautiskajā tirgū *The experience of Latvian producers promoting films in the international market*

Mūsdienu globālajā laikmetā Latvijas filmu veidotājiem ir svarīgi atcerēties, ka tiek konkurēts ar visu pasauli, tādēļ ir nepieciešams atšķirties, nevis būt kādam līdzīgam. Nav nepieciešams ne būt līdzīgiem Eiropas, ne Krievijas, ne Amerikas kinomākslai. Latvijai, tāpat kā visām citām valstīm un kultūrām, ir savas kino veidošanas tradīcijas, kas ir unikālas, ir savi vecmeistari, no kuriem mācīties jaunajiem kino talantiem un veidot mūsdienīgu kino Latvijā, piekopjot tradīcijas un nebaidoties eksperimentēt, lai atšķirtos. Kino ir ietekmīga māksla, kas veido Latvijas tēlu pasaulē, tādēļ ir svarīgi sevi parādīt kā oriģinālu un konkurētspējīgu industrijas pārstāvi. Tomēr tikpat svarīgi ir arī nopelnīt naudu ar filmu, jo tas ir bijis daudzu cilvēku darbs, laiks un resursi, tādēļ filmai vajadzētu būt ne tikai mākslinieciski vērtīgai, bet arī pelnīt spējīgai. Lai noskaidrotu, kā ir raksturojams Latvijas filmu mārketinga starptautiskajā tirgū, autore veica izpēti, intervējot vairākus nozares profesionāļus – Nacionālā Kino centra (turpmāk arī – NKC) pārstāvjus un producentus.

Producente Alise Ģelze izšķir divus ceļus, kādā veidā tiek izplatīts valsts vārds pasaules kino tirgū. Pirmkārt, tās ir pašas filmas, ar kurām tiek apzināti vai neapzināti veidots kopējais industrijas mārketinga. Piemēram, Rumānijas kino nozarei naudas neesot vispār, taču ir ļoti spilgtas personības, režisori, līdz ar to rumāņu filmas un to režisori vienmēr ļoti labi figurē starptautiskajā vidē. Otrkārt, kas vairāk raksturīgi Skandināvijā, arī Francijā un Vācijā, ir atsevišķas institūcijas, kuras būvē šo publicitāti, piemēram, festivālos tiek veidoti īpaši skandināvu filmu forumi vai filmu izlases, un to visu kopīgiem spēkiem organizē skandināvu valstis. Bieži vien tas ir iemesls, kādēļ tik grūti atšķirt, piemēram, norvēģu filmas un zviedru filmas no dāņu filmām utt. Arī Baltijas valstīs vienu laiku tas bija ļoti raksturīgi – rīkot kopējos Baltijas festivālus, forumus, dažādus pasākumus. Apmēram pirms desmit gadiem bija vairāki mēģinājumi iezīmēt Baltijas reģionu kā vienotu filmu industriju, tomēr pēdējos piecos gados šī

tendence ir mazinājusies, un vairāk iezīmējas vēlme atdalīties un konkurēt. Igaņu filmu veidotāji ir izveidojuši spēcīgu tēlu, Latvija un Lietuva nedaudz atpaliek. Skaidrs arī, ka mārketingu nevar izveidot, ja valstī nav iespējams saziņot pazīstamus režisorus, labas filmas. Ļoti spēcīgi var izjust izcilu kino personību ar starptautisku potenciālu trūkumu. „Starptautiska vide ir starptautiskas iespējas, tomēr ir jāsaprot, vai produkts ir tā vērts, lai tas varētu būt veiksmīgi virzīts starptautiskajā tirgū”, atzīst NKC programmas *Media Desk* vadītāja Lelde Ozola.

Madara Melberga, filmu studijas “FA Filma” producente, iesāk interviju ar kādas *Creative Europe* darbinieces vārdiem: „Latvija vēl nav uz pasaules kartes”. Viņa papildina šo atziņu, sakot, ka Latvijai nav bijis „jaunais vilnis” kino nozarē ar režisoriem, kuri sevi pierādījuši ar labām filmām, kāds bijis, piemēram, Igaunijā un Rumānijā. Kā atzīst NKC pārstāve Astra Spalvēna, latviešu filmu veidotāji vēl nav nonākuši līdz tam, lai pilnībā apzinātos, cik svarīgs ir starptautiskais mārketingu Latvijas filmu virzīšanai starptautiskajā tirgū. A. Spalvēna izvirza trīs pamatlīstas, kas pietrūkst filmu nozarei Latvijā, lai tiku attīstīta veiksmīga mārketinga komunikācija: 1) pietiekams finansējums; 2) īpašas prasmes; 3) apzināšanās, ka tāds mārketingu vispār ir nepieciešams.

Protams, finansējumam ir liela nozīme, pret ko atdurās daudzas problēmas Latvijā. Kā jau zināms, Latvijā naudas līdzekļi ir ļoti ierobežoti – Kultūrkapitāla fonds atbalsta dažādus „mazos” projektus (studentu filmas, īsfilmas utt.), kamēr NKC sadala finansējumu lielākiem filmu projektiem to attīstīšanai, īstenošanai un pēcapstrādei. Tomēr, pēc A. Spalvēnas domām, lielākie izdevumi sākas tieši pēc filmas sagatavošanas, kad nepieciešamas mārketinga aktivitātes. Finansējuma problēmas ir tik lielas, ka notiek cīņa pat par to, lai dažas filmas vispār taptu pabeigtas, tādēļ neizbēgami rodas problēmas ar mārketinga aktivitātēm, jo tam pavisam vienkārši neatliek naudas. Kā uzskata A. Spalvēna, tas ir liels izaicinājums producentiem, jo nepieciešams piesaistīt papildu naudas līdzekļus, un tam attiecīgi ir nepieciešamas iemaņas, zināšanas, prasme ieraudzīt dažādas likumsakarības, un šādas īpašības bieži vien nozares speciālistiem trūkst. Latviešu filmu veidotājiem ir ļoti raksturīga „mācīšanās no kļūdām” metode, taču kļūdu ir patiesi daudz un ne vienmēr šī mācīšanās patiešām ir notikusi, tādēļ šajā ziņā ir novērojama stagnācija.

Latvijas Kinoproducentu asociācijas vadītāja Aija Bērziņa atzīst, ka liela nozīme Latvijas filmu virzīšanā starptautiskajā tirgū ir starptautiskajiem festivāliem, no kuriem Eiropā lielākie un nozīmīgākie ir Kannu festivāls Francijā un Berlīnes filmu festivāls Vācijā, tajos ar saviem ražojumiem katru gadu piedalās vairākas Latvijas filmu studijas un to pārstāvji. Statistiku par Latvijas filmu dalību starptautiskos festivālos iespējams aplūkot 1. tabulā.

1. tab. Latvijas filmu balvu skaits starptautiskos festivālos (NKC)

Table 1 The number of awards for Latvian films at international festivals (NFC)

Gads	Festivālu skaits	Valstu skaits	Balvu skaits	Apbalvotākās filmas
2016	150	53	45	“Es esmu šeit” – 22 balvas, “Saules staros” – 20 balvas
2015	164	45	19	“Modris” – 2 balvas, “Ausma” – 1 balva, “Saules staros” – 3 balvas,
2014	208	49	31	“Mammu, es tevi mīlu” – 5 balvas, “Modris” – 2 balvas, “Spēlmanis” – 4 balvas
2013	350	64	45	“Eži un lielpilsēta” – 10 balvas, “Mammu, es tevi mīlu” – 8 balvas, “Miglā” – 7 balvas, “Kora turneja” – 5 balvas

L. Ozola uzskata, ka tieši festivāli latviešu filmām ir vislabākā iespēja, kā iekarot starptautisko auditoriju, turklāt pēdējos gados ir vērojama tendence, ka festivāli ieguvuši izteiktu komerciālu nozīmi, vienlaikus kļūstot arī par filmu tirgiem. Festivālos latviešu filmām ir liels potenciāls, jo latviešiem ir tendence veidot filmas šaurai auditorijai, daudz retāk tiek ražotas komerciālas filmas plašai auditorijai. Un festivālos, kā zināms, netiek izrādītas komerciālās filmas, bet gan filmas ar augstu pievienoto mākslas vērtību, kas latviešu filmām bieži ir raksturīgi.

Ar to vien, ka filma ir tikusi līdz festivālam, viss nebeidzas, jo ir nepieciešami līdzekļi starptautiskajam mārketingam – reklāmas laukumiem, afišām, starptautiski zināmiem izplatītājiem utt., atzīst A. Spalvēna. Bez tā visa filma draud pazust. Latviešu filmu veidotāji nereti izvēlas piesaistīt starptautiskos izplatītājus, kuri, protams, ir dažādi – vieniem vajag tikai “vieglu” naudu, kamēr citi patiešām ir respektabli un vērā ņemami. Summa, kādu šādi izplatītāji prasa, nav maza, tomēr viņi tad nu attiecīgi strādā ar šīs filmas publicitāti – noskatās filmu, novērtē to, un virza starptautiskā līmenī. Lielajos festivālos ir svarīgi, cik daudzi cilvēki ir redzējuši filmu, un kā tā bijusi novērtēta, tāpat arī, vai šie cilvēki tikuši uzaicināti uz filmas pirmizrādi utt. – tā ir attiecību veidošana, un tas atmaksājas, un, protams, jo respektablāks un pieredzējušāks ir izplatītājs, jo vairāk viņam ir kontaktu un jo lielāka iespēja, ka filma iegūs popularitāti.

Nokļūšana festivālā bieži vien ir filmas atspēriena punkts, taču jāatceras, ka tajā ir jāiegulda līdzekļi, zināšanas, resursi, ir jādomā stratēģiski. Latviešu filmu aktivitātes festivālos Madara Melberga vērtē ļoti atzinīgi, uzsverot, ka esot labi organizēti stendi, it īpaši Kannu festivālā, kuru finansiāli atbalsta Latvijas Investīciju un attīstības aģentūra (LIAA), taču tai pašā laikā vislielākā problēma esot tieši cilvēkos, jo aiz šiem stendiem pietrūkstot tieši harismātiskākas un izglītotākas personas, komunikablāki cilvēki, jo šādos pasākumos svarīgākais ir

attiecību veidošana, lobījs, kas ir galvenais darbs, lai panāktu filmas virzīšanos un popularitāti šajā vidē.

Pašlaik, ņemot vērā, ka Latvijas filmu nozare un tās produkti ir maz pamanāmi pasaules kino vidē, ir vērojama arī maza interese no starptautiskiem atbalstītājiem. Tiklīdz filmas no tirgus viedokļa kļūs interesantākas, tas nenoliedzami tiks pamanīts arī pasaulē, un atradīsies fondi, kuri vēlēšies sniegt atbalstu augošai un interesantai industrijai. Tāpat arī palielinātos dažādu kopprodukciju īpatsvars – kopīgi filmu projekti ar citām valstīm, kas nozīmē lielāku budžetu un lielāku auditoriju.

Apkopojot nozares speciālistu intervijās iegūto informāciju, var secināt, ka pašlaik nozarē trūkst izcilas kino personības ar starptautisku potenciālu, kuras Latvijas filmu nozarē spētu aizsākt jaunas filmu veidošanas un arī mārketinga tendences. Latviešu filmu veidotāji vēl tikai sāk apzināties, cik svarīgs ir mārketinga filmu virzīšanai starptautiskajā tirgū, taču pietrūkst nepieciešamās zināšanas, iemaņas, kā arī izpratne par mārketinga nozīmīgumu. Protams, visi intervējamie kā vienu no iemesliem, kādēļ tik vājš mārketinga, min finansiālā atbalsta trūkumu, nelielos filmu budžetus, no kuriem ļoti sarežģīti ir atrast daļu mārketinga aktivitātēm. Taču, lai arī Latvijas filmu nozarei jau ilgstoši ir lielas finansiālās grūtības, autoresprāt, nav produktīvi tik ļoti koncentrēties uz naudas trūkumu, tā vietā vajadzētu meklēt kādus radošus risinājumus, kas attīstītu filmu mārketingu.

Secinājumi **Conclusions**

Kopumā jāsecina, ka filmu mārketinga Latvijā nav pietiekami attīstīts, tomēr tas nenozīmē, ka netiek veiktas aktivitātes, lai starptautiskajā tirgū virzītu saražotās filmas. Pamazām pieaug tendence veidot filmas, kas sevī apvieno gan mākslinieciskumu, gan arī komerciju, tādā veidā filmas spēj veiksmīgāk konkurēt starptautiskajā vidē – tiek atzītas festivālos un vienlaikus uzrunā plašu auditoriju. Vislielākā nozīme Latvijas filmu virzīšanai starptautiskajā tirgū ir festivāliem, no kuriem Eiropā lielākie un nozīmīgākie ir Kannu festivāls Francijā un Berlīnes filmu festivāls Vācijā, tajos katru gadu ar saviem ražojumiem piedalās vairākas Latvijas filmu studijas un to pārstāvji. Tomēr – lai arī pēdējo desmit gadu laikā Latvijas filmu starptautiskā atpazīstamība ir kļuvusi lielāka, rādītāji pa gadiem ir svārstīgi un nepastāvīgi.

Pastāv trīs pamata faktori, kas rada lielākās problēmas Latvijas filmu mārketingā – neapzināšanās, ka mārketinga vispār nepieciešams, nepieciešamo prasmju trūkums un ierobežotais budžets. Latvijas filmu producenti paši nodarbojas ar mārketinga īstenošanu un filmu virzīšanu, lai gan viņiem lielākoties nav nedz izglītības, nedz arī atbilstošas pieredzes un prasmju, lai to darītu.

Apkopojot pētījuma rezultātus, autores piedāvātie risinājumi situācijas uzlabošanai būtu vairāki:

- filmu nozares vadošajām organizācijām, piemēram, Nacionālajam Kino centram vai Kinoproducentu asociācijai nepieciešams attīstīt izglītības programmas vai kursus, lai izglītotu gan esošos, gan topošos filmu veidotājus un citus nozares pārstāvjus par filmu mārketinga nepieciešamību un mūsdienīgām pieejām tā īstenošanā;
- izveidot specializētu filmu mārketinga aģentūru, kas nodarbotos ar filmu mārketinga izpēti, vietējo un starptautisko kampaņu izstrādi, virzot un popularizējot gan latviešu filmas, gan nozari kopumā; ar to jānodarbojas mārketinga un reklāmas speciālistiem sadarbībā ar Nacionālo Kino centru, Kinoproducentu asociāciju un Kinematogrāfistu savienību;
- ņemot vērā finansiālās iespējas, veidojot filmas projektu, tāmē kā atsevišķu pozīciju iekļaut mārketinga speciālistu, kurš pilnībā nodarbotos ar filmai nepieciešamajām mārketinga aktivitātēm (vai vismaz konsultētu tās), veidojot profesionālu filmas virzīšanu gan vietējā, gan starptautiskā līmenī.

Summary

Overall, it has to be concluded that film marketing in Latvia is not developed sufficiently, however that does not mean efforts are not undertaken to promote locally produced films in the international market. The growing trend of films that incorporate both artistic and commercial qualities has led to better competitive success on the international scene – the films gain recognition at festivals and engage large audiences. The promotion of Latvian films in the international market is most significantly impacted by festivals, of which the largest and most notable European ones are the Cannes Festival in France and the Berlin Film Festival in Germany; every year several Latvian film studios and their representatives participate in these festivals with their productions. Despite the increased international recognition of Latvian films over the past decade however, metrics have been inconsistent and variable from year to year.

There are three basic factors that create the largest problems in Latvian film marketing – unawareness of the necessity of marketing, lack of necessary promotion skills, and limited budgets. Latvian film producers tend to work on the marketing and promotion themselves, despite usually lacking the correct education, expertise, and skills to do so.

Concluding from the results of this research, the author has several proposed solutions for improving the state of film marketing:

- the leading organisations of the Latvian film industry, such as the National Film Centre or the Film Producers Association, need to develop educational programs or courses for educating current and future film producers and other members of the industry on the necessity of film promotion and on contemporary approaches to film marketing;
- the development of a specialised film marketing agency which would undertake film promotion research and develop local and international campaigns to promote

- Latvian films and the industry as a whole; marketing experts should work on this in collaboration with the National Film Centre, the Film Producers Association, and Latvian Filmmakers Union;
- depending on finances, film project proposals should include the position of a marketing specialist who can oversee the necessary promotional activities for the film (or at least consult on them), developing professional promotions for the film both on a local and international level.

Literatūra **References**

- Bosko, M. S. (2003). *The complete independent movie marketing handbook*. Los Angeles: Michael Wiese Productions.
- Clevé, B. (2012). *Film Production Management. 3th Edition*. Oxford: Elsevier.
- Hill, L., O`Sullivan, C., & O`Sullivan, T. (2003). *Creative arts marketing*. Oxford: Heinemann.
- Joseph, S. (2014). Movie Marketing moves into the digital age. *Business Source Complete*, 2/25/2014. Retrieved from <https://www.marketingweek.com/2014/02/03/movie-marketing-moves-into-the-digital-age/>
- Joshi, A. M., & Hanssens, D. M. (2009). Movie Advertising and the Stock Market Valuation of Studios: A Case of „Great Expectations”. *Marketing Science*, March 1, 2009, pp. 239-249.
- Kerrigan, F. (2010). *Film Marketing*. Oxford: Elsevier.
- Kerrigan, F., Fraser, P., & Ozbilgin, M. (2004). *Arts Marketing*. Oxford: Elsevier.
- Kotler, F., & Armstrong, G. (2011). *Principles of marketing. 14th Edition*. New Jersey: Pearson.
- Rousseau, J. (2013) Planning a film marketing campaign. *How Moving Marketing Works*, weblog. Retrieved from <http://howmoviemarketingworks.com/2013/05/30/planning-film-marketing>

GRAFISKĀ DIZAINA IESPĒJAS INTEGRĒTAI PIEEJAI MUZEJOS MĀKSLAS VĒRTĪBU REPRODUCĒŠANĀ

Graphic Design Opportunities for Integrated Approach in Museums in Reproduction of Art Treasures

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Abstract. Latest tendencies in museum accessibility, both in the world and in Latvia, show that the social status of museums is changing from a cultural institution for a narrow circle of interested persons to a meeting place open to society, accessible both intellectually and physically to different social groups. The research aim is to study the opportunities for the use of graphic means to disclose and give access to the collection of artistic property of Latgale Culture and History Museum (LCHM) to persons with vision impairment. With the information summarised, the authors invite to use the opportunities of graphic design and technologies in the creation of art reproductions, making the graphic image of the painting perceptible by touch, i.e. tactile, and thus accessible to persons with visual impairment. The novelty of the research on the scale of Latvia will be a supplement of tactile images to the album of the collection of art reproductions of LCHM, which includes tactile graphic images and corresponding descriptions in Braille for persons with vision impairment. At this stage of the research, empirical methods were used – interview and practical activity.

The aim of the research: Study and research graphic design opportunities for the integrated approach in museums in the reproduction of existing art property to ensure its accessibility to persons with vision impairment, analyse the needs of the visually impaired in cooperation with societies and organisations in Latvia and design a scheme of practical activities for persons with vision impairment.

Keywords: graphic design, tactile graphics, tangible perception, visual impairment, integrated approach.

Ievads

Introduction

Pēdējā laika tendences gan pasaulē, gan Latvijā muzeju pieejamības jomā liecina par to, ka muzeju sociālais statuss mainās no šaura loka interesentu

kultūras iestādes uz sabiedrībai atvērtu, gan intelektuāli, gan fiziski pieejamu dažādu sociālo grupu satikšanās vietu (Fleming, 2013: 57).

Redzīgs cilvēks visbiežāk nav pievērsis uzmanību tām problēmām, ar kurām sastopas redzes invalīds savā ikdienā, lai pārvietotos uz ielas, apgūtu zinības skolā vai iegūtu informāciju. Kopējā tendence pasaules mērogā uz iekļaujošu sabiedrību un tās dažādības respektēšanu iedrošina arī cilvēkus ar redzes traucējumiem būt sabiedriskiem, neslēpties noslēgtā vidē, apgūt jaunu pieredzi un prasmes. Pēc autoru domām, šis pieprasījums pēc informācijas un zināšanām nosaka to, ka redzīgajiem sabiedrības locekļiem ir jāspēr solis pretim cilvēkiem ar redzes traucējumiem un jāpadara viņiem pieejamas vērtības, kas pamatā ir vizuāli uztveramas un nav viņiem izzināmas bez pārveides vai papildus satura skaidrojuma (Dundure & Apele, 2016).

Integrēta pieeja mākslas vērtību reproducēšanā ietver sevī mākslas darba pārnesumu (tulkojumu) taktīlā attēlā, vienkāršojot kompozīcijas elementus, padarot skaidrāku to savstarpējo saistību un uztveri.

Pasaules pieredze muzejos mākslas vērtību pieejamības nodrošinājumā vājredzīgiem un neredzīgiem cilvēkiem sākotnēji balstās uz izstāžu un ekspozīciju veidošanu, kurās ir eksponēti telpiski mākslas objekti. Šie eksponāti tiek pielāgoti taustes uztverei, tiem tiek darinātas kopijas vai dublikāti. Endrjū Alvarešs (*Andrew Alvarez*), muzeju konsultants pieejamības jomā savā ziņojumā "Lūdzu pieskarties: taktīlās apmācības pielietojums mākslas objektu izstādēs" (Alvarez, 2005) uzsver pieskaršanās pieredzes, taustes uztveres un objektu pārvietošanas prasmes nozīmi katra cilvēka dzīves sākumposmā, kad vēl nav attīstījusies spēja uztvert ar redzi, prasme klausīties un lasīt. Lielākajam vairumam cilvēku, kas augot un attīstot savu sensoro uztveri, apkārtējo vidi uztver pārsvarā ar redzi, taustes uztvere un pieskaršanās paliek otrajā plānā un kalpo kā palīgīdzeklis objektu virsmu un faktūru iepazīšanai. Autors apraksta mākslas objektu izstādes, kurām viņš ir bijis kurators, Volverhemptonas mākslu un muzeju apvienības Mākslas galerijā (*Wolverhampton Arts and Museums Service Art Gallery*) un Bilstonas Amatniecības galerijā (*Bilston Craft Gallery*), sniedz izstāžu norises gaitas un apmeklētāju atsauksmju rezultātu vērtējumu un izdara secinājumus, ka pieskaršanās mākslas objektiem ir aizraujoša un vērtīga visām apmeklētāju grupām, neskatoties uz vecumu vai uztveres īpatnībām, palīdz saprast un pat izaicina pārvērtēt vizuāli izdarītos spriedumus vai dzirdēto, kas ir parastā pieredze muzejos. Taustes pieredze, pirmkārt, atmodina cilvēkā sen aizmirstas sajūtas no agras bērnības, kas kādreiz ir palīdzējušas iepazīt apkārtējo vidi ar kustību un taustes palīdzību, un, otrkārt, sniedz atbildes uz zinātkāru bērnu parastajiem jautājumiem: kas tas ir? un kāpēc tas vajadzīgs? (Alvarez, 2005).

Šī pētījuma mērķis ir apzināt iespējas, kā ar grafiskiem līdzekļiem atklāt un padarīt pieejamas Latgales Kultūrvēstures muzeja krājuma **mākslas vērtības**

cilvēkiem ar redzes traucējumiem. Savāktā un apkopotā informācija autores rosina izmantot grafiskā dizaina un tehnoloģiju iespējas reproducētu mākslas darbu attēlu izveidē, padarot gleznas grafisku attēlu taustāmu jeb taktilu, tādējādi - pieejamu cilvēkam ar redzes traucējumiem. Taustāma attēla radīšana ir tikai pirmais solis, kas jāspēr mākslas darba pasniegumā vājredzīgiem un neredzīgiem cilvēkiem. Tālāk seko šī attēla apraksta izveide ar iespēju to izlasīt gan Braila rakstā, gan noklausīties audio failā. Tikai šāda kompleksa jeb multimodāla pieeja mākslas darba pasniegšanā būs pilnvērtīga un bagātinās uztveres iespējas mērķauditorijai. Pētījuma novitāte Latvijas mērogā būs taustāmu attēlu pielikums LKM krājuma mākslas reprodukciju albumam, kas ietver sevī taktilās grafikas attēlus un tiem atbilstošus aprakstus Braila rakstā cilvēkiem ar redzes traucējumiem.

Raksta mērķis: Apzināt un izpētīt grafiskā dizaina iespējas integrētai pieejai muzejos esošo mākslas vērtību reproducēšanā, lai nodrošinātu to pieejamību cilvēkiem ar redzes traucējumiem, analizēt neredzīgu un vājredzīgu cilvēku vajadzības sadarbībā ar biedrībām un organizācijām Latvijā un izstrādāt praktisko nodarbību shēmu cilvēkiem ar redzes problēmām. Pētījuma gaitā kā pētniecības metode tika izmantota intervija.

Neredzīgu un vājredzīgu cilvēku vajadzību analīze sadarbībā ar biedrībām un organizācijām Latvijā

Analysis of the needs of persons with vision impairment in cooperation with societies and organisations in Latvia

Lai saprastu tādas vai citas sabiedrības grupas vajadzības tieši muzeju piedāvājuma sfērā, ir nepieciešams veikt izpēti, konsultēties, uzturēt kontaktus ar kopienu pārstāvjiem, veikt testēšanu, visbeidzot, ieviest jaunus pakalpojumus, kas orientēti tieši uz paredzēto mērķauditoriju. Pētījums prasa starpdisciplināru pieeju tēmai, kas ietver sevī pedagoģijas, psiholoģijas, sociālo zinātņu, muzeoloģijas un mākslas vēstures jomas. Lai varētu pilnvērtīgi iepazīt vājredzīgu un neredzīgu cilvēku apkārtējās vides un pasaules uztveres īpatnības, pētījums apskata arī speciālo zinātņu apakšnozares kā tiflopsiholoģija un tiflopedagoģija. Taču jāatceras, ka universāla pieeja visiem cilvēkiem ar redzes problēmām nebūtu pareiza, tāpēc te ir ļoti svarīga individuāla pieeja katram cilvēkam, jo arī katrs vājredzības vai neredzības gadījums ir atšķirīgs. Ar ciešāku sadarbību starp kopienu un muzeju varētu panākt labāku cilvēku ar redzes invaliditāti iekļaušanos muzeja apmeklētāju lokā (Dundure & Apele, 2016).

Lielākā daļa pasaules sabiedrības, protams, ir redzīgi cilvēki, taču turpat blakus dzīvo un strādā vājredzīgi vai neredzīgi sabiedrības locekļi. Pēc statistikas datiem aptuveni 120 miljoni cilvēku uz pasaules ir ar redzes pataloģijām un apmēram 40 miljoni no tiem ir pilnīgi neredzīgi. 1,4 miljoni bērnu līdz 14 gadiem

pasaulē ir neredzīgi vai vājredzīgi (Landra, 2015). Pēdējie publiskotie dati no Slimību profilakses un kontroles centra par pirmreizēji iegūtu invaliditāti Latvijā par 2016. gadu atklāj statistiskos skaitļus par acu un to palīgorgānu slimību izraisīto invaliditāti pieaugušo un bērnu vidū. Tā saskaņā ar šiem datiem 2016. gadā 708 pieaugušie ir kļuvuši par redzes invalīdiem, 403 no viņiem ir sievietes, bet, skatoties no vecuma posmu viedokļa, lielākā daļa – 545 ir cilvēki pēc 60 gadiem. 2016. gadā par redzes invalīdiem pirmreizēji atzīti 24 bērni un lielākā daļa no viņiem – 17 ir vecumā no dzimšanas līdz 6 gadiem (Slimību profilakses un kontroles centrs, 2016).

Latvijas Neredzīgo bibliotēkas Braila rakstā reproducētā un uz mikroapsulu papīra pārnestā Laimas Locānes grāmata ir piemērs darbam, ko savā kopienā veic vājredzīgu un neredzīgu cilvēku atbalsta organizācijas un iestādes. LNerB ne tikai apkalpo lasītājus, veic izglītojošo darbu, bet arī nodarbojas ar grāmatu reproducēšanu Braila rakstā nelielā eksemplāru skaitā. Bibliotēkas sagatavotās grāmatas nonāk visās tās septiņās filiālbibliotēkās Latvijā.

2011. gadā Latvijā tika izveidota grāmata: taktils Ineses Zanderes dzejas izdevums „Dieguburti”, kas paredzēts cilvēkiem ar redzes invaliditāti. Šīs grāmatas mērķauditorija ir gan bērni, gan viņu vecāki, kā arī speciālisti - metodiķi. Grāmatas pamatā ir dzejnieces Ineses Zanderes un mākslinieces Ūnas Laumanes radoši noformēts krājums ar diegu izšūtiem burtiem (Hmeļevska, 2013).

Savukārt 2012. gadā, ar „Latvijas Neredzīgo bibliotēkas” (LNerB) iniciatīvu un pieaicinot brīvprātīgos palīgus, Latvijā šī pirmā taktilā burtu grāmata tika reproducēta Braila rakstā, un tai speciāli ar rokām tika darinātas kolāžas tehnikas burtu ilustrācijas. Kopā tapa 8 grāmatas eksemplāri. Par taktilo jeb taustāmo grāmatu to sauc tāpēc, ka lapas un uz tām attēlotās ilustrācijas ir veidotas no dažādiem materiāliem: atšķirīgas struktūras auduma, filca, plastmasas, koka u. c. Grāmatu galvenais mērķis ir ar taustes palīdzību iegūt informāciju no ilustrācijas (Bite, 2012).

Bibliotēka bieži vien pilda ne tikai grāmatu lasītāju apkalpojošo funkciju, bet arī kļūst par kopienas centrālo satikšanās vietu, kur pieejamas arī biedrības telpas un rehabilitācijas iespējas, kā tas ir Rēzeknē, LNerB filiālbibliotēkā. Atrāšanās vienā ēkā, no vienas puses, ir ērta un pārredzama, bet no otras – telpu trūkums ir ievērojams. Rēzeknes filiālbibliotēkā strādā divas darbinieces, nodrošinot apkalpošanu daudz plašākam lasītāju lokam nekā tikai Rēzekne un Rēzeknes novads – reģions plešas no Preiļiem līdz Zilupei.

Pētījuma turpinājumā autores aprakstīs savas tikšanās, intervijas un nodarbības vājredzīgu un neredzīgu cilvēku kopienās, konkrēti analizēs Strazdumuižas internātvidusskolā iegūto pieredzi, kas tika organizētas, lai izzinātu cilvēku ar redzes problēmām vajadzības un apkārtējās pasaules uztveres

īpatnības. Šīs tikšanās ir neatņemama pētījuma sastāvdaļa, kur empīriskā ceļā var nonākt pie izsvērtiem lēmumiem un vēlāmā rezultāta.

Intervijas un taktilo attēlu testēšana neredzīgu un vājredzīgu cilvēku kopienās

Interviews and testing of tactile images in the communities of the visually impaired

Lai sasniegtu izvirzīto pētījuma mērķi un vēlamo rezultātu, ir nepieciešams empīriskā ceļā izziņāt pētījuma subjekta – mērķauditorijas skatījumu uz pētījuma priekšmetu, gūt atziņas, ieteikumus, pieņemt atbilstošus lēmumus. Produkts, kas vērsts uz īpašu mērķauditoriju, šajā gadījumā vājredzīgiem un neredzīgiem cilvēkiem, nevar būt veiksmīgs bez tā pakļaušanas testēšanai, bez aprobācijas un lietojamības.

Pētniecības darba gaitā kā pētniecības metode tika izmantota metode intervija. Intervija kopā ar praktisko nodarbību tika atzīta par labāko metodi un lietota tāpēc, ka neredzīgu cilvēku kopienās ir ļoti dažādas Braila raksta lasīšanas un rakstīšanas prasmes. Neredzīgu cilvēku anketēšanai ir nepieciešama speciālista iesaistīšana, lai sagatavotu aptaujas anketu Braila rakstā, nodrošinātu anketas aizpildīšanas / rakstīšanas iespējas katram aptaujas dalībniekam un apkopotu aptaujas rezultātus. Sagatavotā anketa būtu neadekvāta visiem aptaujas anketas aizpildītājiem, to nevar veikt attālināti, jo mērķa sasniegšanai ir nepieciešami paskaidrojumi un būtības izpratne no mērķauditorijas puses. Mutiska intervija vienlaicīgi ar praktisku nodarbību, kur pats pētnieks fiksē atbildes un nodarbības gaitā izteiktos viedokļus tika izvēlēta kā atbilstoša. Taču arī šāda metode jālieto radoši, jo saskarsme ar neredzīgiem cilvēkiem prasa dialogu, iesaistīšanos. Tā nav statiska jautājumu uzdošana un konkrētu atbilžu saņemšana, tikai viedokļu apmaiņas ceļā ir iespējams iegūt vērtīgus ieteikumus nākošajam darba posmam. Praktiskā nodarbība ar pētnieka piedalīšanos ir nepieciešama, jo tās laikā notiek gatavo produktu – taktilo attēlu testēšana. Produkta testēšana nevar notikt bez pētnieka klātbūtnes, jo šāds produkts prasa paskaidrojumus un palīdzību pieredzētā izpratnē.

Pētnieces Terēza Landra un Sarmīte Tūbele savā pētījumā par taktilās grafikas tehnoloģijām atzīst, ka objekta divdimensiāla shematizācija taktilā attēlā neredzīgam cilvēkam bez paskaidrojuma varētu būt grūti saprotama, tāpat kā redzīgam cilvēkam bieži vien ir grūti interpretēt to, ko viņš redz (Landra & Tūbele, 2011). Intervijām un praktiskajām nodarbībām seko rezultātu apkopošana un secinājumu izdarīšana.

Tika sarīkotas divas praktiskās nodarbības ar intervijām: Strazdumuižas internātvidusskolā – attīstības centrā vājredzīgiem un neredzīgiem bērniem (Braila ielā 24, Rīgā) un Latvijas Neredzīgo bibliotēkas Rēzeknes filiālbibliotēkā

(Bukmuižas ielā 20, Rēzeknē). Abas tikšanās tika noorganizētas atšķirīgām auditorijām: 1) pamatskolas un vidusskolas jauniešiem un 2) pieaugušiem cilvēkiem pēc 40 gadiem. Katrai no šīm grupām ir nepieciešama citāda pieeja, viņu vecuma un izglītības atšķirību dēļ. Rakstā tiks aprakstīta un analizēta tikšanās tikai Strazdumuižas internātvidusskolā. Mūsdienu izglītības sistēmā vājredzīgiem un neredzīgiem bērniem Braila raksta mācīšana un apguve ir iekļauta programmā kā viena no pamatizglītības galvenajām sastāvdaļām, visi nodarbības dalībnieki no SIAC vājredzīgiem un neredzīgiem bērniem gan lasa un raksta, gan savā ikdienā lieto Braila rakstu. Citāda ir situācija neredzīgu pieaugušo cilvēku auditorijā. Pēc LNerB Rēzeknes filiālbibliotēkas vadītājas stāstījuma izriet, ka tikai nedaudzi cilvēki pēc 50 gadiem prot un lieto Braila rakstu. Bibliotēkas lasītāji pārsvarā iecienījuši audiogrāmatas, un vājredzīgie lasa arī redzīgo rakstā ar tiflotehniku, kas pieejama LNB Rehabilitācijas centrā, piemēram, speciālas lupas, kas projicē grāmatas tekstu vairākkārtīgā palielinājumā. Starp vājredzīgajiem lasītājiem ir iecienītas datorprogrammas, kas ir pielāgotas digitālu grāmatu lasīšanai.

Lai tiktos un strādātu ar SIAC vājredzīgiem un neredzīgiem bērniem, bija nepieciešama skolas vadības atļauja un tiflopedagoga klātbūtne. Uz rakstisku iesniegumu par iespēju tikties skolā un sarīkot nodarbību tika saņemta skolas direktores Ligitas Ģeidas atļauja. Nodarbībā kā pedagogs un eksperts piedalījās SIAC „Braila raksta un taktilās grafikas centra” metodiķe Terēza Landra. Ar T. Landras palīdzību tika noorganizēta bērnu uzaicināšana uz nodarbību, viņu informēšana par to, kas sagaidāms nodarbības laikā, telpas iekārtošana un asistēšana. Pētījuma autore sagatavoja nodarbības plānu un tekstu, kas domāts nodarbības dalībniekiem. Šo tekstu metodiķe T. Landra ar īpašu tulkošanas datorprogrammu pārtulkoja un izdrukāja Braila rakstā. Bērni jau nākot uz nodarbību, zināja, kas tajā sagaidāms. Nodarbībai tika sagatavoti taktilo attēlu komplekta (kopā septiņi zīmējumi) trīs eksemplāri ar aprakstiem pie katra zīmējuma Braila rakstā.

Tika noorganizēta 10 vecāko klašu skolnieku grupa, kur pieci jaunieši bija no 8. klases, divi – no 10. klases un trīs no 11. klases. Skolnieku grupa tika uzaicināta mērķtiecīgi – visi bērni bija neredzīgi, pieci no viņiem - no dzimšanas, pārējie redzi zaudējuši agrā bērnībā. Trīs jauniešiem ir redzes atlikums, kuru nevar izmantot, vienam ir minimāli izmantojams redzes atlikums. T. Landras ieteikums bija aicināt uz nodarbību vecāko klašu jauniešus, jo viņu redzesloks jau ir plašāks nekā jaunākajās, un sarunas par tādu specifisku jomu kā māksla ar pamatskolas un vidusskolas vecāko klašu jauniešu grupu varētu noritēt veiksmīgāk. Taktilus attēlus SIAC vājredzīgie un neredzīgie bērni lieto ikdienas mācību procesā, tāpēc jauniešu grafiskā kompetence ir labā līmenī un šādas grafiski pasniegtas informācijas uztvere viņiem nav sveša.

No tiflopedagoga puses tika ieteikts, izmantojot taktilos attēlus, nodarbībā aplūkot tikai vienu gleznu, jo divu vai vairāku gleznu apskate varētu būt pārāk sarežģīta, tā prasītu lielu piepūli un apgrūtinātu nevis ieinteresētu nodarbības dalībniekus. Laiks, kas tika atvēlēts nodarbībai, bija trīs mācību stundas ar diviem starpbrīžiem: īso – pēc pirmās nodarbības stundas un garo starpbrīdi pēc divām nodarbības stundām. Starpbrīži sakrita ar ierasto mācību stundu ritmu un skolas zvaniem par stundu sākumu un beigām. Šāds laika posms tika izvēlēts, lai nodarbība nebūtu jāsasteidz, lai skolēni bez steigas visu aptvertu un justos komfortabli. T. Landra atzīmēja, ka mācību procesā neredzīgiem bērniem viņu uztveres specifikas dēļ tiek ļauts visu apgūt lēnāk, veltot katram taktilajam attēlam vairāk laika. Ierašanās uz nodarbību bija brīvprātīga, taču pedagogi atzina, ka ar diviem jauniešiem bija jāpārrunā šīs nodarbības būtība, lai viņi saprastu un ieinteresētos. Uz nodarbību ieradās visi uzaicinātie jaunieši.

Pirms nodarbības tika iekārtota telpa – visiem jauniešiem tika paredzētas vietas ap vienu taisnstūra galdu. Galda vidū tika izveidotas divas priekšmetiskas klusās dabas nodarbības dalībnieku taustes uztverei pirms taktilo attēlu aplūkošanas.

Nodarbības norise:

1) *Iepazīšanās ar ievadu.*

Nodarbības dalībnieki: 10 vecāko klašu skolēni no 8., 10. un 11. klases, pedagogs, pētījuma autores – kopā 13 cilvēki. Visi skolēni – nodarbības dalībnieki bija neredzīgi, vienam jauniešim bija vērojams pavisam neliels redzes atlikums. Nodarbībā piedalījās 4 meitenes un 6 zēni.

Iepazīšanās laikā katrs jauniešis nosauca savu vārdu, vecumu un pastāstīja par savām interesēm. Astoņi jaunieši kā galveno aizraušanos nosauca mūziku, četri jaunieši vēl nosauca dzeju vai literatūru; trīs - teātri, trīs – kino, divi jaunieši pieminēja starp savām interesēm hip-hop stilu un fantastiku.

Pētījuma autores iepazīstināja ar sevi, savu darba vietu. Pirms intervijas un nodarbības uzsākšanas jauniešiem tika lūgta atļauja ierakstīt nodarbības norisi audio failā. Neviens no dalībniekiem iebildumu neizteica.

2) *Mākslas darba – gleznas – uztveres specifika, attēlojums plaknē, perspektīva.*

Nākošais posms ietvēra sevī pārrunas par to, kas ir mākslas darbs, kā tas var tikt attēlots, kā muzejs rūpējas par mākslas darbiem. Autores uzklusēja bērnu domas par mākslu, viņu zināšanas par to, kā top mākslas darbs. Tika pārrunāts **telpas perspektīvas attēlojums plaknē**, ko tā dod gleznas skatītājam.

3) *Klusās dabas žanrs glezniecībā. Piemēri un reālu priekšmetu iepazīšana ar tausti.*

Šajā nodarbības posmā tika pārrunāts **klusās dabas žanrs**, konkrēti priekšmeti, kuri var būt attēloti mākslas darbā. Jauniešiem ar taustes palīdzību tika piedāvāts iepazīties ar līdzīgiem priekšmetiem, kas būs skatāmi A. Egles

gleznā „Klusā daba”. Jauniešiem rokās tika doti priekšmeti aplūkošanai ar taustes palīdzību – māla krūze, māla vāzīte, trauks ar augļiem – vīnogām un āboliem (šim nolūkam tika sagādāti reāli augļi), šķīvis, nazis un drapērija. Katrs jaunietis iepazīnās ar visiem priekšmetiem, izjūtot to izmērus, formu, materialitāti.

4) *Mākslas darba mutisks apraksts, īss stāstījums par tā autoru – mākslinieku.*

Šajā nodarbības posmā tika mutiski aprakstīta A. Egles glezna „Klusā daba”. Paralēli reālu priekšmetu iepazīšanai ar tausti tika pārrunāts, kā priekšmeti izskatās A. Egles gleznā, kādus māksliniecišķās izteiksmes līdzekļus viņš ir lietojis mākslas darbā.

5) *Zīmējumu (taktilo attēlu) aplūkošana. Kompozīcija un priekšmetu izkārtojums plaknē.*

Jauniešu iepazīstināšanai ar gleznu tika izmantoti trīs taktilo zīmējumu eksemplāri un tik pat daudz aprakstu Braila rakstā. Ar apraktiem bērni tika iepazīstināti jau pirms nodarbības, lai tās laikā uzmanība tiktu koncentrēta uz taustes uztveri. Taču jebkurš no jauniešiem varēja atsaukt atmiņā tekstus ar paskaidrojumiem, tūpat nodarbības telpā pārlasot uzrakstīto. Tā kā 10 cilvēku grupa ir liela, tad klātesošais pedagogs palīdzēja strādāt ar jauniešiem, paskaidrojot redzamo taktilajos attēlos. Attēlu apskates gaitā jaunieši uzdeva jautājumus, izteica komentārus, tāpēc atmosfēra bija aktīva un lietišķa. Lai iesaistītu jauniešus sarunās, tika uzdoti jautājumi un saņemtas atbildes. Lai padarītu nodarbības gaitu vēl iesaistošāku, vienai no meitenēm tika lūgts visiem priekšā nolasīt pirms katra zīmējuma rakstīto paskaidrojumu Braila rakstā, ko jaunieši ļoti raiti izdarīja.

Taktilie attēli tika iepazīti secībā no vienkāršākā uz sarežģītāko zīmējumu, tos pakāpeniski nomainot. Šis nodarbības posms bija vislaikietilpīgākais, jo bija jāaplūko septiņi secīgi attēli. Katrs attēls tika numurēts, piešķirot tam cipara un burta zīmi no 1.a. līdz 1.f., kur cipars 1 nozīmē gleznas numuru, bet burta zīme – taktilo zīmējumu alfabēta secībā. Ja nodarbībā tiktu izmantoti vēl citas gleznas taktilie zīmējumi, tad to numerācija sāktos ar ciparu 2 – 2.a, 2.b utt.. Numuru un burtu zīmes tika iedrukātas attēlu augšējā labajā stūrī. Pirmais taktilais attēls ieguva savu numuru **1.a.** Šim attēlam, pēc sarežģītības pakāpes visvienkāršākajam, tika izveidoti divi varianti: pirmais - ar atstātu tīru laukumu galda virsmas kontūrā un otrais – ar faktūru aizpildīta galda virsma. Šādi varianti tika izveidoti, sekojot tiflopedagoga ieteikumam atstāt baltu laukumu kādā no zīmējuma daļām. Testējot šos abus variantus vairāki bērni atzina, ka baltais laukums viņiem palīdz saprast galda formu, bet citi nejuta lielu atšķirību uztverē starp balto un fakturēto variantu. Pirmajā taktilajā attēlā galvenais uzdevums bija saprast gleznas rāmja malas, tās **kompozīcijas** pamatelementus interjera attēlojumā – daļēji redzama galda virsmu istabas stūrī, pie sienas piekarinātas

gleznas apakšējo daļu, sienas plakni. Katram no elementiem tika veidota atšķirīga faktūra laukuma aizpildīšanai. Atšķirīgās faktūras, ko ierobežo kontūra, uzlabo katra elementa uztveri. Tika pārrunāts tas, no kā sastāv gleznas kompozīcija, kā piemēru vieglākai uztverei minot mūzikas skaņdarba kompozīciju. Tāpat tika pārrunāti **perspektīvas** attēlošanas paņēmieni gleznā, piemēram, kā pēc formas apaļš galds perspektīvas iespaidā kļūst par ovālu. Tika iepazīts ģeometriskās figūras – **elipses** pielietojums telpas perspektīvas attēlošanā mākslas darbā.

Nākošais taktilais zīmējums ar numuru **1.b** tika papildināts ar gleznā redzamo drapēriju. Nodarbības dalībnieki uzzināja, kā pēc gleznā attēlotu audumu sauc par **drapēriju**, kādā veidā mākslinieki to mēdz iekļaut klusās dabas kompozīcijā. Tagad bērniem bija jāsaprot, kur uz jau iepazītā galda virsmas tā atrodas, kā veidots drapērijas attēlojums, kā tiek parādītas krokas, tās kritums pāri galda malai. Lielāku piepūli skolēniem prasīja attēlotās drapērijas kroku uztvere, kā tās maina virzienu uz leju pāri galda malai.

Pēc kārtas trešais attēls ar numuru **1.c** papildina iepriekšējo ar diviem klusās dabas priekšmetiem – lielo māla krūzi un mazo māla vāzīti ar ziedu pušķi. Abi šie priekšmeti novietoti attēlā pa kreisi uz drapērijas. Nodarbības dalībniekiem bija jāatrod ievietotie priekšmeti un jāsaprot to forma, jāatšķir viens no otra. Jaunieši diezgan viegli tika galā ar lielās krūzes atpazīšanu, bet grūtāk nācās iepazīt mazo vāzīti ar ziedu pušķi. Nebija uzreiz saprotamas ziedu pušķa kontūras un vāzītes osiņas, tāpēc bija jāvelta vairāk laika šo elementu apskatei.

Pēc kārtas ceturtais zīmējums ar numuru **1.d** sevī ietver augļu trauka attēlojumu un uz galda brīvi saliktos ābolus. Augļu grupai tika nolemts veidot atsevišķu zīmējumu bez telpas un galda virsmas attēlojuma. Tas tika darīts tāpēc, ka augļu grupā ir daudz elementu, kurus ir jāiepazīst pakāpeniski, lai, ievietojot to nākošajā zīmējumā, būtu vienkāršāk saprast priekšmetu izkārtojumu. Jaunieši iepazīt vīnogu ķekaru attēlojumu, ābolu kontūras un to, kā izskatās viens aiz otra novietoti āboli. Nodarbības dalībnieki izteicās, ka viņiem patīk, kā ir attēlotas vīnogas, to ovālās formas vienmērīgs izcēlums, kas palīdz saprast vīnogu ķekaru aprises.

Nākošais attēls ar numuru **1.e** apvieno gandrīz visus klusās dabas kompozīcijas elementus: telpas attēlojumu ar galdu, drapēriju un māla traukiem, kam pievienota iepriekšējā attēlā iepazītā augļu grupa. Pamazām uztverot attēlu, jaunieši atrada un saprata augļu grupas – trauka ar vīnogām un āboliem – novietojumu jau iepazītajā kompozīcijā.

Pēdējais taktilais attēls **1.f** ietver sevī visu mākslinieka klusās dabas kompozīciju grafiskajā attēlojumā. Tajā nodarbības dalībniekiem bija jāiepazīst no jauna klāt nākušie priekšmeti – priekšplānā novietotais porcelāna šķīvis ar tam pieslietu nazi, kuram asmens ir vērsts uz augšu. Jaunieši uzzināja termina **priekšplāns** lietojumu mākslā. Jau vairākkārt uztverto elipses formu jaunieši viegli atrada, saprata to, kā grafiski tiek attēlots šķīvja dziļums un kā perspektīvas

iespaidā mainās naža attēlojums. Visu sešu attēlu ar vienu papildus variantu aplūkošana aizņēmu divas mācību stundas.

6) *Fokusgrupas diskusija par piedāvātās metodes efektivitāti. Jautājumi un atbildes.*

Nākošajā stundā pie tējas tases ar klusās dabas augļu baudīšanu notika sarunas un domu apmaiņa par to, kā noritēja praktiskā nodarbība. Katrs jauniešs tika aicināts izteikties, pastāstīt to, kas bija viegli saprotams, kas grūtāk, vai mākslas darba iepazīšana viņus ieinteresēja un vai viņi vēlētos atkārtot šādu nodarbību ar cita žanra vai stila mākslas darba iepazīšanu. Divi jaunieši atzina, ka viņus māksla kā interešu veids neaizrauj, ka viņi gribētu vairāk iepazīt mūziku. Pārējie atzina, ka iepazīt mākslas darbu ir interesanti un tika iegūta jauna informācija par mākslu kā radošu nodarbošanos, par mākslas darba uzbūvi. Tika secināts, ka reālisma stila mākslas darba kompozīcija ir labi saprotama, kad tā ir pārnesta taktīlā zīmējuma. Sarunās tika pieminēts abstrakcionisms, un jaunieši pauda savas domas, ko katrs ar šo vārdu saprot. Tika izteikts priekšlikums nākošajā nodarbības reizē apskatīt vairāk abstrakta stila mākslas darbu.

7) *Nodarbības noslēgums ar kopsavilkumu par paveikto.*

Kopsavilkumā tika izteikta doma, ka šāds gleznas pārnesums taktīlā attēlā dod priekšstatu par gleznas kompozīciju, tajā attēlotajiem priekšmetiem. Dažreiz faktūru lietojums ir lieks, mazi priekšmeti ir sarežģīti uztverami ar tausti. Jaunieši apstiprināja priekšlikumu, ka varētu tikties vēl kādā nodarbībā par mākslas darbu uztveri. Stāstījums un paskaidrojošais teksts palīdz taustes uztverē. Pats attēls ir kompozīcijas nesējs, bet stāstījumā var ietvert daudz vairāk, nekā spēj parādīt tikai līnijas un faktūras.

Secinājumi pēc nodarbības SIAC vājredzīgiem un neredzīgiem bērniem, iepazīstot gleznas pārnesumu taktīlos attēlos:

- gleznas reprodukcija, kas pārtulkota grafiskā zīmējumā, var tikt izmantota vājredzīgu un neredzīgu cilvēku izglītošanā;
- attēla formātam ir jābūt tādā, lai visi priekšmeti būtu skaidri nolasāmi, optimālais lapas izmērs ir A4 formāts;
- kopējam attēla laukumam ir jābūt aptveramam ar abām rokām, tas nedrīkst būt par lielu;
- faktūrām un līnijām ir jābūt skaidri izteiktām, lai tās ir atšķiramas;
- ir jābūt gan pilnīgi baltiem laukumiem, gan melniem, tie darbojas kā laukuma ieklājums;
- gleznu kompozīcijas, kurās ir daudz elementu, labāk ir sadalīt vairākos secīgos zīmējumos, pakāpeniski iepazīstinot skatītāju ar visām kompozīcijas sastāvdaļām;
- gleznas pārnesums taktīlos attēlos ir jālieto kopā ar aprakstu un stāstījumu, bez tiem – uztvere ir apgrūtināta.

Izdarot secinājumus par notikušo nodarbību, autores pārliecinājās, ka 10 satikto jauniešu grupa ir kā spoguļattēls sabiedrībai kopumā - daļa cilvēku interesējas par mākslas norisēm, daļa pati tajās piedalās, bet daļai - tās ir vienaldzīgas. Vairums no nodarbības dalībniekiem bija ieinteresēti un sekoja līdzī, aktīvi izteica viedokli. No tā var secināt, ka šāda veida sarunas par mākslu paplašina neredzīgu cilvēku zināšanas par vizuālo pasauli, viņi saprot terminu lietojumu, spēj tos paskaidrot. Autores uzskata, ka nodarbība noritēja veiksmīgi, un iesāktais darbs ir turpināms, izstrādājot nodarbību vājredzīgiem un neredzīgiem apmeklētājiem, tai skaitā bērniem, Latgales Kultūrvēstures muzejā. Cilvēku grupai līdz desmit cilvēkiem nepieciešamais izdales materiāls būtu uz diviem viens eksemplārs, lai darbs ritētu ar pilnu atdevi un nebūtu pauzes starp attēlu maiņu. Liels atspazds ir klāt esošais tiflopedagogs, kurš palīdz rast kontaktu ar bērniem un asistē viņu taktīlās uztveres procesā.

Secinājumi **Conclusions**

Muzejos glabāto mākslas vērtību pieejamības nodrošināšana vājredzīgiem un neredzīgiem cilvēkiem ir jauns un komplikēts darbības virziens komunikācijas jomā ar sabiedrības kopienām, kas prasa no muzeju darbiniekiem inovatīvu pieeju un neatlaidīgu darbu pašu un sabiedrības attieksmes maiņā pret citādo un atšķirīgo. Pozitīva attieksme un atbilstošs piedāvājums mazina dažādu sabiedrības kopienu izolētību un veicina iekļaušanos kultūras un mākslas dzīves norisēs.

Kopumā ir jāsecina, ka

- straujas digitālo tehnoloģiju attīstības rezultātā, ir mainījies tehniskais nodrošinājums mākslas darbu pasniegumā vājredzīgiem un neredzīgiem cilvēkiem, tas veicina pētījumu par neredzīgu cilvēku mākslas uztveri zinātniskās bāzes veidošanos;
- pasaulē un arī Latvijā ir vērojama sabiedrības iekļaujošā attieksme pret citādo;
- grafiskā dizaina iespējas paver plašu darba lauku izglītojošu produktu radīšanā cilvēkiem ar redzes traucējumiem;
- praktiskās nodarbības, kurās tiktu izmantoti mākslas darbu reprodukciju taktīlie attēli, ir iespējams vadīt gan bērnu, gan pieaugušo auditorijā;
- mākslas darba pārnese jeb tulkošana taktīlajā grafikā ir efektīgs veids, kā iepazīstināt neredzīgu cilvēku ar muzeju vērtībām;
- sarunas par mākslas darbiem paplašina neredzīgu cilvēku redzesloku un sniedz zināšanas par vizuālo pasauli;

- vājredzīgu un neredzīgu cilvēku kopienas piesaiste muzejam prasa intelektuālu un materiālu ieguldījumu no iestādes speciālistu puses, prasmes un iemaņas taktilās grafikas uztverē no mērķauditorijas puses.

Autores uzskata, ka pētnieciskā tēma nav izsmelta, vēl ir daudz neatbildētu jautājumu, lai izzinātu vienas sabiedrības grupas vajadzības. Tikai iedziļinoties problēmā, ir saskatāms risinājums, lai saprastu nevizuālas pasaules uztveres īpatnības un bagātinātu to ar pieejamiem un vēl atklājamiem līdzekļiem.

Summary

The general global tendency to inclusive society and respecting its diversity also encourages persons with vision impairment to be social, not to hide in a confined environment, acquire new experience and skills. To understand the needs of different social groups in the area of museum services, it is necessary to conduct research, consult, maintain contacts with representatives of the communities, perform testing, and finally introduce new services oriented at the planned target audience in particular. The research requires an interdisciplinary approach to the issue, which involves the fields of education, psychology, social sciences, museum studies and art history. To get fully acquainted with the environment of the visually impaired and their perception of the world, specialised scientific subfields are reviewed in the research such as typhlopsychology and typhlopedagogy. However we must remember that a universal approach to all persons with vision impairment would be incorrect, which is why an individual approach to each person is very important here because every case of vision impairment is different. Closer cooperation between the community and the museum could achieve better inclusion of persons with vision impairment into the circle of museum visitors.

During the research, empirical methods were used – interview and practical activity. Interview and practical activity were judged to be the best methods and applied because Braille reading and writing skills in the communities of the visually impaired are very different. Ensuring accessibility of artistic property stored in museums to persons with vision impairment is a new and complex area of activity in the field of communication with social communities, which requires of the museum staff an innovative approach and persistent work to change their own and societal attitude to that which is different. Positive attitude and appropriate services decrease the isolation of this or another social community and promote its inclusion into cultural and artistic life processes. The authors believe that the research topic has not been exhausted; many unanswered questions remain in study of the needs of one social group. Only going deeper into the problem reveals the solution that allows to understand the particular features of non-visual perception of the world and to enrich it using available means and those yet to be discovered.

Literatūra References

- Alvarez, A. (2005). *Please Touch: The Use of Tactile Learning in Art Exhibits, presented at the J.Paul Getty Museum Symposium, "From Content to Play: Family-Oriented Interactive Spaces in Art and History Museums"*. June, 4-5.
- Bite, G. (2012). *Brīvprātīgie un dieguburti*. Skatīts 08.09.2015. Pieejams: www.neredzigobiblioteka.lv.

- Dundure, I., & Apele, D. (2016). Mākslas vērtības muzejos un to pieejamība cilvēkiem ar redzes traucējumiem. *Māksla un mūzika kultūras diskursā. V starptautiskās zinātniski praktiskās konferences materiāli*, 33.-43.
- Fleming, D. (2013). The Social Role of Museums. In I. Zelča-Sīmansone (Eds.), *Museums and Intercultural Dialogue. The Learning Museum Network Projekt Report Nr.4* (pp. 57-69). Rīga: Mantoprint.
- Hmeļevska, V. (2013). *Taktilā grāmata: kam un kādēļ tāda vajadzīga?* Pieejams: <http://www.ubisunt.lu.lv/zinas/t/21983/>
- Landra, T. (2015). *Kā saprast citādo*. Npublicēts apmācības kursu materiāls.
- Landra, T., & Tūbele, S. (2011). Taktilās grafikas tehnoloģijas un to lietojums Eiropā, ASV un Latvijā. *Latvijas Universitātes raksti 759. sējums. Pedagoģija un skolotāju izglītība*, 88.-100.
- Slimību profilakses un kontroles centrs: Latvijas veselības aprūpes statistikas gadagrāmata.* (2016). Pieejams: <http://www.spkc.gov.lv/lv/statistika-un-petijumi/statistika/latvijas-veselibas-aprupes-sta1/get/nid/9>

DEJU PEDAGOGA PROFESIONĀLĀS IDENTITĀTES KOMPONENTI

Professional Identity Components of a Dance Teacher

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Abstract. *The concept of professional identity is considered and topical from the perspective of different occupations. The professional identity of the dance teacher has so far not been researched scientifically and there are no studies about this concept. The article focuses on the term “teachers professional identity” and the formation process of the dance teacher’s professional identity model, as well as the explanation of components of this model from a dance teachers point of view. The aim of this article is to create a professional identity model of the dance teacher by analyzing scientific literature and using professional experience. The professional activity of the dance teacher directly affects the students both physically and psychologically, therefore it is especially important to pay attention to the issues of dance teacher’s professional identity, even more if these questions are not discussed in the study process and there are no related instructions or materials that reveal the essence of the professional identity concept in the world of dance. In a relatively short period of time that students spend in dance classes, teachers must maximize the positive impact on their students. Considering many factors of influence - family, school, friends, social networks, hobbies, dance educator should strive to create an understanding of behavior, aesthetics, tastes, positive relationships in the group, discipline and many more. Explaining professional identity from a creative point of view leads to greater insight into one’s profession, as well as to assess the quality of one’s professional work and achievements.*

Keywords: *dance pedagogy, professional identity, professional identity model.*

Ievads

Introduction

Deja ietver divas galvenās funkcijas – audzinošo un psiholoģisko (Petere, 1994). Deju nodarbībās bērns iemācās saprast, ka nekas nerodas bez darba, gūstot kustību prieku, apgūstot kolektīvo darbošanos un atbildību par kolektīva dalībniekiem, attīsta radošo domāšanu, neverbālo komunikāciju caur kustībām, žestiem un skatieniem (Omārova, 1994)

Mūsdienu darba vides straujajā ritmā un plašajās iespējās arvien biežāk nākas darbā ieguldīt vairāk personīgā laika. Ir svarīgi apzināties savu identitāti, lai droši sekotu saviem izvirzītajiem mērķiem, bet tikpat svarīgi ir arī apzināties savu profesionālo identitāti. Kā mēs uztveram savu izvēlēto profesiju un cik ļoti

mēs esam iesaistījušies savā profesionālajā darbībā? Radošajās nozarēs robeža starp noteiktajām darba stundām un personīgo brīvo laiku ir praktiski izzudusi, jo šāda veida profesionālā darbība ir dzīves veids. Deju pedagogs pirms darba gatavojas nodarbībām, izvēlas muzikālo noformējumu, gatavo jaunus vingrinājumus, atnākot no darba mājās tiek darināti kostīmi, reklāmas bukleti, tiek veikta sazināšanās ar citu nozaru speciālistiem, lai noorganizētu koncertdarbību, utt.

Profesijai “deju pedagogs” ir jābūt gatavoties jau kopš bērnības, jo pretējā gadījumā netiks apgūtas pietiekami plašas kustību un dejas prasmes. Ja arī jauniešiem vēl nav pārliecināti par topošo profesiju, vai arī sākumā veiksmīgi darbojas tikai kā dejojotājs, laika gaitā nonākot pie profesijas “deju pedagogs” viņam ir jābūt pilnībā gatavam apgūt attiecīgās zināšanas un prasmes augstākajā izglītībā, kuras tikai papildinās jau esošo pieredzi dejas mākslā, nevis būsēs to no jauna. Līdzīgi, kā mūzikā, audzēkņi sāk apgūt instrumentu spēli jau pirms skolas, lai būtu gatavi pilnveidot savas prasmes turpmākajos mācību gados, un arī pēc tam.

“Identitātes” pētniecības tradīcijas *Traditions of Identity research*

Vārds “identitāte” cēlies no latīņu vārda “idem”, kas nozīmē „tas pats”. Identificēt nozīmē atzīt kādu klātesošu objektu par identisku reprezentatīvajam jēdzienam (Svešvārdu vārdnīca, 1999). Jēdzienam “Identitāte” ir daudz plašākas pētniecības tradīcijas Rietumu filozofijā nekā psiholoģijā. Tomēr filozofija apskata ļoti dažādas šī jēdziena nozīmes, ne tikai lai izvairītos no pārpratumiem, bet arī, lai paspilgtinātu galvenās šī jēdziena nozīmes psiholoģijas kontekstā. Šīs nozīmes vai pieturpunkti identitātes filozofiskajā saturā ir identificēšanās ar sevi, individualitāte, līdzība ar sevi (Sollberger, 2013).

Kopš E. Eriksons veica savu izšķirošo ieguldījumu psiholoģijas teorijā un raksturu patoloģijā, nonākot līdz identitātes jēdziena teorētiskajam pamatojumam, šim jēdzienam ir bijušas vairākas interpretācijas.

Filozofijā identitāte tiek pasniegta kā izteicējs, kā zīme, kura atšķir vienu objektu no otra. Jēdziens identitāte koncentrējas uz katra dotā objekta unikalitāti. Platons pirmo reizi nošķīra “ir” kā saiti frāzē no identificējošā “ir”. Aristotelis atšķīra identitātes skaitlisko nozīmi, kā ekvivalentu identificētājam, kurš nosaka objektu kā indivīdu. Identitātes problēma kļuva par substances problēmu cauri filozofijas vēsturei, kā mēģinājums definēt individualizācijas procesu. Tādēļ filozofijas skatījumā tiek atklāta iespēja noteikt dažādu identitātes perspektīvu sarežģītību to konverģencē, respektīvi, šo perspektīvu atšķirības un neatbilstības. Tiek izvirzīts jautājums – kā konstruēt “sevis” modeli tā identitātē

(Kircher & David, 2003), kura integrē sevī tādas perspektīvas kā:

- fenomenoloģija, kura apskata būtību, saturu un garīgā stāvokļa sajūtu, un, kas attiecas uz identitāti – sevi kā netiešu un tūlītēji piedzīvotu apziņā;
- prāta filozofija, kura koncentrējas uz loģiskiem savienojumiem un zināšanu sistematizēšanu par prāta darbību;
- kognitīvā zinātne, kura veido prāta darbības modeļus, kā pamatu turpmākiem empīriskiem pētījumiem, kas attiecas uz identitāti tieši aplūkojot tādas jēdzienus kā pašprietiekamība un saistība ar “sevi”;
- sociālā zinātne, kā arī personības psiholoģija, kura apskata cilvēku attieksmi pret sevi un dažādām sabiedriskām lomām, kā arī abu šo parādību mijiedarbību.

Pēdējo trīsdesmit gadu laikā ir veikti neskaitāmi pētījumi, kuri parāda saistību esamību starp identitātes dimensijām un dažādiem personības un sabiedrības mainīgajiem, ieskaitot labklājību (Marcia, 1993; Luyckx et al., 2005; Crocetti et al., 2008; Karaš et al., 2013).

Pēc E. Eriksona (1998) domām indivīda identitāte var tikt aplūkota nogrieznī, kura diapazons sākas ar “apjukumu lomās” (t.i., stabilas identitātes neesamība), līdz “identitātes sintēzei” (t.i., veiksmīga identitātes sasniegšana). E. Eriksons raksta par identitāti klīniskā un figurālā ziņā, tomēr šai teorijā trūka precizitātes un detalizējuma (Co[^]te' & Levine, 1987). Dž. Marsija bija viens no pirmajiem, kurš izstrādāja tālāk Eriksona teoriju, iepazīstinot ar paradigmu, kura palīdzētu empīriskiem pētījumiem vadīties identitātes veidošanās procesā: identitātes paradigma (*ego identity status paradigm*). Šī paradigma koncentrējas uz diviem pamatprocesiem vai identitātes veidošanās pamatblokiem: izpēte un apņemšanās/nodošanās.

Iespaidojoties no Dž. Marsija identitātes paradigmas un nesenākiem identitātes procesa modeļiem (Bosma & Kunnen, 2001; Grotevant, 1987), K. Luiks (Luyckx) S. J. Švarts (Schwartz) et al. (2008) attīstīja identitātes veidošanās modeli, kas sastāv no piecām atšķirīgām, bet savstarpēji saistītām identitātes dimensijām, lai atklātu identitātes veidošanos mūsdienās.

Profesionālā identitāte pedagogijā *Professional identity in pedagogy*

2000. gadā tika veikts pētījums par pedagogu profesionālās identitātes uztveri (Beijaard et al., 2000), tā autori apgalvo, ka identitātes jēdziens vispārīgā literatūrā ir definēts dažādos veidos. Līdzīgi ar profesionālo identitāti, šis jēdziens tiek lietots dažādos veidos, kas attiecas uz pedagogiju un skolotāju izglītību. Dažos pētījumos profesionālās identitātes jēdziens tika saistīts ar pedagoga tēlu

(Knowles, 1992; Nias, 1989). Tika pamatots, ka šie paštēli spēcīgi ietekmē to kā pedagogi māca, kā tie attīstās savā profesijā un to attieksmi pret izmaiņām izglītībā. Citos profesionālās identitātes pētījumos uzsvars tika likts uz pedagoga lomām (Goodson & Cole, 1994; Volkmann & Anderson, 1998), gan apskatot to saistību ar citiem jēdzieniem, gan neskarot tos, kā arī uz pašvērtējumu, kas ir svarīgs jēdziens profesionālās identitātes attīstībā (Cooper & Olson, 1996; Kerby, 1991). Turklāt profesionālā identitāte attiecas ne tikai uz koncepcijām un cerībām, ko izvirza citi cilvēki, ieskaitot plaši izplatītos priekšstatus par to, ko pedagogam ir jāzina un jā dara, bet arī uz to, ko paši pedagogi izvirza par svarīgu savā profesionālajā darbībā un dzīvē, balstoties gan uz savu pieredzi, gan praksi, kā arī profesionālo sagatavotību (Tickle, 1999). Abas profesionālās identitātes šķautnes šķiet cieši saistītas, tomēr dažādi izceltas no zinātnieku viedokļa. Pētījuma autori (Beijaard, Meijer, Verloop, 2000) Analizējot attiecīgo literatūru laika posmā no 1988 – 2000. gadam, kad visaktīvāk norisinājās diskusijas par skolotāju profesionālo identitāti, identificēja sekojošās iezīmes, kas ir būtiskas pedagoga profesionālajai identitātei:

- Profesionālā identitāte ir nepārtraukts process, kurā notiek pieredzes interpretācija un atkārtota tās interpretācija (Kerby, 1991), apskatot to kā procesu, kurā pedagoga attīstība nekad neapstājas un tiek skatīta kā mūžizglītības process (Day, 1999). No profesionālās attīstības perspektīvas profesionālās identitātes veidošanās ir ne tikai atbilde uz jautājumu: “Kas es esmu šajā mirklī?”, bet arī atbilde uz jautājumu: “Kāds es vēlos kļūt?” (Beijaard et al., 2000). Profesionālā identitāte ir dinamiska, nevis stabila un fiksēta parādība.
- Profesionālā identitāte ietver sevī gan personu, gan kontekstu. Pedagoga profesionālā identitāte nav pilnībā unikāla. No pedagoga tiek sagaidīta attiecīga domāšana un profesionāla rīcība, tomēr pedagogs nepārņem profesionālās iezīmes (zināšanas, attieksmes, u.c.) mehāniski, bez ierunām. Pedagogi atšķiras ar veidu kā viņi rīkojas ar šīm profesionālajām iezīmēm, atkarībā no vērtības ko viņi tām personīgi piešķir.
- Pedagoga profesionālā identitāte sastāv no apakšidentitātēm (*subidentities*), kuras vairāk vai mazāk harmonizē viena ar otru. Apakšidentitātes attiecas uz dažādām pedagoga attiecībām un profesionālās darbības vidi. Dažas no šīm apakšidentitātēm var būt cieši saistītas un veidot pedagoga profesionālās identitātes kodolu, kamēr citas var būt mazāk nozīmīgas. Ir diezgan būtiski, lai šīs apakšidentitātes nebūtu konfliktā viena ar otru, t.i., tās būtu balansā. Pedagogu apmācības sākuma posmā, studenti bieži izjūt šādus konfliktus (Volkmann & Anderson, 1998). Pieredzējuši pedagogi šādus

konfliktus var izjust saskaroties ar izmaiņām izglītībā vai izmaiņām savā darba vidē (Connelly & Clandinin, 1999). Jo centrālāka ir šī apakšidentitāte jo smagāk ir piedzīvot tās pārmaiņas vai zaudēt šo identitāti.

- Aktivitāte ir svarīgs profesionālās identitātes elements, jo pedagogiem ir jābūt nepārtrauktā darbībā nodrošinot savu profesionālo attīstību (Coldron & Smith, 1999). Ir vairāki veidi kā pedagogs var vingrināties aktivitātē, pamatojoties uz mērķi, kuru viņi izvirza un līdzekļiem, kuri ir pieejami, lai sasniegtu šo mērķi. Var apgalvot, ka profesionālā identitāte kā parādība, nepieder pedagogiem, tā ir parādība, ko pedagogi lieto, lai piešķirtu jēgu sev, kā profesionāļiem. Profesionālā identitāte palīdz pedagogiem izskaidrot un pamatot lietas, kuras saistītas ar citiem cilvēkiem un kontekstu (Coldron & Smith, 1999).

A. Špona, M. Vidnere un J. Jermolajeva, kolektīvajā monogrāfijā par pedagogu profesionālo identitāti Rīgas Pedagoģijas un vadības akadēmijā sadarbībā ar Smoļenskas Universitāti, izvirza sekojošus pedagoga profesionālās identitātes modeļa komponentus: profesijas filozofija; profesionālās zināšanas un prasmes; profesionālo lomu izpildīšana; mijiedarbība ar kolēģiem; profesionālā pārstāvniecība (*Профессиональная идентичность педагога*, 2016).

Deju pedagoga profesionālās identitātes modeļa komponenti *Professional identity model components of a dance teacher*

Ņemot par pamatu augstāk minēto pedagoga profesionālās identitātes modeli, turpmāk tiks integrēti konkrētie komponenti deju pedagoga profesionālās darbības specifikā, kā arī izskaidrots šī modeļa komponentu saturs no deju pedagoga perspektīvas.

Profesijas filozofija. Par profesionālās identitātes kodolu var dēvēt profesijas filozofiju: vērtības un pārliecību, profesionālās darbības mērķi, profesionālo ētiku, pašus nozīmīgākos priekšstatus saistītus ar profesiju (*Профессиональная идентичность педагога*, 2016).

Audzināšanas mērķi var aprakstīt kā noteicošo personības attīstības virzībā, kam atbilstoši izvēlas saturu, metodes un formas (Špona, 2006) un jebkuras darbības pamatnosacījums ir apzināts, apzinīgi izvirzīts mērķis (Anspaks, 2006). Turklāt, jāpatur prātā, ka mērķa pamatojumi meklējami ārpus darbības – cilvēka ideālajā sfērā – motīvos, ideālos un vērtību pasaulē.

Ja cilvēks ir jāaudzina, tad ir jāzina, uz ko audzināt. Ja nav skaidrība par audzināšanas uzdevumu tad var pamosties šaubas vai viss audzināšanas darbs nav veltīgs (Students, 1998). J. A. Students (1998) cieši saista dzīves mērķi ar audzināšanas uzdevumu un apgalvo, ka audzināšanas uzdevums ir sagatavot cilvēku tā, lai viņš labāk un sekmīgāk varētu tiekties pēc sava dzīves mērķa.

Katra deju pedagoga mērķī ietilpst vēlme sagatavot dejojāju, kas mācību laikā un savā profesionālajā dzīvē nepārstātu attīstīties, un, kas savā profesijā atrastu labsajūtu un gūtu panākumus. Izvirzot profesionālās darbības mērķi ir jāatbild uz jautājumu: “Kā es vēlos palīdzēt saviem audzēkņiem?” Šis jautājums palīdz atrisināt daudzas neskaidrības profesionālajā darbībā.

Neaplūkojot tādas mērķi ietekmējošus faktoros, kā: audzēkņu vecums, motivācija, kur notiek dejas mākslas nodarbības, u.c. var izveidoties nesakritība starp izvirzīto mērķi un darbības rezultātu. Mēģinot izaudzināt, ļoti labus dejojājus var paaugstināt vai pazemināt prasības. Šī problēma ir saistīta ar iespēju un mērķu attiecību. Ir bīstamība zaudēt pedagoģisko autoritāti, ja pārāk bieži tiek uzstādītas paaugstinātas vai pazeminātas prasības. Ir jāsaprot izvirzītais mērķis ar esošajām iespējām.

Vērtības ir kompleksa parādība; tās pēta filozofija, socioloģija, psiholoģija un pedagoģija, turklāt katra zinātne analizē citu vērtību aspektu. Filozofijas nozare aksioloģija izzina vērtību būtību un izcelsmi, savukārt socioloģijā vērtības tiek aplūkotas pētot noteiktas sabiedrības morālo, estētisko, reliģisko un citu priekšstatu sistēmu. Psiholoģijā vērtības tiek pētītas kā personības struktūrkomponents, kas regulē un organizē cilvēka darbību. Pedagoģijā vērtības tiek pieskaitītas audzināšanas saturam (Briška, 2011).

Pedagoga vērtības ir parādības, idejas un objekti, kas ir personiski nozīmīgi viņa profesionālajā darbībā. Pārlicība veidojas nepārtrauktā pašpiederzes pilnveidošanas procesā. Deju pedagoga vērtības un pārlicība ietekmē visu mācību procesu, gan stundas uzbūvi, vingrinājumu izvēli, attieksmi pret audzēkņiem, runas veidu, vizuālo izskatu, izvēlētas mācību metodes, gan arī kādu profesionāla tēlu pedagogs veido audzēkņu uztverē.

Cilvēks, kas orientējas uz daudzveidību, spēj orientēties nenoteiktībā, viņš uztver jauno, neparasto un problemātisko kā iespēju brīnīties vai uzzināt ko jaunu, nevis kā problēmu, ar ko jātiek galā (Gudjons, 1998).

Ētika ir zinātne par tikumību un, lai ētika varētu vērtēt cilvēka tikumisko domāšanu, darbību un dzīvi kopumā, ir nepieciešama negrozāmu vērtību atziņa (Students, 1998).

Deju pedagoga darbs tieši ietekmē audzēkņus psiholoģiski un fiziski. Tieši šī iemesla dēļ, pedagoga ētikai ir jābalstās uz visaugstākajiem standartiem. Relatīvi īsā laika posmā, kuru audzēkņi pavada deju nodarbībā, ir jāpanāk maksimāls efekts, un jāietekmē audzēkņi pozitīvi. Ņemot vērā daudzus ietekmes faktoros – ģimene, skola, draugi, sociālie tīkli, hobiji, deju pedagogam ir jācenšas radīt izpratne par uzvedību, estētiku, gaumi, pozitīvām attiecībām kolektīvā, disciplīnu, un daudz ko citu.

Izglītības un zinātnes ministrijas ētikas kodekss norāda profesionālās ētikas pamatprincipus: godprātība; taisnīgums; cieņa un koleģialitāte; atbildība; drosme.

Ar savu piemēru deju pedagogs katru nodarbību demonstrē audzēkņiem godīgumu, taisnīgumu, spēju risināt konfliktus, u.c. Deju pedagogam nevajadzētu šķirot bērnus pēc patikas, vai arī balstīties uz aizspriedumiem, katram lēmumam, kurš skar audzēkņus ir jābūt pamatotam, un to ir attiecīgi jāpaskaidro. Daudzkārt audzēkņiem ir jānorāda arī vispārīgās uzvedības normas un pašsaprotamu pieklājību, ko jāievēro arī pašam pedagogam.

Priekšstati ir atmiņā iekļauti konkrēti uztveres tēli. Tie veidojas kā dažādu sajūtu kompleksi, kas rodas apkārtnes objektiem iedarbojoties uz mūsu sajūtu orgāniem (Zelmenis, 2000). Priekšstati var būt reālas atziņas par profesiju, bet tikpat labi tie var būt arī aizspriedumi vai sabiedrībā izveidojušies nepamatoti viedokļi. Priekšstatiem ir tieša saistība ar profesijas prestižu, un kā to uztver sabiedrība.

Šī sadaļa sasaucas ar zemāk minētām attieksmēm pret savu profesiju un darbu, jo priekšstati veidojas pirms profesijas apgūšanas, tātad pusaudžu gados vai pat bērnībā no sava deju pedagoga. Pieredzes pārmantojamības ceļā deju pedagogs nodod savas zināšanas un prasmes saviem audzēkņiem, kā arī veido viņu acīs deju pedagoga tēlu, un ar savu rīcību veido priekšstatus, par savu profesiju. Līdz ar to veidojas sava veida nepārtraukts process. Audzēknis mācās no sava pedagoga un gūst priekšstatus par profesiju, izvēloties šo profesiju papildina savas zināšanas un prasmes augstākās izglītības iestādē, kļūst par deju pedagogu un savā profesionālajā darbībā rada jaunus priekšstatus saviem audzēkņiem.

Ja deju pedagogs nevēlas attīstīties un izvērtēt savas profesionālās darbības vājos punktus, seko negatīviem pedagoģiskā darba piemēriem, tikai efektivitātes palielināšanai, šī priekšstatu spirāle kļūst par noslēgtu apli, kurā neatrodas vieta progresam, vispārējai profesijas attīstībai un pedagoģiskā darba uzlabošanai, kā arī negatīvu priekšstatu mainīšanai sabiedrības kontekstā.

Profesionālās zināšanas un prasmes. Neatņemama profesionālās identitātes daļa ir profesionālās zināšanas (pedagoģijā, psiholoģijā, fizioloģijā, zinātniskajā darbībā) un prasmes (kā šīs zināšanas pielietot). Prasmes, kuras ir saistītas ar deju pedagogu profesionālo darbību ir daudz plašāk izprotamas un ietver sevī ne tikai spēju pielietot iegūtās teorētiskās zināšanas praktiskajā darbībā, bet arī spēju precīzi fiziski izpildīt iegūtās prasmes dejas mākslā. Profesionālajā darbībā nepieciešamās prasmes un zināšanas nosaka Izglītības un zinātnes ministrijas apstiprinātais profesijas standarts skolotājiem, kā arī augstskolu programmas, kuras arī atbilstoši novērtē topošo deju pedagogu gatavību profesionālajai darbībai.

Profesionālo lomu izpildīšana. Profesionālā identitāte paredz arī profesionālo lomu izpildīšanu (skolotājs, audzinātājs, docētājs augstskolā, zinātnieks, u.c.) Dejas mākslas profesijas pārstāvjiem ir nepieciešamība izprast un paplašināt savas zināšanas nozarēs, kuras ir cieši saistītas ar savu profesiju, bet

neietilpst tiešajos profesijas darba pienākumos. Primārās lomas ir saistītas ar ikdienas profesionālo darbību un iekļauj sevī studiju procesā iegūtās zināšanas un prasmes, kuras papildinās pieredzes un profesionālās darbības procesā. Savukārt sekundārās lomas ikdienas profesionālajā darbībā izmanto retāk, tomēr tās atspoguļo dejas mākslas plašo mijiedarbību ar citām mākslas, medicīnas un zinātnes nozarēm.

Personības attīstības procesā jāievēro, ka katra darbības joma – izziņas darbība vai radošs darbs, mākslas darbu uztvere, sportista darbība utt. – allaž saņem atbalstu no citām jomām (Anspaks, 2006).

1. tab. Deju pedagoga profesionālās lomas (avots: autorei veidots)
 Table 1 Professional roles of a dance teacher (source: by author)

Primārās lomas <i>Primary roles</i>	Sekundārās lomas <i>Secondary roles</i>
Skolotājs / Pedagogs <i>Teacher</i>	Fizioterapeits / traumu diagnostika un primārā aprūpe <i>Physiotherapist / Injury Diagnostics and Primary Care</i>
Audzinātājs <i>Educator</i>	Šuvējs / kostīmu, rekvizītu, dizaineris <i>Seamstress / costume, requisite designer</i>
Horeogrāfs <i>Choreographer</i>	Uztura speciālists <i>Nutrition specialist</i>
Kolektīva vadītājs / Pasākumu organizētājs <i>Manager / Event organizer</i>	Zinātnieks <i>Scientist</i>
Padomdevējs <i>Consultant</i>	Fotogrāfs, video speciālists <i>Photographer, video assembler</i>
Mūzikas mākslas pazinējs <i>Knowledgeable person in Music</i>	Režisors, scenogrāfs <i>Director/stage designer</i>
Psihologs <i>Psychologist</i>	

Profesionālā attieksme pret darbu. Profesionālā attieksme pret darbu paredz iesaistīšanos savā profesijā un motivāciju, profesionālo godīgumu, pacietību, cieņu pret sevi, audzēkņiem, studentiem, vecākiem u.c. Profesionālā attieksme pret darbu sasauca arī ar iepriekš aprakstītajām deju pedagoga vērtībām un ētikas normām. Tomēr deju pedagoga profesionālajā darbībā ir daudz nianšu, kuras norāda tieši uz to, vai pedagogs uztver savu darbu nopietni, piemēram, deju pedagogs: veic mērķtiecīgus mutiskos norādījumus; runā skaidri, literāri pareizi

un brīvi; ar savu rīcību vienmēr demonstrē cieņu un pieklājību; veido deju zāles vidi tā, lai tajā būtu kārtība, prasa kārtīgu attieksmi arī no audzēkņiem u.c.

A. Špona (2006) norāda, ka noturīgu attieksmju veidošanās pamats ir paradumi, un tie nostiprinās sistemātiskos vingrinājumos, līdz ar to varam secināt, ka, ja pedagogs pats sev izveidos noturīgus paradumus un nepakļausies ikdienas rutīnai, vai nogurumam, tad noturīgi paradumi un līdz ar to arī konkrētas attieksmes veidosies arī audzēkņiem. Pastāv iespēja, ka deju pedagogam pašam pusaudžu gados vai bērnībā ir izveidojušās negatīvas attieksmes vai arī nav izveidojušās attieksmes pret kādu no profesionālajā darbībā nepieciešamiem komponentiem, tādā gadījumā it īpaši būtu jāatpazīst “profesionālie trūkumi” un jācenšas pilnveidot savu attieksmi pret darbu.

Mijiedarbība ar kolēģiem. Mijiedarbība ar kolēģiem notiek ikdienas darbā, profesionālās organizācijās, projektos, publikācijās utt. Ikdienas profesionālajā darbībā deju pedagogs daudzkārt var nesaskarties ne ar vienu citu šīs profesijas pārstāvi, kas attiecas uz pedagogiem, kuri strādā interešu izglītībā bērnu un jauniešu centros un skolās. Pārsvārā mijiedarbība notiek starp kolēģiem no dažādām pedagoģijas apakšnozarēm, lietvedību, direktoru un direktora vietniekiem. Diemžēl daudzkārt dejas mākslas profesiju pārstāvjiem nākas saskarties ar saspringtu atmosfēru kolēģu starpā, kur konkurenci izjūt gan deju pedagogi, gan viņu audzēkņi. Konkurētspēja deju pedagogu starpā veidojas ne tikai caur māksliniecisko darbību, bet arī meklējot papildus finansējumu, piedaloties telpu, nodarbību laika un līdzekļu sadalījuma apspriešanā.

Profesionālā pārstāvniecība. Profesionālā pārstāvniecība paredz aktīvu pedagoga iesaistīšanos sabiedriskajā dzīvē, netiešu profesionālo pienākumu realizēšanu, nezaudējot saistību ar savu profesionālo filozofiju t.i. uzņemt savā atbildībā pedagoģiskās apgaismības misiju, aktīva dalība pedagoģisko aspektu satura risināšanā un formulēšanā, kuri saistīti ar dažādām sociālajām problēmām, pašizliedzīga pedagoģiska rakstura palīdzības sniegšana, tiem, kuriem tā nepieciešama (*Профессиональная идентичность педагога*, 2016). Profesionālā pārstāvniecība paredz dalību dažāda veida sabiedriskās organizācijās, un savas profesijas pārstāvniecība ārpus darba vietas. Deju pedagogam tā ir dalība asociācijās, biedrībās, dalība žūrijas komisijās, zinātniskā darbība, iesaistīšanās dažādos projektos, pasākumu organizēšana (meistarklases, koncerti, kursi, utt).

Deju pedagoga profesionālās identitātes modelis *Professional identity model of a dance teacher*

Apskatot augstāk minētos pedagoga profesionālās identitātes komponentus var secināt, ka tos nepieciešams papildināt ar “mākslinieciski radošo darbību”, jo tā ir neatņemama sastāvdaļa no dejas mākslas pedagoga profesionālās darbības.

Mākslinieciski radošā darbība. Deju pedagoga profesionālajā darbībā mākslinieciskums un radošums lielākoties atspoguļojas horeogrāfiskajā jaunradē, tādēļ šīs tēmas ietvaros deju pedagogs tiks pieminēts arī kā horeogrāfs, un mākslinieciski radošais process aplūkots lielākoties no dejas kompozīcijas izstrādes perspektīvas.

Šobrīd, kad horeogrāfijas mākslas estētika ir izmainījusies un turpina mainīties, ir izveidojusies nepieciešamība attīstīt mūsdienīgu “mākslinieciski-radošo” domāšanas tipu gan deju pedagoga un horeogrāfa profesionālās apmācības procesā, gan tālākizglītībā. Mūsdienu deju teorijas un pasniegšanas metožu pētnieks, pedagogs V. J. Ņikitins (2011) uzskata, ka šo izmaiņu nepieciešamība izriet no pretrunām esošajā horeogrāfiskās apmācības modelī. Šajā modelī profesionālā sagatavošana pamatojas uz dominējošo racionāli-loģisko mākslinieciskās domāšanas tipu (galvenokārt klasiskajā vai tautu dejā).

Pamatojoties uz radošā procesa fāžu un radošuma posmu koncepciju pētījuma Ņikitins izvirza radošā procesa posmu praktisko modeli horeogrāfiem, strādājot ar mākslas darbu. Modelis ļauj noteikt studiju procesa posmus un pēctecību.

Kā modeļa pirmo posmu var izvirzīt problēmu vai grūtību noteikšanu. Problemātiska situācija ir domāšanas procesa sākums. Tas ir noteikts psihisks subjekta stāvoklis, kas veidojas objektīvu apstākļu iedarbībā, kur svarīga ir personības iekšējā aktivitāte- jaunu mērķu izvirzīšana jaunu spēcīgu vēlmju veidošanās un motivācijas dinamika (Никитин, 2011).

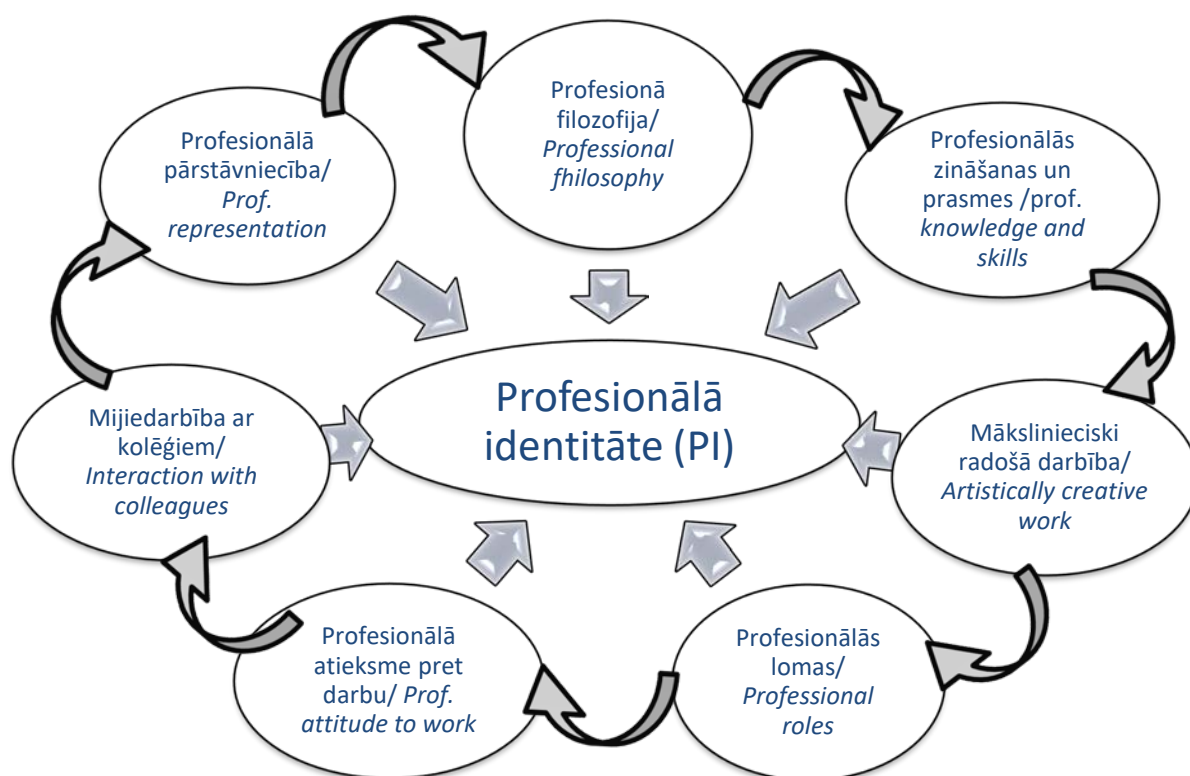
Otram radošā procesa posmam ir neapzināts raksturs; nobriešana, kādas idejas inkubācija, nodoms. Pēc tam, kad problēmsituācijas relizēšanai tiek izvirzīti noteikti uzdevumi un sākota to formulēšana un lēmuma pieņemšana, domāšanas process iegūst apzinātu priekšrocību. Tikko apziņa ir aizņemta ar citu uzdevumu risināšanu, lēmumu pieņemšana par konkrēto uzdevumu turpina norisināties zemapziņā. Mūsdienu dejas horeogrāfa radošajā darbībā mēs nevaram verbalizēt sajūtas, vai jaunu ideju atblāzmas, tāpēc daudz racionālāk ir ieviest jaunu terminu „radošais redzējums” (Никитин, 2011), kas var izpausties kā kādas iekšējās gleznas, attēlu, muzikālās vai kustību intonācijās.

Trešais posms – pāreja no neapzinātas uz apzinātu darbību, meklējumu fāze, vēlme iemiesot nodomu ar noteiktiem mākslinieciskiem līdzekļiem. Pāreja no neapzinātiem rezultātiem uz apzinātiem tiek uztverta kā sava veida apgaismojums, kas vairāk pielietojams kā zinātniskais radošums vai iedvesma mākslā. Šai fāzei horeogrāfijā ir zemapziņas raksturs. Mākslinieciskajā ziņā šis ir pats mokošākais darba process, jo reālās izteiksmes līdzekļi un paņēmieni nesakrīt ar iekšējām izjūtām un tēliem.

Ceturtais posms – eksperiments, konstruēšana, ideāla gala produkta veidošana. Šim procesam ir apzināts raksturs, jo kustību meklēšanas process un elementu savienošana ir beigusies. Sākas strukturālo „rāmju”, formu meklēšana un savienošana ar citiem skatuviskās darbības komponentiem. Daudz kas šajā posmā mainās, ja horeogrāfs sāk strādāt ar izpildītājmāksliniekiem, kuri piedāvā savus risinājumus un transformē horeogrāfa izvēlētos mākslinieciskās izteiksmes līdzekļus reālā dejas skatījumā.

Piektais posms – kritiska visu lēmumu un formu analīze, izveidotā mākslas darba kontrole. Parasti šis posms ir saistīts ar prezentāciju skatītājiem un bieži atkarībā no skatītāju un kritiķu viedokļa izveidotajam mākslas darbam jāveic labojumi.

Kā var novērot pēc izveidotā modeļa, galveno lomu radošās domāšanas izpētes procesos ieņem apzinātās un neapzinātās domāšanas attiecības. „Lai gan radošums ir cilvēcisks un tikai cilvēciska īpašība, kas izrauj cilvēku no organiskās pasaules dziļumiem un paceļ pāri dabai, viņš vēl nav gatavs saprast sevi un izskaidrot. Īpaši tas attiecas uz radošumu un tā rezultātiem. Radīšanas process, pārklāts ar plīvuru, kuru neviens un nekad nav pacēlis un nepacels”. (Никитин, 2011: 247)



1. att. Deju pedagoga profesionālās identitātes modelis (autore pēc Šponas, Vidneres, Jermolajevas, 2016)

Fig. 1. Professional identity model of a dance teacher.

Analizējot literatūru un apkopojot informāciju par pedagoga profesionālās identitātes saturu, var tikt izveidots deju pedagoga profesionālās identitātes modelis.

Analizējot pedagoga profesionālās identitātes modeļa komponentus no dejas mākslas skatu punkta var secināt, ka tādi komponenti, kā: mijiedarbība ar kolēģiem un profesionālā pārstāvēniecība, deju pedagoga ikdienas darbībā ir vismazāk izteikti, tādēļ tos var apvienot, vai arī izveidot ārējo ietekmējošo faktoru loku. Pie ārējiem faktoriem, kuri ietekmē deju pedagoga profesionālo darbību var minēt arī ģimeni, izklaidi (brīvo laiku), profesijas alternatīvas, u.c. Kā piemēru var minēt ģimenes atbalstu, vai tieši otrādi, noraidošu attieksmi. Radošo profesiju pārstāvji bieži veic savu koncertdarbību brīvdienās vai par svētku dienās, kā arī mēģinājumu laiks noslēdzas vēlās vakara stundās, kā rezultātā noraidoša ģimenes attieksme var tieši ietekmēt profesionālo darbību un tās kvalitāti, apstādināt to vai pat likt izvēlēties citu profesiju.

Summary

In the rapid rhythm of today's work environment and wide range of opportunities more often we have to invest more personal time in our work and "bring our work home". It is important to be aware of your identity in order to safely follow your goals, but it is just as important to be aware of your professional identity. How do we perceive our chosen profession and how much we are involved in our professional activities? In the creative industries, the boundary between set working hours and personal free time has practically disappeared, because this type of professional activity is a way of life.

The profession of "dance teacher" has to be taught since childhood, because otherwise there won't be enough dance skills and movement experience. Even if the young person is not yet convinced of the future profession, or at the beginning he works only as a dancer, in the course of time, deciding to obtain a dance teacher profession, he must be fully prepared to acquire the relevant knowledge and skills in higher education, which will only supplement the experience a dancer already have. Similarly to music students, who learn the instrument play before school, so that they can complete their skills in the following years of study, and career.

Identity - is not a fixed attribute of a person, but a relational phenomenon. It is an ongoing process, a process of interpreting oneself as a certain kind of person.

Professional Identity - is not a stable entity; it cannot be interpreted as fixed or unitary (Coldron & Smith, 1999). It is a complex and dynamic equilibrium where professional self-image is balanced with a variety of roles teachers feel that they have to play. (Volkman & Anderson, 1998).

Professional philosophy of a dance teacher includes: values and beliefs that influence the whole teaching process; goals of professional activity/work - it is necessary to harmonize the goal with existing possibilities; professional ethics - create an understanding of behavior, aesthetics, tastes, positive relationships in a group, discipline, and much more; the most important notions related to the profession.

Professional knowledge and skills. Skills related to the professional activities of a dance teachers can be further analyzed, and include not only the ability to apply the acquired theoretical knowledge in practical work, but also the ability to accurately physically fulfill the acquired skills in the art of dance.

Professional roles of a dance teacher can be divided in to primary and secondary roles. See Table 1 Professional roles of a dance teacher

Professional attitude towards work. The basis of sustainable attitude formation are habits and they are strengthened by systematic exercises. So if the teacher creates sustainable habits for himself and doesn't subject to daily routine and exhaustion, then the persistent habits and hence the attitudes will also be formed for the students – regularity, tidiness, discipline, respect for other people property, courtesy, etc.

Interaction with colleagues of other teaching subjects, staff members, headmaster is mostly positive. Interaction with other dance teachers/ choreographers: positive – common projects, camps, concerts; negative – competitions, finding financial support, attracting new dancers, etc.

Professional representation means participation in various types of public organizations and the representation of their profession outside the workplace. For a Dance teacher it can be a membership in associations, participation in jury commissions, scientific work, involvement in various projects, organizations of events (master classes, concerts, courses, etc.).

Artistically creative work forms a large part of the dance teacher's professional identity. It provides for creativity (new ideas, concepts, choreography), creative approach to dance classes, concert activities and preparation for them. In the art of dance, creativity and artistic spirit are closely related. Without creativity a dance teacher fails to create a new dance product (dance composition, innovations in the range of exercises, dance performances, etc.).

Based on the research of A. Spona, M. Vidnere un J. Jermolajeva (2016), and adding the component of “artistically creative work”, there can be developed a model of professional identity of a dance teacher. See Fig. 1 Professional identity model of a dance teacher.

Analysing the content of the teachers professional identity model components from a dance teachers perspective, there can be added an “artistically creative work”. Also the components of “interaction with colleagues” and “professional representation” are not actual in the profession of a dance teacher, so they can be combined or there can be created an external circle of impact factors, such as family, other job options, free time, etc.

Literatūra References

- Anspaks, J. (2006). *Mākslas pedagogija. Metodoloģija, teorija, prakse*. Raka, Rīga.
- Beijaard, D, Meijer, P. C., & Verloop, N. (2000). Teachers' perceptions of professional identity: an exploratory study from a personal knowledge perspective. *Teaching and Teacher Education*, 16, 749-764.
- Bosma, H. A., & Kunnen, S. E. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review*, 21, 39–66.
- Briška, I. (2011). *Topošo skolotāju profesionālo vērtību veidošanās mākslinieciski radošā darbībā*. Iegūts 2017.g 15. maijā no https://dspace.lu.lv/dspace/bitstream/handle/7/4590/16942-Ilze_Briskas_2011.pdf
- Coldron, J., & Smith, R. (1999). Active location in teachers' construction of their professional identities. *Journal of Curriculum Studies*, (31) 6, 711-726.

- Connelly, F. M., & Clandinin, D. J. (1999). *Shaping a professional identity: Stories of educational practice*. New York: Teachers College Press.
- Cooper, K., & Olson, M. R. (1996). The multiple &'s' of teacher identity. In M. Kompf, W. R. Bond, D. Dworet, & R. T. Boak, *Changing research and practice: Teachers+ professionalism, identities and knowledge* (pp. 78-89). London: Falmer Press.
- Co'te', J. E., & Levine, C. (1987). A formulation of Erikson's theory of ego identity formation. *Developmental Review*, 7, 273-325.
- Crocetti, E., Rubini, M., & Meeus, W. H. J. (2008). Capturing the dynamics of identity formation in various ethnic groups: development and validation of three-dimensional model. *J. Adolesc.* 31, 207-222. Retrieved from 10.1016/j.adolescence 2007.09.002
- Day, C. (1999). *Developing Teachers: The Challenges of Lifelong Learning*. London: Falmer Press.
- Eriksons, E. H. (1998). *Identitāte: jaunība un krīze*. Jumava, Rīga.
- Goodson, I. F., & Cole, A. L. (1994). Exploring the teacher's professional knowledge: constructing identity and community. *Teacher Education Quarterly*, 21 (1), 85-105.
- Gudjons, H. (1998). *Pedagoģijas pamatatziņas*. Zvaigzne ABC, Rīga.
- Kerby, A. (1991). *Narrative and the self*. Bloomington: Indiana University Press.
- Kircher, D., & David, A. (2003). *The self in neuroscience and psychiatry*. Cambridge: Dambridge University Press.
- Knowles, J. G. (1992). Models for understanding pre-service and beginning teachers' biographies: Illustrations from case studies. In I. F. Goodson, *Studying teachers+ lives* (pp. 99-152). London: Routledge.
- Luyckx, K., Goossens, L., Soenens, B., Beyers, W., & Vansteenkiste, M. (2005). Identity statuses based upon four rather than two identity dimensions: extending and refining Marcia's paradigm. *J. Youth Adolesc.* 34, 605-618. DOI: 10.1007/s10964-005-8949-x
- Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, 42, 58-82.
- Marcia, J. E. (1993). *The Status of the statuses: Research review, in Ego Identity: A Handbook for Psychosocial Research*, eds Marcia J. E., Waterman A. S., Matteson D. R., Archer S. L., Orlofsky J. L., editors. (New York, NY: Springer-Verlag), 22-41. DOI 10.1007/978-1-4613-8330-7_2
- Nias, J. (1989). Teaching and the self. In M. L. Holly, & C. S. McLoughlin, *Perspectives on teachers+ professional development* (pp. 155-171). London: Falmer Press.
- Omārova, S. (1994). *Cilvēks runā ar cilvēku*. Rīga: Kamene
- Petere, A. (1994). *Disertācija: Māksla kā pirmsskolas vecuma bērnu estētisko attieksmju veidotāja*. Rīga; LU
- Sollberger, D. (2013). On identity: from a philosophical point of view. *Child Adolesc Psychiatry Ment Health*. 2013 Jul 31; 7 (1), 29. Doi: 10.1186/1753-2000-7-29.
- Students, J. A. (1998). *Vispārīgā paidaģģija: zinātne un māksla sevis un citu audzināšanā. II Daļa* Raka, Rīga.
- Svešvārdu vārdnīca* (1999). Rīga: Jumava
- Špona, A. (2006). *Audzināšanas process teorijā un praksē*. Raka, Rīga.
- Tickle, L. (1999). Teacher self-appraisal and appraisal of self. In R. P. Lipka, & T. M. Brinthead, *The role of self in teacher development* (pp. 121-141). New York: State University of New York Press.

- Volkman, M. J., & Anderson, M. A. (1998). Creating professional identity: Dilemmas and metaphors of a first-year chemistry teacher. *Science Education*, 82 (3), 293-310
- Zelmenis, V. (2000). *Pedagoģijas pamati*. Raka. Rīga.
- Никитин, В. Ю. (2011). *Мастерство хореографа в современном танце*. М.: Росийский университет театрального искусства - ГИТИС
- Профессиональная идентичность педагога: сравнительное международное исследование: коллективная монография* \ под ред. Н. П. Сенченкова, А. П. Шпоны, Смоленск: Изд.-во СмолГУ, 2016.

JAUNIEŠU TEĀTRA MĀKSLAS NEFORMĀLĀ IZGLĪTĪBA DRĀMAS PEDAGOĢIJAS VĒSTURISKĀS ATTĪSTĪBAS KONTEKSTĀ

Youth Theatre Art Non-formal Education in the Context of Drama Pedagogy Historical Development

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Abstract. Nowadays not only formal but also non-formal education plays a significant role in the context of lifelong learning. By getting involved in various non-formal education activities, with overall and personality development, children and young people socialise, gain new experiences, and acquire new social roles. The wider the spectrum of non-formal education activities, the more possibilities there are for each child and young person to find the most suitable to get involved in according to their interests, needs, abilities, future intentions and goals. One of the forms of non-formal education for children and youth is theatre art non-formal education, which finds its theoretical methodological base in drama pedagogy. School drama clubs, optional course of public speech, drama studio etc. have a significant role and contribute to the promotion of students' personality development and socialisation. The aim of this article is to give a theoretical justification of the youth theatre art non-formal education in the context of drama pedagogy historical development. The approaches, principles, new methods of drama pedagogy were and are currently used by teachers-practitioners in many countries not only in the drama non-formal education but also throughout formal education – by including drama elements as learning techniques and methods across different subjects, thus making the drama pedagogy universal, constantly present everywhere and at all times.

Keywords: drama pedagogy, promotion of personality development, school educational environment, youth theatre art non-formal education.

Ievads

Introduction

Mūsdienās mūžizglītības kontekstā ir nozīmīga ne tikai formālā, bet arī neformālā izglītība. Bērni un jaunieši, iesaistoties dažādās neformālās izglītības aktivitātēs, socializējas, gūst jaunu pieredzi, apgūst jaunas sociālās lomas, kopumā attīstoties un pilnveidojoties kā personības. Jo plašāks ir neformālās

izglītības piedāvājuma spektrs, jo lielākas iespējas katram bērnam un jauniešiem atrast viņam vispiemērotāko izglītības jomu, kurā iesaistīties atbilstoši savām individuālajām interesēm, spējām, vajadzībām, nākotnes nodomiem un mērķiem.

Viens no bērnu un jauniešu neformālās izglītības veidiem ir **teātra mākslas neformālā izglītība**, kuras filozofiski metodoloģiskā bāze ir **drāmas pedagogija**.

Ļoti liela nozīme ir teātra mākslas neformālās izglītības pedagogu kompetencei drāmas pedagogijas jomā, lai izvēlētos atbilstošu metodiku.

Dotā raksta mērķis ir teorētiski pamatot teātra mākslas neformālo izglītību drāmas pedagogijas vēsturiskās attīstības kontekstā. Pētījuma rezultāti tika iegūti, izmantojot **teorētisko pētījumu metodes**: zinātniskās literatūras studēšana, analīze un izvērtēšana, kā arī personīgās pieredzes refleksija.

Drāmas pedagogijas vēsturiskā attīstība *Historical Development of Drama Pedagogy*

Izprotot teātra jeb drāmas pedagogijas lomu personības garīguma audzināšanā, nedrīkst ignorēt vēsturisko pieredzi, kurā jau ir pierādīti drāmas pedagogijas efektivitāte. Teātra pedagogijā pastāv plaša mākslas virzienu sintēze, kurā ir iespējams atklāt bērna talantus un intereses, tādejādi radot apstākļus veiksmīgākai bērna personības izaugsmei. Teātra jeb drāmas pedagogijas principus izmanto daudzi skolotāji - praktiķi ne tikai neformālajā izglītībā, bet arī formālajā izglītībā - dažādos mācību priekšmetos, mācību procesā iekļaujot teātra mākslas elementus kā mācību paņēmienus un metodes, kas teātra pedagogiju dara universālu un plaši pielietojamu.

Cilvēces vēsturiskajā attīstībā teātra pedagogiju jau 10. gadsimtā izmantoja Romas katoļu baznīca, lai izglītotu sabiedrību tai saprotamā formā. Garīdznieks Sv. Galls, bija viens no pirmajiem, kurš, izmantojot teātra līdzekļus, lika pamatus rietumu drāmas izglītībai. Sv. Galls aicināja zēnu kori improvizēt ar liturģijas dziedājumiem, kas vēlāk papildinājās ar darbību, lai ilustrētu *Queritis Quem* Bībeles sižetus. Romas katoļu baznīcas dramatisētiem Bībeles stāstījumiem attīstoties, izveidojās *mirakla vai mistērijas* teātra žanrs, kas pielāgojās sabiedrībai un pārgāja no latīņu valodas uz tautas valodu. Tautas izglītošana aptvēra visu Eiropu, iekļaujot Poliju un Krieviju, un šādā veida teātra formas pārsvars pastāvēja līdz renesanses laikam un teātris bija tautas izglītības sastāvdaļa (Bolton, 2007; Тинина, 2005).

Savukārt 18. gadsimtā veidojās skolu teātru tradīcijas. Šajā laikā Krievijā aktualizējās doma par teātra lomu, kā sabiedrības morālās un mākslas – estētisko audzināšanas līdzekli. V. M. Solovjovs un N. A. Berdajevs (no Гребенкин, 2017: 2) uzsvēra mākslas radošuma dažādo izpausmju nozīmīgumu izglītībā, cilvēka attīstības veicināšanā, kas pēc savas būtības tika traktēts kā morālais

pienākums pret cilvēku, jo “*tieši radošais akts izrauj cilvēku no piespiedu verga stāvokļa un paceļ to jaunā pasaules skatījumā*”.

Lielu iespaidu uz pedagogu un sabiedrības domu par teātra spēju efektīvi audzināt bērnus bija psihologu pētījums, kurā apgalvots par bērnos esošu *drāmas instinktu*. ASV zinātnieks Stenlijs Holls (no Гребенкин, 2017) aprakstīja *drāmas instinktu*, kuru novēroja, kā bērnu nepārvaramu vēlmi spēlēt teātri, izspēlējot lomu spēles rotaļās. Apdomīgi izmantojot šādu bērnu interesi pedagogiem paveras jaunas iespējas izglītot, kas bija jaunatklājums pedagoģijā cilvēka dabas izpratnei.

Katrs no mums, kurš saskāries ar bērniem, atceroties savu bērnību, zina kā bērni izmanto rotaļas un lomu spēles pasaules izziņā.

Izteikta rietumu drāmas izglītības renesanse uzplauka 19. gs.beigās un 20. gs. sākumā Lielbritānijā, kad E. Fogertija 1906. gadā Londonā nodibināja *Runas un drāmas centrālo skolu*, kurai liela loma ir arī šodien. E. Fogertija izveidotā skola jeb, kā viņa pati to sauca, daiļrunāšanas skola, ātri kļuva populāra ne tikai Lielbritānijā, bet arī tās kolonijās (Dienvidāfrikā, Austrālijā, Jaunzēlandē un Indijā). Savukārt Hendrijs Koldvels Kuks 1911. gadā kļuva par Kembridžas pasniedzēju un, strādājot ar drāmas metodiku, nonāca pie termina *spēles – ceļš*, kuru veiksmīgi izmantoja angļu valodas mācīšanās. Audzēkņi Šekspīra tekstus pārvērtā dramatiskā darbībā. Lai arī Lielbritānijā nebija vēl sagatavoti skolotāji, kuri varētu strādāt drāmas pedagoģijas jomā, tomēr 1924. gadā *Drāmu* iekļāva vietējo skolu programmās. ASV drāmas izglītības pioniere Izabella Burgere un viņas sekotājas Džeraldīne Siksa un Nellija Makkaslina. Ņujorkā N. Makkaslina kļuva par *drāmas izglītības* pedagogu, balstoties uz stāstu izmantošanu, balstoties uz skolēnu vai studentu personīgo pieredzi, kur tiem patstāvīgi bija jārada dramatiskais noformējums, šāda veida žanrs turpina izplatīties pasaulē vēl šodien. (Bolton, 2007).

Arī citur Eiropā eksperimentēja ar drāmas metodiku izglītībā, tā Zviedrijā jau 20. gs. sākumā Estere Bomane *Progresīvās izglītības meiteņu skolā* drāmas metodiku izmantoja, lai audzēknes izprastu savas problēmas meiteņu dzīvē. Elsa Olenius 1942. gadā mācījās no N. Makkaslina, Stokholmā izveidojot pirmo Eiropā pašvaldības atbalstīto bērnu teātri “*Var*”. Vēlāk Skandināvija kļuva par drāmas mācīšanas un mācīšanās laboratoriju, pētot un izmantojot visas pasaules drāmas pedagoģijas līderu pieredzi (Bolton, 2007).

Drāmas pedagoģijas un neformālās teātra mākslas izglītības attīstības izpausmes rietumu skolu sistēmā bija dažādas, jo daudzi drāmas pedagogi kļuva par savas metodikas vai atsevišķas metodes jaunradītājiem: piemēram, H. K. Kuks izstrādāja un aprobēja “*Spēles – ceļu*”, 20.gs. četrdesmitajos gados Pīters Sleids - “*Bērna drāmas*” autors radīja lugu uzvedumus konkrētām bērnu vecuma grupām un veidoja atmosfēras teātri, papildinot uzvedumus ar īpašu mūziku un noskaņu. Tādejādi P. Sleida *Bērna drāmas* teātrim bija nepieciešam

brīva, plaša telpa darbībai. P. Sleids ar teātra paņēmieniem aizskāra drāmas terapijas jautājumus. Savukārt B. Veijs, balstoties uz P. Sleida atziņām, izveidoja jaunu formu drāmas izglītībā “*Radošā drāma*”, kur noteicošā loma ir attīstīt katra bērna koncentrēšanās, intuīcijas un spontanitātes spēju, izmantojot konkrētus spēles vingrinājumus. Balstoties uz P. Sleida un B. Veija teorijām un praksi, eksperimentālā drāmas izglītība izplatījās pasaules teātru skolās Ņujorkā, Čikāgā, Sankt-Pēterburgā, Parīzē un Bristolē (no Bolton, 2007).

Drāmas izglītības plašās iespējas attīstīt bērnam vai jauniešiem spontanitāti un kreativitāti (no latīņu val. *creatio* - radīšana) sasaucās arī ar improvizācijas teātra formu, kuru plaši pielietoja V. E. Meijerholds, kas Krievijā, balstoties uz kustību teātri un biomehāniku, izveidoja savu pedagoģisko teātra sistēmu (Сафонова, 2015).

Improvizācijas teātris kļuva ļoti populārs izglītības vidē, pateicoties tādām ievērojamām personībām: pedagogiem un dramaturgiem kā Kīts Džonstens Lielbritānijā, Kanādā un Viola Spolina ASV.

V. Spolina improvizācijas teātri ir traktējusi kā “*Teātra spēles – improvizācijas*”. V. Spolinas izveidotajā *teātru spēļu centrā* skolotāji pārliecinājās, cik milzīgas iespējas dod teātra improvizācijas pedagoģisko problēmu risināšanā. Šo spēļu darbības struktūra atbilst Ž. Piažē kognitīvās teorijas pamatnostādņēm bērnu intelektuālās attīstības veicināšanā. Spēlēm ir pozitīvi panākumi daudzās mācību programmās. “*Teātra spēles – improvizācijas*” izmanto ne tikai pedagogi dažādu mācību priekšmetu programmās, bet arī terapeiti, psihologi, sociālās sfēras pārstāvji un speciālās pedagoģijas un iekļaujošās izglītības pārstāvji (Bīriņa, 2003). Par ieguldījumu izglītības, saskarsmes kultūras un bērnu teātra attīstībā V. Spolina ir saņēmusi daudzus apbalvojumus. Par mūža ieguldījumu visu paaudžu un sabiedrisko slāņu cilvēku dzīves bagātināšanā 1997. gadā V. Spolina saņēma Austrumu Mičiganas universitātes mākslas zinātņu goda doktora grādu (Spolin & Berg, 1999).

Drāmas pedagogijas vēsture liecina, ka teātra mākslas izglītība mūsdienu izpratnē sevi pieteica un attīstījās caur neformālo izglītību (Athiemoalam, 2013; Гребенкин, 2017):

- viduslaikos baznīcas izglītoja sabiedrību reliģijas jautājumos;
- Krievijā 19. gs. beigās veidojās “Ģimenes bērnu teātris” vai “Dārza teātris”, kur bērniem tika audzināta izpratne par labestību un dzimtenes mīlestību;
- 19. gs. beigās 20. gs. vidū angļu valodā runājošajā sabiedrībā teātra metodes pielietoja neformālā valodas mācībā, lai kolonijās palīdzētu apgūt valodu un iekļautu kolektīvā mazāk socializētus skolēnus un aktualizētu sabiedrības sociālo problēmu jautājumus;

- 20. gs. teātra mākslas izglītību izmantoja teātra profesionāļi, kuri izglītoja topošos aktierus un paralēli ieviesa drāmas metodiku vispārīzglītojošo skolu vidē, kā alternatīvu izglītošanas un audzināšanas metodi;
- kopš 20. gs. vidus līdz pat mūsdienām popularitāti ir ieguvušas improvizācijas teātra formas, kuras organiski iekļaujas pasaules un arī Latvija gan formālās, gan neformālās izglītības vidē.

Kopš 20. gadsimta vidus līdz mūsdienām popularitāti guva improvizācijas teātri. Ārzemēs un arī Latvijā improvizācijas teātra metodiku sāka izmantot skolas gan formālajā, gan neformālajā izglītībā .

Piemēram, Keits Džonstens, attīstot *radošās drāmas* ideju, izveidoja savu improvizācijas drāmas virzienu *Teātra sports*. K. Džonstens savas nodarbības pārvērta pretēji ierastajiem uzskatiem, atsaucoties uz Ž. Ž. Ruso ieteikumu rīkoties tieši pretēji tam, kā rīkojušies mūsu skolotāji, lai būtu uz pareizā ceļa. K. Džonstens izveidoja savu ieteikumu sarakstu (Johnstone, 1994):

- koncentrējoties uz kaut ko vienu, apgūt prasmi sadalīt uzmanību;
- veidojot stāstu, nedomāt tālāk par vienu pateiktu vārdu;
- nav *sliktu* ideju, jebkura *slikta* ideja ir līdz galam neattīstīta *laba* ideja;
- *noskatīšanos* pārvērst *atdarināšanā*;
- *garlaicība* ir interesantāka nekā *neizdevusies originalitāte*;
- runāt *ķēmīgā* (pārveidotā balsī) ir lielisks balss treniņa veids, *apmānot* paškontroli jeb *iekšējo cenzoru*.

K. Džonstens savā *teātra sportā* improvizāciju balstīja uz *Commedia dell'arte* (itāļu masku komēdija) idejām un formas, atļaujot saviem skolniekiem spēlēt zem *komiskās izkārtnes*. Šāda veida improvizācijas forma ļauj skolēnam nebaidīties būt savādākam, protams, saprātīga pedagoga vadībā, un palīdz bērnam (Johnstone, 1994):

- pārvarēt visiem piemītošās bailes no auditorijas kas skatās uz tevis;
- pārvērst *garlaicīgus* cilvēkus par *spožiem* cilvēkiem;
- uzlabot saskarsmes un komunikācijas mākslas prasmes un veicināt cilvēku savstarpējo attiecību izpratni;
- uzlabot *darbošanos* jebkurā dzīves jomā;
- attīstīt stāstīšanas prasmi (tā ir daudz svarīgāka, nekā to apzinās vairums cilvēku);
- veicināt radošu iztēli spontānu kreativitāti u.c.

Teātra sporta improvizācija balstās uz K. Džonstena izstrādātās metodikas, kuru mūsdienās pielieto daudzās valstīs ar perspektīvu nākotnē. Metodes pamatā ir spēļu tehnikas, kuras attīsta bērnam vai jauniešiem noteiktas prasmes:

- stāstu veidošanas tehnikas palīdz attīstīties publiskās runas prasmēm (“*Atdzīvojusies fotogrāfija*”, “*Slīdrāde*” u.c.);

- grupas tehnikas ļauj skolēniem justies droši grupā un atrast savu vietu tajā (“Mašīnas”, “Kopīgais Jā”, “Vienā balsī” u.c.);
- klātbūtnes tehnikas, kur skolēni apgūst prasmi redzēt, dzirdēt un just otru (“Aina ar maziņo”, “Divi roku pāri”, “Kalpu un kungu spēle” u.c.);
- kustību un plastikas tehnikas skolēns iepazīst sava ķermeņa reakciju uz dažādām situācijām (“Marionetes”, “Lēnās sporta spēles” u.c.);
- spontanitātes tehnikas attīsta skolēnā spēju ātri risināt problēmu, lemtspēju jeb spēju ātri pieņemt lēmumus un diverģento domāšanu (“Sēžus, stāvus, guļus”, “Mainies pēc katras frāzes” u.c.).

Pieredze liecina, ka Latvijas teātra mākslas neformālajā izglītībā K. Džonstena teorija un prakse ieguva popularitāti, sākot ar 1997. gadu, un jau divdesmit gadus veiksmīgi darbojas, kā *Teātra Sporta* kustība, kuru koordinē biedrība *Teātris un izglītība*. Biedrības *Teātris un izglītība* dibinātāja režisore Astra Kacena un režisors Juris Rijnieks ir *Teātra Sporta* pionieri Latvijā. Vēlāk viņu praksi un biedrību pārņēma režisore un lektore Mg.paed. Ligita Smildziņa. *Teātra sporta* kustība Latvijas teātra mākslas neformālajā izglītībā atvērusi durvis daudzām Latvijas kultūras personībām, kā režisoram Elmāram Senkovam, dramaturģēm māsām Agnesei un Madarai Rutkām u.c.

Pieredze liecina arī to, ka, iesaistoties neformālajā teātra mākslas izglītībā un apgūstot jaunas prasmes, piemēram, saskarsmes prasmes, pasaules un sevis izzināšanas prasmes, publiskās runas prasmes u.c., skolēns kļūst daudz drošāks un pozitīvāk noskaņots, un atvērtāks, gatavs iekļauties un radoši darboties dažādās vidēs, ir gatavs pārmaiņām un vides mainībai, jo sevī attīstījis domāšanas, saskarsmes un rīcības/darbības fleksibilitāti. Šajā sakarā raksta autori piekrīt jau 20. gs. 60. gados izteiktajai A. Maslova (Маслов, 1999) atziņai par jauna veida cilvēku, kurš jūtas ērti strauji mainīgajos ekonomiskajos un sociālajos apstākļos, jo spēj kritiski reaģēt, improvizēt dzīves negaidīti mainīgās situācijās, kurām nepieciešama diverģenta domāšana – radoša daudzpusīga, domāšana dažādos virzienos.

Teātra mākslas neformālās izglītības jēdziena teorētiskais pamatojums *Theoretical Substantiation of the Concept of Theatre Art Non-formal Education*

Teātra mākslas neformālās izglītības pētniecībā svarīgi ir pamatot šo izglītību ne tikai drāmas pedagogijas vēsturiskās attīstības kontekstā, bet arī mūsdienu neformālās izglītības kā viena no izglītības veidiem kontekstā.

Formālā, neformālā un informālā jeb pieredzes izglītība ir specifiski izglītības veidi, kas ir savstarpēji saistīti, kam ir savas kopīgas un atšķirīgas pazīmes (Kravale, 2006; Katane & Kalniņa, 2010).

Divi termini *neformālā izglītība* un *informālā izglītība* pedagogijas zinātniskajā leksikā ienāca 20. gs 70. gados, kad notika pasaules mēroga diskusijas par izglītības misiju un problēmām. Neformālā un informālā izglītība tika formulēta, izejot no situāciju daudzveidīguma, kas rodas dažādu valstu sabiedrību un katra atsevišķa indivīda attīstības un pašpilnveides procesā, kur jaunu zināšanu, prasmju, jaunas pieredzes gūšanai ir liela nozīme (Jarvis, 1999; Tight, 2003).

Kā norāda P. Džarvis (Jarvis, 1999: 129), sākotnēji termins *neformālā izglītība* vairāk tika izmantots pieaugušo izglītības kontekstā, lai apzīmētu izglītības procesu, kurā pieaugušie var piedalīties ārpus formālās izglītības sistēmas. Neformālās izglītības mērķi, saturs un pats process izriet no noteiktas mērķauditorijas izziņas vajadzībām un interesēm, profesionālās pašattīstības un karjeras izaugsmes mērķiem.

Zinātnieki P. Kumbs un M. Ahmeds (Coombs & Ahmed, 1974: 8) paplašināja neformālās izglītības nozīmi, to attiecinot uz jebkura vecuma mērķauditoriju mūžizglītības kontekstā. Viņi par *neformālo izglītību* sauc “... jebkuru organizētu, sistemātisku izglītojošo darbību, kas notiek ārpus formālās izglītības sistēmas, lai nodrošinātu izglītības daudzveidību un pieejamību dažādām iedzīvotāju grupām, t.sk. pieaugušajiem un bērniem”.

Postpadomju valstu zinātnieku (Волкова, 2008; Мошкин, 2004) darbos neformālās izglītības jēdziens tradicionāli tiek cieši saistīts ar *interesešu izglītības* kā *papildizglītības* jēdzienu, ko iegūst paralēli un vienlaicīgi ar bāzes formālo izglītību, apmeklējot sporta, mūzikas, mākslas skolas, bērnu un jauniešu interesešu centrus, skolās piedāvātās ārpusstundu nodarbības: dažāda veida interesešu pulciņus un fakultatīvās nodarbības (no Katane & Kalniņa, 2010). Arī mūsdienās Latvijas izglītības terminoloģijā vēl aizvien ir pieņemts izdalīt bērnu un jauniešu *interesešu izglītību* kā neformālās izglītības sastāvdaļu, kas ir papildus iespēja sevi attīstīt un pilnveidot kā personību līdztekus formālajai izglītībai (Katans, Jurgena, Katane, & Svareniece, 2015; Katane & Svareniece, 2015).

Mūsdienu teātra mākslas neformālās izglītības galvenais mērķis ir veicināt personības vispusīgu, t.sk. garīgo, fizisko, sociālo, tikumisko, emocionālo attīstību. Teātra mākslas neformālās izglītības rezultātā veidojas jauniešu gatavība no vecākām paaudzēm pārņemt kultūras vērtības, kopt un tālāk uzturēt kultūru, kā arī pašiem jaunradīt ko jaunu, sev un sabiedrībai vērtīgu. Teātra mākslas neformālās izglītības rezultātā bērni un jaunieši izzina sevi, apzinās savas varēšanas robežas un cenšas šīs robežas paplašināt, attīstot sevī spēju uzdrīkstēties, nebaidīties pasauli redzēt un uztvert savādāk nekā to redz un

uztver vairākums. Radošums un sevis daudzveidīgā pašizpaušme ir vieni no jauniešu teātra mākslas neformālās izglītības raksturotājrādītājiem.

Teātra mākslas neformālās izglītības formu dažādība, kā arī drāmas pedagoģijas bagātīgā metodika ļauj pedagogam izvēlēties piemērotāko metodi, lai palīdzētu atraisīt skolēnos viņu individualitāti (Bolton, 2007; Резник, 2015).

Neformālā teātra mākslas izglītība ir neatņemama mūsdienu izglītības vides sastāvdaļa, kurā skolu jaunatne attīstās un kļūst par konkurētspējīgām personībām, kas zina savas stiprās un vājās puses, nemitīgi sevi pilnveido, mācās plānot laiku un sevi pašvadīt, mācās sadarboties, apgūst dažādas sociālās lomas, prot prezentēt sevi, nebaidās no pārmaiņām, ir sensitīvi attiecībā uz izveidojušos situāciju un spēj atbilstoši reaģēt un pieņemt lēmumus, sevī attīstījuši augsta līmeņa saskarsmes kultūru un sociālo kompetenci u.c.

Secinājumi **Conclusions**

Mūsdienu izglītības sistēmu veido formālā un neformālā izglītība, kur nozīmīgu vietu ieņem neformālā teātra mākslas izglītība, kuras teorētiski metodoloģiskais pamats ir drāmas pedagoģija.

Primāri teātra mākslas izglītība mūsdienu izpratnē sevi pieteica un attīstījās caur neformālo izglītību:

- viduslaikos baznīcas izglītoja sabiedrību reliģijas jautājumos;
- Krievijā 19. gs. beigās veidojās “Ģimenes bērnu teātris” vai “Dārza teātris”, kur bērniem tika audzināta izpratne par labestību un dzimtenes mīlestību;
- 19. gs. beigās 20. gs. vidū angļu valodā runājošajā sabiedrībā teātra metodes pielietoja neformālā valodas mācībā, lai kolonijās palīdzētu apgūt valodu un iekļautu kolektīvā mazāk socializētus skolēnus un aktualizētu sabiedrības sociālo problēmu jautājumus;
- 20. gs. teātra mākslas izglītību izmantoja teātra profesionāļi, kuri izglītoja topošos aktierus un paralēli ieviesa drāmas metodiku vispārizglītojošo skolu vidē, kā alternatīvu izglītošanas un audzināšanas metodi;
- kopš 20.gs. vidus līdz pat mūsdienām popularitāti ir ieguvušas improvizācijas teātra formas, kuras organiski iekļaujas pasaules un arī Latvija gan formālās, gan neformālās izglītības vidē.

Gan rietumvalstīs, gan Latvijā, gan arī Krievijā drāmas pedagoģija attīstījās līdz ar teātra mākslas teorijas attīstību, vairāki autori, pateicoties savai pieredzei, nonāca pie savas autormetodikas, kas guva popularitāti un mūsdienās ir

pazīstamas jau ar konkrētiem nosaukumiem: *teātra sports, teātra spēles – improvizācijas, radošā drāma u.c.*

Drāmas pedagoģijas pieejas un metodes gan agrāk, gan arī mūsdienās tiek izmantotas gan skolu mācību procesā, apgūstot dažādu mācību priekšmetu saturu, gan arī neformālajā teātra mākslas izglītībā: skolēnu teātra pulciņos vai studijās, skatuves runas pulciņos vai fakultatīvos u.c.

Skolotāja kompetence drāmas metodikā ļauj brīvi izvēlēties no bagātīgā drāmas pedagoģijas metožu arsenāla vispiemērotāko atbilstoši: mērķim un uzdevumiem; skolēnu zināšanām, spējām, prasmēm un pieredzei; situācijai; videi.

Neformālā teātra mākslas izglītība veicina skolu jaunatnes garīgo, fizisko, sociālo, emocionālo, tikumisko attīstību, sekmē individuālo spēju attīstību un pilnveidi, sadarbību, dažādu sociālo lomu apguvi, pašprezentāciju, spēju būt elastīgam domāšanā, saskarsmē un darbībā, kas nodrošina jauniešu gatavību pārmaiņām, t.sk. iekļauties un radoši darboties nepārtraukti mainīgā vidē, kas kopumā nodrošina jauniešu konkurētspējas attīstību.

Neformālā teātra mākslas izglītība mūsdienās veiksmīgi papildina formālo izglītību, tādējādi tai ir liela nozīme bērnu un jauniešu jaunas, dzīvei nepieciešamās sociālās pieredzes ieguvē, kā arī viņu personības attīstības veicināšanā kopumā. Drāmas pedagoģija piedāvā daudzveidīgu metodiku, kas ir izmantojama skolas gan formālajā, gan neformālajā izglītībā.

Summary

Nowadays not only formal but also non-formal education plays a significant role in the context of lifelong learning and lifewide learning. By getting involved in various non-formal education activities, with overall and personality development, children and young people socialise, gain new experiences, and acquire new social roles. In Latvia and other countries we separately identify hobby (interests) education for children and youth which is treated as constituent part of non-formal education and an alternative and complementary element of the formal education promoting the personality development. An important role in the education system is played by theatre art non-formal education or drama non-formal education which finds its theoretical methodological base in drama pedagogy.

Research shows that throughout the process of development of drama pedagogy the non-formal education of drama has various forms.

- In the Middle Ages the church educated people on secular matters;
- In the late 19th century the Russian Children Theatre or the Courtyard Theatre was popular, teaching children goodness and love for one's country;
- In the late 19th century and in the middle of the 20th century the English-speaking part of the population used theatrical methods in non-formal teaching of the language. The purpose was to help master English in colonies and the Republic of South Africa, as well as include less-social students and raise awareness of social problems;

- In the 20th century drama pedagogy was used by professionals in training prospective actors, as well as in general educational establishments as an alternative educational and teaching method.

Historically and up to now, the approaches, principles and methods of drama pedagogy are used in the teaching and learning process in school settings to acquire the contents of different subject areas, as well as in non-formal education: student drama clubs or studios, public speaking courses or optional after-class activities etc.

Several renowned drama educators and playwrights basing on their experience, developed original methodologies, which gained popularity and now are known by the specific names: *theatre sports, theatre games – improvisations, creative drama etc.*

The pedagogical competence of drama teacher allows selecting the most appropriate techniques from the vast spectrum of pedagogical methods in accordance to: 1) aim and objectives; 2) knowledge, abilities, skills and experience of students; 3) settings and situation. Children and youth are developing in interaction with drama non-formal education environment where the central role is played by the drama teacher.

Drama non-formal education is an integral part of today's education context, which promotes mental, physical, social, emotional, moral development of the personality among the school children and youth, as well as enhances the development of individual abilities, ensures preparedness for the change and becoming competitive personalities who are in constant development, learning to self-manage and plan time, cooperate, acquire different social roles, present themselves, are not afraid of changes, become creative and flexible both in thinking and in action-taking, are able to be sensitive towards the situation and take appropriate action and decisions. Drama non-formal education promotes the development of high-level communication culture and formation of social competence among the school youth.

Nowadays theatre art non-formal education successfully complements formal education, thus it plays an important role in the acquisition of new social life experiences for children and young people, as well as in promoting their personality development in general. Drama pedagogy offers various methodologies that can be used by schools in both formal and non-formal education.

Literatūra References

- Athimoolam, L. (2013). *Using Drama-in-education to Facilitate Active Participation and the Enhancement of Oral Communication Skills among First Year Pre-service Teachers*. Retrieved from <http://research.ucc.ie/scenario/2013/02/04-Athimoolam-2013-02-en.pdf>
- Bīriņa, G. (2003). Teātra sports: dzīve improvizācijā. *Psihologijas pasaule, 1*, 54.–58.
- Bolton, E. (2007). A History of Drama Education: A Search for Substance. In L. Bresler (Ed.), *International Handbook of Research in Arts Education*. The Netherlands, Dordrecht: Springer.
- Coombs, P., & Ahmed, M. (1974). *Attacking Rural Poverty: How Nonformal Education Can Help*. Baltimore: Johns Hopkins University Press.
- Jarvis, P. (1999). Global trends in lifelong learning and the response of universities. *Comparative Education, 35* (2), 249-257.

- Johnstone, K. (1994). *Don't Be Prepared. Theater Sports for Teachers*. Canada, Loose Moose Theater Company.
- Katane, I., & Kalniņa, I. (2010). *Skolēnu personības konkurētspējas attīstība neformālās komercizglītības vidē*. Jelgava: LLU.
- Katans, E., Jurgena, I., Katane, I., & Svareniece, B. (2015). Development and Evaluation of Non-formal Education Programme "Programming" in the Environment of Distance Education Secondary School. *Proceedings of the International Scientific Conference Society. Integration. Education, Vol. 4*, 436 – 449.
- Kravale, M. (2006). Youth Non-Formal Education in Latvia. PhD Thesis Summary. Daugavpils: Daugavpils University.
- Spolin, V., & Berg, N. (1999). *Teātra spēles – improvizācijas*. Rīga: Preses nams, 291 lpp.
- Svareniece, B., & Katane, I. (2015). Children and Youth Interest Education Establishment as Non-formal Educational Environment in Latvia. *Proceedings of the International Scientific Conference Society. Integration. Education, Vol. 2*, 219 - 232.
- Tight, M. (2003). *Key Concepts in Adult Education and Training*. (2nd ed.). London - New York: Routledge, Taylor & Francis Group.
- Гребенкин, А. (2017). *Театральная педагогика вчера и сегодня*. Театр 111. Retrieved from <http://theater111.ru/science03.php>.
- Волкова, С. Л. (2008). *Становление познавательного интереса старшеклассников средствами лингвострановедения*. Автореферат диссертации на соискание ученой степени кандидата педагогических наук. Санкт-Петербург: Ленинградский государственный университет имени А. С. Пушкина.
- Маслов, А. (1999). *Новые рубежи человеческой природы*. Москва: Смысл.
- Мошкин, В. Н. (2004). *Воспитание культуры безопасности школьников*. Диссертация на соискание ученой степени доктора педагогических наук. Общая педагогика, история педагогики и образования. Барнаул: Барнаульский государственный педагогический университете.
- Резник, С. В. (2015). *Приёмы и методы театральной педагогики как средство развития и воспитания младших школьников*. Pedportal.net. Retrieved from <https://pedportal.net/po-zadache/>.
- Сазонова, В. А. (2015). Мейерхольд и его театральное наследие. *Вестник ТГУ, 1 (1)*, 81-90.
- Тинина, З. П. (2005). *История европейского театра от античности до новейшего времени*. Волгоград: Изд-во ВолГУ.

DIZAINA DOMĀŠANA PEDAGOĢIJAS KONTEKSTĀ

Design Thinking in the Context of Pedagogy

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Abstract. *The concept of “design thinking” is thought to originate at late 60’s of the last century when the first books in this regard were published. Latest in 1987, Professor P. G. Rowe, (University of Harvard) describes design thinking as a process and a method which can be used in various disciplines, including in education. Thus the field of design and architecture began; nowadays design thinking has become an effective learning strategy. The method is based on not declining anything right off the bat but rather go in-depth, test, analyze, look at things multiple (at least two) times and look at them from different angles. It is believed that each of us has design thinking, we only need to activate it, “set it free”, and the faster we do it, the better; that is exactly why design thinking should be started at an early age, during school years, not only when in college or university.*

Design thinking as a thought process is one of the future skills which will be needed in 21st century’s wide variety of fields – design, economics, construction, architecture, engineering, technology and, of course, in education.

Different sources of literature point out a different number of design thinking stage (thinking “steps”) count: from three to seven or eight that can be represented both as a linear process and as a single complex system in which interconnection of stages/ steps is seen.

In the study course of pedagogy students of different study programs and study courses (physiotherapists, audiologists, orthotics-prosthetists, nutrition specialists, social workers) tested and evaluated some of the basic principles of design thinking, such as empathy, creativity, collaboration, responsibility and interdisciplinary approach. Also students adapted and improved pedagogical strategies for developing design thinking in the practice. Those strategies were: generation ideas, designing and presentation of possible solutions, solving problems, creation prototypes, drawing empathy maps. The first results of approved design thinking principles and methods are analyzed in this article.

Keywords: *design thinking in pedagogy, principles and methods of design thinking, study process.*

Ievads

Introduction

Dizaina domāšanu raksturo pieeja, kuras uzmanības centrā ir cilvēks, (augstskolā – studējošais), viņa vēlmes un profesionālās vajadzības. Dizaina domāšana ir kritisks, radošs un analītisks domāšanas veids – process, kura rezultātā ikviens pieņemtais lēmums ir empātisks cilvēkam, veido un uzlabo viņa

nākotni. Mērķis – tādu vērtību (produktu) radīšana, kas padarītu ikviena indivīda dzīvi vienkāršāku un labāku.

Par koncepta “dizaina domāšana” (turpmāk – DD) pirmsākumiem uzskata pagājušā gadsimta 60.to gadu beigas, kad tika izdotas pirmās grāmatas (“*Science of Artificial*” Herbert A. Simon, 1969) un “*Experiences in Visual Thinking*”, Robert H. McKim, 1980) par šo tēmu (Design thinking). Nedaudz vēlāk – Hārvardas universitātes profesora Roves grāmata (“*Design thinking*”, P. G. Rowe, 1987), kurā viņš pirmo reizi apraksta DD kā procesu un metodi, kas ir piemērojama dažādās disciplīnās, tostarp izglītībā (Rowe, 1987). Kā norāda Rove, DD centrā ir radošās, problēmrisināšanas, inovāciju un izgatavošanas prasmes, tā ir spēja saskatīt saiknes starp lietām, ko mēs pazīstam; jo vairāk lietu pazīstam – jo vairāk savstarpējo saikņu spējam izveidot.

Tādējādi – savulaik aizsākusies dizaina un arhitektūras jomā, šodien DD ir kļuvusi par efektīvu mācīšanās stratēģiju. Metodes pamatā ir doma – neko nenoraidīt pirmajā brīdī, bet iedziļināties, pārbaudīt, izpētīt, paskatīties uz lietām vairākas (vismaz divas) reizes un aplūkot tās no dažādiem aspektiem (Cross, 2001; Campbell, 2015). Pastāv uzskats, ka DD piemīt ikvienam no mums, tā tikai jāaktivizē, “jāatbrīvo”, jo ātrāk sākam to darīt, jo labāk (Kolko, 2015). Tieši tādēļ DD attīstīšana uzsākama jau bērnībā, skolas gados, ne tikai augstskolā. DD kā metode sevī ietver attieksmes maiņu pret tradicionālām lietām, jo apvieno analītisko un radošo domāšanu, padara vadāmu un saprotamu visdažādāko inovāciju radīšanu, kā arī apskata lietu un notikumu izpēti, ideju radīšanu, risinājumu izstrādes un domāšanas vadības metodes noteiktā secībā, lai sasniegtu problēmas risinājumu ar maksimālu efektivitāti (Razzouk & Shute, 2012).

DD kā domāšanas veids ir arī viena no nākotnes prasmēm (*future skills*), kas 21. gadsimtā būs nepieciešama visdažādākajās jomās – dizainā, ekonomikā, celtniecībā, arhitektūrā, inženierzinātnēs, augsto tehnoloģiju jomā un, protams, izglītībā. Kā norāda profesionāli dizaineri, *t.i., arvien pieaugošu popularitāti iegūstošs vārdu savienojums ar atšķirīgām definīcijām un pielietošanas metodēm*. Viens no populārākajiem DD skaidrojumiem ir: “*metodoloģija inovāciju radīšanai, kas apvieno kreatīvu un analītisku procesu vadību un veicina starpdisciplināru sadarbību*” (Solovjova, 2018), ar DD šajā kontekstā saprotot ne tikai tīri vizuālus risinājumus, bet arī stratēģijas un komunikācijas plāna izstrādi, izglītojošas kampaņas, aplikāciju un interneta platformu izveidi un neskaitāmas citas starpdisciplināras aktivitātes, kas, dizaina procesam noslēdzoties, kļūst par daļu no lietotāja pieredzes. Tas izskaidro faktu, ka literatūrā nav joprojām vienotas koncepta definīcijas (Brown, 2008). Kā nosacīti DD sinonīmi tiek lietoti vairāki domāšanas paņēmieni (veidi), piemēram:

Integrējoša domāšana (integrative thinking) – domāšanas veids, kas aktualizēties jo īpaši divās pēdējās desmitgadēs, tā pamatā ir jaunu alternatīvu meklēšana, nevis izvēle no jau esošajām iespējām.

Diverģentā domāšana (divergent thinking) – domāšanas veids, ar to apzīmējot procesu, kurā no viena sākuma punkta domas virzās dažādos virzienos, meklējot daudzas idejas vai variantus. Diverģentās domāšanas ietvaros parasti vienai problēmai vai jautājumam tiek ģenerēti vairāki iespējami risinājumi (ja variantu daudz – būtiski palielinās iespēja atrast jaunu, vēl lietderīgāku risinājumu).

Telpiskā domāšana (spatial thinking) – tās rezultāts ir telpiskās spriešanas prasme, kas veido indivīda telpisko pieredzi visa mūža garumā un tai ir izšķiroša nozīme vairākās dzīves nozarēs, bet jo īpaši radošajās profesijās. Telpiskās spriešanas prasme, kā mācīšanās rezultāts, sniedz iespēju katram studentam mērķtiecīgi izvērtēt risināmo problēmu, izvērtēt to kritiski, pamatot savu darbību un uzņemt atbildību, apzinoties lēmuma un rīcības ietekmi uz apkārtējo vidi (Karlson, 2015).

“Ārpus rāmja” vai “ārpus kastes” domāšana (“Outside the Box thinking”, “Thinking Outside The Square”) – tāda, kas it kā neatbilst sākotnējiem nosacījumiem un vispārpieņemtajiem kanoniem, bet domāšanas procesā liek indivīdam “iziet” no tradicionālas pieejas vai nosacījumiem (Goodson, 2010). Latviešu valodā “ārpus kastes” domāšana tiek saukta arī par *laterālo vai konceptuālo domāšanu*. Konceptuāli domājošs cilvēks izmanto uzkrāto profesionālo pieredzi un izglītību, apvieno to ar radošu pieeju, pievieno intuīciju un induktīvu domāšanu, lai rastu pilnīgi jaunu, negaidītu risinājumu.

Pedagoģijas kontekstā koncepts DD jeb *dizaina izglītība* tiek lietots kā *“dizaina domāšana pedagogiem”*, attiecīgi piedāvājot konkrētus risinājumus izglītības programmu īstenošanā kā vidējās, tā augstākās izglītības iestādēs (Design Thinking for Educators; Razzouk & Shute, 2012; Research on Design Thinking). Dizaina izglītības mērķis ir ne tikai apgūt profesionālās prasmes, bet arī sekmēt topošo speciālistu izpratni par konkrētu risinājumu ietekmi uz indivīda dzīves kvalitāti, apkārtējo vidi, kā arī rosināt katra personīgo atbildību par pieņemtā lēmuma piemērotību un atbilstību.

Mērķis: Analizēt atsevišķu DD principu un metožu izmantošanas iespējas studiju kursā “Pedagoģija” topošo sabiedrības veselības, sociālā darba, rehabilitācijas u.c. speciālistu pedagoģiskās kompetences paplašināšanai.

Metodes: teorētisko atziņu aprobācija praktiskajā darbībā, savas un grupas biedru darbības analīze, vērtējums un pašvērtējums, praktiski ieteikto risinājumu testēšana un izvērtēšana, aptauja.

Atslēgas vārdi: dizaina domāšana pedagoģijā, dizaina domāšanas principi un metodes, studiju process.

Pētījuma metodoloģija ***Research methodology***

Studiju procesā un zinātnē ir svarīga teorētiskās atziņas balstīta, sistēmiska domu un lēmumu organizēšana. Dizaina procesā tas ir nepieciešams, prognozējot risinājumu efektivitāti un lietderīgumu (Irbīte, 2014). Soļi, ko personai (darba grupai), kas vēlas apgūt DD pamatprincipus jāapzinās ir trīs 1) man ir problēma – situācija, kas jārisina, 2) man nepieciešamie resursi – prasmes, talants, lai to atrisinātu, 3) man ir risinājums – es protu izstrādāt praktiski īstenojamu plānu un spēju likt tam darboties (Lawson, 1990). Atbildes uz jautājumiem, cik soļos un kā to izdarīt labāk, tika meklētas studējošo praktiskākajās nodarbībās, analizējot konkrētus gadījumus un risinot profesionālajā vidē radušās situācijas.

1. posms. Lai praktiski izvērtētu studentu prasmi adaptēt DD pamatprincipus “soli pa solim” savā profesionālajā vidē, vairākām respondentu (12 grupas, kopskaitā 58 studējošie, katrā grupā 4-5 studenti) grupām tika piedāvāts DD modelis ar atšķirīgu domāšanas “soļu” (t.i., 3, 5, 6 un 8) jeb posmu skaitu. Balstoties uz teorētisko modeli, darba grupai bija jāmodelē, jāaizstāv vairāki (vismaz 2-3) problēmsituācijas risinājuma varianti un jāpierāda to lietošanas iespējamība un praktiskā nozīme.

2. posms. Balstoties uz lekcijās apgūto teorētisko materiālu, grupā izvērtēt DD pamatprincipus, raksturot un pamatot izveidotos prototipus, darba grupā vienoties par konkrētā DD modeļa plusiem un /vai mīnusiem un iespējām adaptēt to savā profesionālajā darbības vidē nākotnē.

3. posms. Izveidot empātiju karti sava un klienta (pacienta) sajūtu raksturošanai.

Rezultāti un diskusija ***Results and discussion***

Kā norādīts iepriekš, viena no īpašībām, kas raksturo DD ir radošums jeb indivīda spēja iziet ārpus tradicionālās domāšanas (ārpus “kastes”) robežām. Par vienu no šī domāšanas veida ieviesējiem personības izpētē uzskata amerikāņu psihologu Gilfordu (Guilford, 1970). Lai nosacīti “pārbaudītu”, vai students ir tai gatavs, izmantojām salīdzinoši vienkāršu t.s. Gilforda testu: “deviņu punktu puzli” (*The Nine Dots Puzzle*). Testa uzdevums bija savienot savā starpā 9 punktus ar 3 līnijām, neatņemot zīmuli no papīra (Creativity, Inspiration. Think Outside The Box; Thinking Outside the Box: A Misguided Idea). Tas, kurš uzdevumu pamēģinājis (veicis), ir pārliecinājies, ka to izpildīt ir iespējams tikai tad, ja līnijas tiek pagarinātas un iziet ārpus kvadrāta (nosacītās “kastes”) robežām. Laiks, kādā uzdevums tiek veikts (vai netiek veikts vispār) liecina par tā veicēja spēju domāt plašāk un pārkāpt iedomātās robežas. Mūsu gadījumā, dodot testa izpildei

5 minūtes, ar to veiksmīgi tika galā nedaudz vairāk par 50 % studentu. Papildus laikā – vēl 3 minūtēs, un atklājot, ka risinājums ir meklējams ārpus iedomātās kastes ietvariem, uzdevumu spēja veikt vēl 10-15 studenti.

Tradicionālā izpratnē DD pamatā ir trīs secīgi posmi, ko nosacīti var apzīmēt ar trīs burtiem “**I-I-I**”: Iedvesma. Ideju ģenerēšana. Ieviešana. (*Inspiration. Ideation. Implementation*) (Solovjova, 2017).

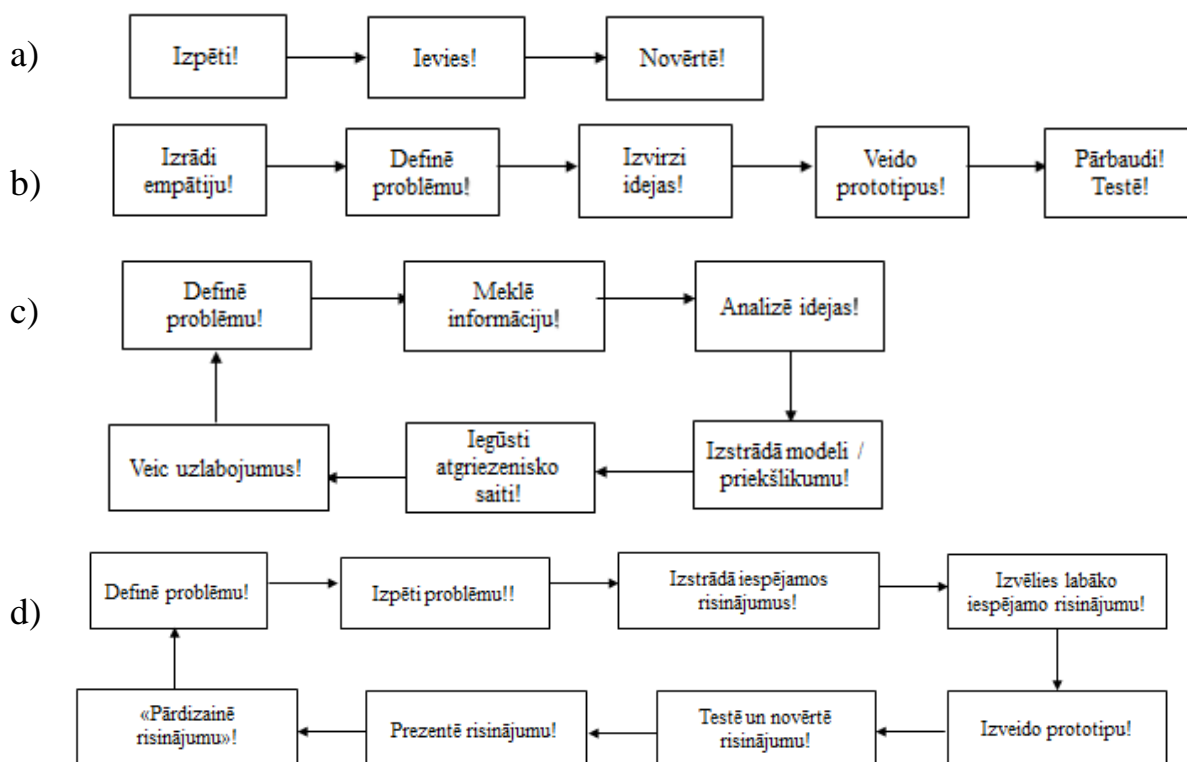
Iedvesmas jeb izpētes posmā notiek iepazīšanās ar aplūkojamo jautājumu. Darba grupai nav zināma ne problēma, ne tās risinājums. Tas ļauj izvirzīt pārdrošus priekšlikumus un nonākt pie negaidītiem risinājumiem. Nodarbības ietvaros tiek sadalītas lomas, modelētas aptaujas un intervijas, notiek dažādu viedokļu uzklauššana, apkopoti un analizēti vērojumi. Būtiski ir šim posmam atvēlēt pietiekoši daudz laika. Jo pārdrošāki būs piedāvājumi, jo negaidītāki pēc tam sekos risinājumi. Posma noslēgumā informācija tiek apkopota un grupēta, rezultāti veido turpmāko pētījuma kodolu. Būtiskākais princips – *empātija* – spēja iejusties sava potenciālā klienta lomā, iepazīt klātienē (nodarbības ietvaros ar lomu spēles palīdzību) savu klientu un uz “savas ādas” izjust viņa sajūtas.

Ideju ģenerēšanas un testēšanas posms. Uz iepriekš izvirzīto pētījumu bāzes tiek izstrādāts rīcības plāns, kas tiek pārbaudīts un uzlabots ar prototipu palīdzību (*prototips* – taustāms koncepcijas atspoguļojums, kas ļauj ideju prezentēt plašākam lietotāju lokam). Būtiski, lai prototipi būtu vairāki, vienlīdz reāli un pamatoti ar autora apgalvojumiem un pierādījumiem. Prototipu dizainēšana var tikt uzsākta nodarbībā, pabeigta kā patstāvīgs uzdevums mājās.

Ideju ieviešanas posms. Kad prototipu izvērtēšana pabeigta un izvēlēts potenciāli piemērotākais risinājums, notiek idejas ieviešana dzīvē. Arī ieviešanas posmā nav jābaidās no korekcijām vai kļūdu labojumiem, kas kopumā izvirzītā (ieteiktā) produkta / pakalpojuma kvalitāti tikai uzlabo (Solovjova, 2017).

Ņemot vērā to, ka literatūras avotos tiek norādīts atšķirīgs DD posmu (fāžu) skaits – no trīs līdz pat septiņiem, astoņiem un vairāk (Stages in the Design Thinking Process) (skat. 1. att.), ko shematiskā veidā to var attēlot gan kā lineāru, gan noslēgtu un ciklisku procesu, pētījuma **1. posmā** katrām 3 studentu grupām tika dots uzdevums pārbaudīt, kā viņuprāt strādā konkrētais (viens no) DD teorētiskajiem modeļiem. Minētais ļauj iztēloties un praktiski palūkoties uz DD gan kā lineāru procesu, gan kā vienotu kompleksu sistēmu, kurā vērojama posmu/soļu savstarpēja mijiedarbība.

Kā redzams, posmi var mīties un atkārtoties, pārklāties un sākties no jauna, taču galvenā būtība paliek nemainīga – t.i. spēja iedziļināties kontekstā, klienta vēlmēs un vajadzībās, kas praktiski izpaužas kā jaunu problēmu definēšana, vairāku jaunu prototipu (risinājumu) veidošana un testēšana, secinājumu izdarīšana, labākā risinājuma izvēlēšanās, tā atkārtota pārbaudīšana, visu iepriekš minēto darbību atkārtošana, “pārdizainēšana” līdz izkristalizējas nepieciešamais risinājums.



1. att. **Studentu testētie DD teorētiskie modeļi ar atšķirīgu domāšanas soļu skaitu**
 Figure 1. *Theoretical models with different number of thinking steps tested by students*

Katrs no 1. attēlā norādītajiem DD modeļiem tika testēts 3 studējošo grupās. Grupas dalībnieki, atbilstoši pašu izvēlētai situācijai, modelēja un pamatoja vairākus iespējamus risinājumu veidus atbilstoši apgūstamās studiju programmas specifikai. Piemēram:

- fizioterapeits – izvēloties pacientam piemērotāko vingrojumu kompleksu noteiktā viņa rehabilitācijas posmā;
- ortozists - protēzists – dizainējot vairākus iespējamus palīglīdzekļu vai atbalsta ierīču prototipus, nodarbībās testējot tos tīri teorētiski un izvērtējot tās vai citas ierīces plusus un mīnus;
- audiologopēds – pārbaudot efektīvākās sadarbības metodes savstarpējā komunikācijā ar bērna vecākiem;
- uztura speciālists – izstrādājot pēc iespējas uzskatāmu, saistošu informatīvu materiālu (bukletu, reklāmas klipu, plakātu, preses relīzi u.tml.) par veselīga uztura pamatprincipiem konkrētai mērķauditorijai);
- sociālais darbinieks – “izspēlējot” atšķirīgus savstarpējā dialoga (komunikācijas) variantus sarunā ar klientu konkrētas problēmsituācijas atrisināšanai.

Pamatnosacījums visos gadījumos – *vairāku* prototipu veidošana un salīdzināšana, ievērot DD modelī noteikto domāšanas soļu skaitu. Didaktiskais

mērķis – spēt formulēt un attīstīt *savu* radošu un inovatīvu ideju, atbilstoši izvirzītajiem nosacījumiem.

Pētījuma **2. posmā** tika analizēti daži DD principi. Skaidrības labad, jānorāda, ka DD principi dažādos literatūras avotos atkarībā no darbības jomas, kurā tie tiek lietoti, atšķiras. Detalizētai analīzei konkrētajā pētījumā izvēlēti tādi DD pamatprincipi kā atbildība, radošums, empātija, sadarbība, starpdisciplināra pieeja (Brown & Martin, 2015; Kolko, 2015).

- *Atbildība (accountability)* – kā pienākums pildīt noteiktas saistības; konkrētai atbildības jomai parasti tiek noteikti kritēriji, pēc kuriem var vērtēt darbības rezultātus; DD kontekstā atbildību raksturo drosme, spēja apzināti riskēt, uzņemties ko jaunu un eksperimentēt.
- *Radošums (creativity) – radītspēja jeb kreativitāte* – spēja uz jaunradi, jaunu ideju vai konceptu radīšanu kā noturīga personas individualitāti raksturojoša īpašība, ko raksturo netradicionāli risinājumi, novatorisms, oriģinalitāte, iedvesma, bagāta fantāzija, psihes plastiskums.
- *Empātija (emphaty)* – kā spēja iejusties klienta psihoemocionālajā stāvoklī, pieņemt to un izjust to paša pārdzīvojumu (Svešvārdu vārdnīca).
- *Sadarbība un līdzdarbība (cooperation, collaboratin)* – divu vai vairāku sistēmu kopīga darbība, lai sasniegtu savstarpēji saistītus, kopīgus mērķus, balstoties uz informācijas apmaiņu, t.i., process, kas sevī ietver indivīda spēju ieklausīties – atbildēt un informēt; ieklausīties – dalīties un palīdzēt; ieklausīties – ieteikt un jautāt.
- *Starpdisciplināra, starpnozaru pieeja (Interdisciplinary, inter-sectoral approach)* – lai nodrošinātu saskari ar pēc iespējas dažādākām darbības jomām un nozarēm, pavērtu jaunas izglītības un novatorisma iespējas un ļautu reaģēt uz pašreizējām sociālekonomiskām un kultūras tendencēm un prasībām.

Studentu uzdevums bija 5 punktu skalā novērtēt attiecīgā principa nozīmīgumu, sakārtojot tos viņuprāt prioritārā secībā un piešķirot vērtības no 1 līdz 5, kur augstākais vērtējums ir 5 punkti, zemākais vērtējums – 1 punkts. Lai noteiktu galvenās tendences studējošo atbildēs, tika salīdzināti 3 lielumi – *Average* – atbilžu vidējās vērtības, *Mode* – kā atbilžu kopā visbiežāk sastopamā atbilde un *Median* – kā vidējais atbilžu kopas skaitlis (skat. Tabulu).

Kā rāda tabulas dati, 1. kursa studenti visaugstāk vērtē **atbildību** un **radošumu** (ar pirmo acīmredzot saprotot savu personīgo ieguldījumu DD procesā un jaunas idejas radīšanā), vienlaikus atzīstot, ka būtiski svarīga ir arī sadarbība (vairāk gan savas darba grupas ietvaros nevis starp-profesiju un starp-institucionālā līmenī). Jāatzīst, ka 1. kursa studenti pienācīgi nenovērtē empātijas nozīmi un diemžēl vāji saskata saikni starp dažādām nozarēm (disciplinām, kas principā dara vienu un to pašu darbu).

Tabula. DD principu praktiskais nozīmīgums studentu vērtējumā
 Table *Practical significance of DD principles in students' assessment*

Respondenti (N=58)	Atbildība	Radošums	Empātija	Sadarbība	Starp- disciplināra pieeja
1.kursu studenti (N=42)	3,92* 5** 4***	3,81 4 4	2,31 1 2	3,08 3 3	1,83 1 1
3.un 4.kursu studenti (N=16)	2,13* 1** 2***	3,16 3 3	4,25 4 4	1,88 1 1,5	3,63 5 3,5

Paskaidrojumi: *) Average; **) Mode; ***) Median.

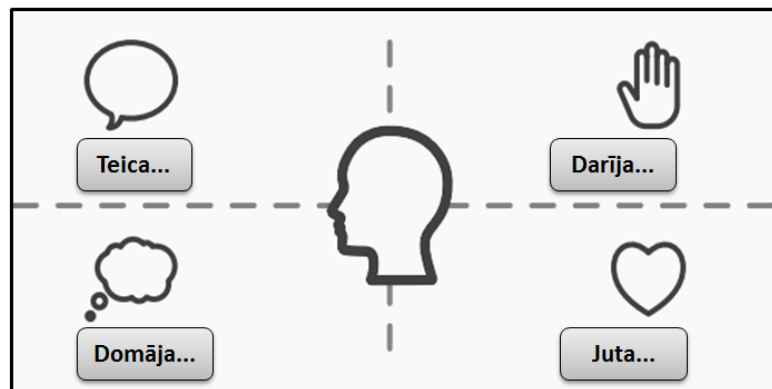
Tikai daļēji atbildēts paliek jautājums, kādēļ empātija kā princips, kas ir tik būtisks jebkuras idejas attīstīšanai un tālākvirzībai, 1. kursa studentu redzējumā ir maznozīmīgs. Iespējams, tā ir atbildības sajūta, ar kādu studijas tikko uzsācis jaunieši pieiet nākamajai profesijai un zināšanu apguvei, tā īsti neizprotot inovāciju radīšanas būtību un nozīmi.

Savukārt vecāko kursu studenti kā prioritāros DD principus vairums gadījumos min tieši **empātiju** un starpnozaru, **starpdisciplināras pieejas** nozīmīgumu. Kā atzīst 3. un 4. kursa studenti, starpdisciplināra pieeja ne vienmēr īstenojas praksē studiju procesā. Atbilstoši studentu atbildēs norādītajam: (...) *fizioterapeits ne vienmēr zina, kā pareizi lietojama izveidotā ortoze, savukārt pacientam tas rada papildus grūtības "sadzīvot" ar ortozista - protēzista ieteikto palīgierīci.* Līdz ar to ir noderīgi vismaz dažos studijuursos praktiskās nodarbības (īpaši, ja studējošo skaits grupā ir neliels) īstenot kopā, lai topošie speciālisti labāk iepazītu cits cita apgūstamās studiju profesijas specifiku.

3. posms. Viena no pedagogiskām stratēģijām DD attīstīšanai, kas tika aprobēta pētījuma laikā, bija t.s. empātiju kartes veidošana (Hodgkinson-Williams & Deacon, 2013).

Empātiju karte pašvērtējuma veidā ļauj personai apkopot savas domas / sajūtas / vērtējumu par jebkuru norisi savstarpējā komunikācijā. Vienlaikus karte ļauj novērtēt to, cik empātisks tās aizpildītājs ir bijis attiecībā pret citu personu (savu sadarbības partneri, klientu, pacientu, grupas biedru) konkrētā situācijā. Karti veido četras sadaļas – kvadrāti, kuros tiek atspoguļotas – aprakstītas indivīda (partnera, klienta, pacienta) sajūtas saistībā ar to, ko viņš **teica, darīja, juta** un **domāja**. Ir salīdzinoši vienkārši aprakstīt to, ko klients ir teicis vai darījis. Lielākas grūtības parasti sagādā noteikt (aprakstīt) to, ko klients / partneris ir domājis vai jutis. Karti veidojot, ir jābalstās uz rūpīgiem novērojumiem un analīzi,

atsaucot atmiņā konkrētus faktus – atbildes uz jautājumiem, vissīkākās sarunas detaļas, verbālās un neverbālās komunikācijas izpausmes u. tml.



2.att. **Empātiju kartes piemērs** (pēc “Empathy Map – Why and How to Use It”).

Figure 2. An Example of an Empathy Card (from “Empathy Map – Why and How to Use It”).

Tieši tādēļ literatūrā nav strikti noteiktu metodisku ieteikumu, kādai tieši vizuāli būtu “jāizskatās” empātiju kartei. Kartes veidošana ir radošs process. Studentu veidotās var atšķirties (un atšķiras) gan pēc formas, gan izmēra. Pamatdoma – ar shematiska zīmējuma palīdzību jācenšas aprakstīt (iepazīt) klienta emocionālo stāvokli, sajūst viņa vēlmes un vajadzības, t.i., vērot partneri un dokumentēt viņa darbības (redzēto, teikto, darīto, sajūsto), lai pēc tam savstarpēji tās salīdzinātu. Praktiskās nodarbības laikā kāds no grupas dalībniekiem iejutās klienta (pacienta) lomā un pēc situācijas izspēles aprakstīja savas sajūtas, savukārt pārējie grupas dalībnieki divās atsevišķās kartēs raksturoja gan klienta (pacienta), gan savas sajūtas.

Kopumā, kaut arī empātiju kartes veidošana izrādījās pats sarežģītākais uzdevums, tā tomēr raisīja studentu interesi un diskusijas, tādējādi apliecinot, cik būtiski ir ne tikai klausīties sarunas biedru teiktajā, bet arī “sadzirdēt” dažkārt vārdos nepateikto.

Secinājumi Conclusions

DD pamatoti uzskata par tādu instrumentu inovāciju īstenošanai, kura pamatā radošums un zināšanas. Ir pētījumi, kas norāda, ka DD daudzējādā ziņā pat apsteidz zinātnisko domāšanu, jo zinātnieks kā “izgudrojuma radītājs” (*invention maker*) pēta, rezultātus un secinājumus parasti iegūst sintēzes ceļā, savukārt cilvēks, kurš pārzina (“operē ar”) DD kā mācīšanās stratēģiju, ir “atklājumu meklētājs” (*discovery finder*), kurš secinājumus izdara analīzes ceļā (Owen, 2007). Šo literatūras atziņu apliecināja arī mūsu pētījums. Kā studiju

kursa noslēgumā atzīmēja studenti: (..) *DD kā metode sevī ietver attieksmes maiņu pret tradicionālām lietām, jo apvieno “ārpus rāmja”, radošo un analītisko domāšanu (..); (..) palīdz izvirzīt idejas, apskatīt lietas un notikumus kopsakarā (..); ļauj izstrādāt un salīdzināt vairākus risinājumus, bet galvenais – vadīt savu domāšanu noteiktā secībā (..), lai rastu problēmas risinājumu ar iespējami labāku rezultātu.*

Noslēgumā daži būtiskākie secinājumi:

- Studentu vērtējumā konstruktīvākais (saprotamākais) izrādījās DD 5 posmu modelis: “Izrādi empātiju! (*Emphatize*) – Definē problēmu! (*Define*) – Izvirzi idejas! (*Ideate*) – Veido prototipus! (*Prototipe*) – Pārbaudi! Testē risinājumus! (*Test*)”.
- 1. kursa studenti par prioritāriem izvirzīja tādas DD principus kā atbildība un radošums, savukārt 3. un 4.kursu studenti savu ideju īstenošanā atzinīgāk vērtēja empātiju un starpdisciplināru pieeju.
- Izvēlētās DD metodes (empātiju kartes zīmēšana, prototipu veidošana, iespējamo risinājumu dizainēšana un prezentēšana), parādīja, ka, ļaujot izvērtēt, salīdzināt savu (kā arī grupas biedru rīcību un izvirzītos priekšlikumus), attīstās studenta domāšanas, analītiskās un pašanalīzes prasmes. Tomēr metožu aprobācijai vēl ir nepieciešami papildus vērojumi un laiks.
- Atšķirības pirmo un vecāko kursu studentu atbildēs kursa noslēgumā, vēlreiz apstiprināja studentu pausto viedokli, ka ir sarežģīti arī pedagoģijas kursā apgūt vienas un tās pašas metodes, jo topošā speciālista profesionālā bagāža (pieredze) ir atšķirīga.

Līdztekus minētajam jāatzīmē, ka DD kā mācību stratēģijai Latvijā ir salīdzinoši nesena vēsture. Situāciju Latvijā raksturo tas, ka joprojām trūkst plašākas saskarsmes dažādu jomu pētnieku vidū. Tas nosaka nepieciešamību publicēt un popularizēt pētījumus, kuros ar DD saistītu tēmu loks skartu visdažādākās zinātņu nozares (pedagoģiju, medicīnu, dabaszinātnes, sociālās zinātnes, veselības aprūpi, sabiedrības veselību u.c.). Tas savukārt veicinātu pieredzes un informācijas apmaiņu augstskolu, studentu un docētāju starpā un paplašinātu viņu kā dizaina domātāju profesionālo kompetenci pedagoģijas kontekstā.

Summary

Design thinking is rightly considered as a strategic tool for innovation, based on creativity and knowledge. Studies show that design thinking surpasses scientific thinking in various ways because scientist as a “invention maker” does a research and the results and conclusions are usually obtained through synthesis, while a person who knows (“operates with”) design thinking as a learning strategy is a “discovery finder”, who makes conclusions through analysis. These literature reviews were also confirmed by our study. As students pointed out at the end

of the study course: (..) *Design thinking as a method involves the transformation of attitudes of traditional things, combining elements of "outside the box" thinking, creative thinking and analytical thinking (..); (..) Design thinking helps to put forward ideas, look at things and events in conjunction (..); (..) Design thinking allows to create and compare multiple solutions, but most importantly - to organize self-thinking in a specific order (..).*

Some of the most significant conclusions:

- In students opinion, the most constructive (understandable) was “5 stages design thinking model: 1. Empathize; 2. Define the problem; 3. Ideate; 4. Prototype; 5. Test”.
- Students or year one prioritized design thinking’s principles such as responsibility and creativity, while students of years three and four appreciated empathy and interdisciplinary approach in the process of implementation of their ideas.
- Selected methods (empathy map drawing, prototyping, designing and presentation of possible solutions) showed that they are usable for developing students’ ability to evaluate, compare and develop analytical and self-analysis skills (as well to evaluate the group members’ actions and proposals). However, approbation of methods needs additional observations and time.
- Differences in the responses of first and latest course students reaffirmed that it is difficult to learn the same pedagogical methods because of their divergent professional experience and preparedness.

In addition to this, it should be noted that design thinking as a learning strategy in Latvia has a relatively recent history. The situation in Latvia is characterized by the fact that there is still a lack of broader contact among researchers in different fields. This fact determinates to actualize and publish researches, where design thinking also affects natural sciences, mathematics, social sciences and other sciences whose theoretical basis have been developed over a longer period of time. This, in turn, would facilitate the exchange of experience and information between universities, students and lecturers and expand their professional competence as design thinkers in the context of pedagogy.

Literatūra References

- Brown, T. (2008). *Definitions of design thinking*. Retrieved from <https://designthinking.ideo.com/?p=49&cpage=1>
- Brown, T., & Martin, R. (2015). *Design for action*. *Harvard Business Review*, September 93 (9), 58–64.
- Cross, N. (2001). *Designedly Ways of Knowing: Design Discipline versus Design Science*. *Design Issues*, Vol. 17, No. 3, 49-55.
- Campbell, E. (2015). *The magazine of Creative Education Trust schools*. March, Nr.2. *Creativity, Inspiration. Think Outside The Box*. Retrieved from <http://artanddesigninspiration.com/think-outside-the-box-2/>
- Design thinking*. Retrieved from <http://www.basicknowledge101.com/pdf/km/Design%20thinking.pdf>
- Design Thinking for Educators*. Retrieved from http://www.saccds.org/sites/main/files/file-attachments/design_thinking_toolkit.pdf
- Empathy Map – Why and How to Use It*. Retrieved from <https://www.interaction-design.org/literature/article/empathy-map-why-and-how-to-use-it>

- Goodson, P. (2010). *Theory in Health Promotion Research and Practice: Thinking Outside the Box*. Jones & Bartlett Publishers.
- Hodgkinson-Williams, C., & Deacon, A. (2013). Pedagogic Strategies to Support Learning Design Thinking in a Masters Course. *Educational Research for Social Change (ERSC) Vol. 2 N.1, April*, 82-96.
- Irbīte, A. (2014). The importance of the paradigm shift in the development of design industry and design education. *Proceeding of the International Scientific Conference May 23th – 24th. Volume II*, 411-422.
- Karlsone, I. (2015). Pedagogical principles to develop design students' spatial abilities in the study process. *Proceedings of INTCESSIS-2nd International conference on Education and Social Sciences*, 717-722.
- Kolko, J. (2015). *Design thinking comes of age*. *Harvard Business Review*, September 93 (9), 66–71.
- Lawson, B. (1990). *How Designers Think*. Great Britain The University Press, Cambridge.
- Owen, C. (2007). Design Thinking: Notes on Its Nature and Use. *Design Research Quarterly Vol. 2, N.1, January*, 16-27.
- Razzouk, R., & Shute, V. (2012). What Is Design Thinking and Why Is It Important? *Review of Educational Research*, 82 (3), 330–348.
- Research on Design Thinking*. Retrieved from https://dschool-old.stanford.edu/groups/k12/wiki/821fc/Research_on_Design_Thinking.html
- Rowe, P. G. (1987). *Design thinking*. USA, the Massachusetts Institute of Technology. *Stages in the Design Thinking Process*. Retrieved from <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>
- Solovjova, J. (2017). *Dizaina domāšanas fenomēns*. Retrieved from <https://www.rdmv.lv/lv/news/aktualitates-lv/iesakam/dizaina-domasanas-fenomens>
- Solovjova, J. (2018). *Dizaina nozīme mūsdienās*. Retrieved from <https://www.rdmv.lv/lv/news/aktualitates-lv/iesakam/dizaina-nozime-musdienas>
- Svešvārdu vārdnīca* (1999). Rīga: Jumava.
- Thinking Outside the Box: A Misguided Idea*. Retrieved from http://www.innovationinpractice.com/innovation_in_practice/2014/02/thinking-outside-the-box-a-misguided-idea.html

ФОРМИРОВАНИЕ КОМПЛЕКСА ЗАДАЧ КАК ПУТЬ К ЭФФЕКТИВНОСТИ ДИЗАЙН-ОБРАЗОВАНИЯ

Establishing the Set of Tasks as a Way to Improve Effectiveness of Art and Design Education

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Abstract. *The paper presents a study in the field of art and design education and focuses on looking for ways to improve the effectiveness of education through establishing a set of consistent professional tasks and identifying the interdisciplinary relationship.*

The paper outlines patterns of the design education process. The objective of the study is to analyse the interlinkages between abstract tasks, life drawings and graphics design exercises that demonstrate individual creativity of students.

Keywords: *educational patterns; set of tasks; accumulation of knowledge; development; creative commitment.*

Введение

Introduction

Основанием для написания данной статьи послужило наблюдение за творческими результатами и ростом студентов, которые можно увидеть и проанализировать на кафедральных итоговых просмотрах. На этих просмотрах каждый студент представляет комплекс работ по всем творческим дисциплинам семестра. Статья является продолжением работы над исследованиями в области дизайн-образования (Момотова, 2013) и рассматривает выстроенные взаимосвязи в заданиях профессиональных дисциплин, способствующие выявлению закономерностей обучения и развитию творческих способностей (Бердышев et al., 2013). Цели и задачи учебных дисциплин объединяются в единую систему, направленную на достижение нового качества образовательного процесса и получение синергетического эффекта.

Под закономерностями обучения в современной педагогике понимаются «объективные, существенные, устойчивые, повторяющиеся связи между составными частями, компонентами процесса обучения» (Хуторской, 2003).

Закономерности обучения в дизайне отражают регулярность повтора ранее изученного и обеспечивают прочность знаний, это теоретическая основа для понимания обучения. Очень важно при этом выстраивать связи всех дисциплин и показывать студентам комплексность творческого метода. Это должно привести студента к пониманию закономерностей и выработке алгоритма своей творческой дизайнерской деятельности. Таким образом, рисунок, живопись, проектирование и другие дисциплины объединяются единой образовательной целью.

Студент осуществляет накопление, фиксацию, упорядочение и передачу ценного опыта профессиональной деятельности (Жуков et al., 2013).

Цель исследования – проанализировать разработанную систему взаимосвязей между абстрактными упражнениями, натурными постановками и реальными заданиями по дизайн - проектированию, способствующую развитию творческой личности и продуктивной художественно-творческой деятельности.

Изучение структурного формообразования в дизайне становится стержнем, на который наращиваются все основные учебно-творческие задачи всех дисциплин образовательной программы.

Студенту-дизайнеру необходимо понимать природу закономерностей формообразования, выявлять особенности творческих приемов в разнообразных заданиях, овладевать композиционно-образным чувством гармонии, пластическим и стилевым единством, системой целостности, художественной выразительности и, как результат, осмысленно использовать их в дальнейшей работе в разных направлениях, овладевая художественно-проектным мастерством.

Однако, на практике студенты не всегда готовы сразу увидеть закономерности обучения, им бывает трудно проследить логическое развитие тем дисциплин, где каждое новое задание опирается на предыдущее, увидеть повторяемость приемов, последовательную смену шагов развития знаний и умений. Неумение использовать предшествующие знания для поиска новых идей вносит в работу непонимание и противоречия, студент не фиксирует закономерности обучения, учебный процесс становится менее эффективным.

Пожалуй, главным в обучении является формирование самим студентом механизмов осознания и выявления алгоритма творческой деятельности. Накопление междисциплинарных взаимосвязей должно происходить систематически и планомерно. Здесь мы говорим о процессе обучения, который организуется студентом осознанно как на занятиях в аудитории, так и во время самостоятельной работы. Так обучающийся способен обеспечивать и корректировать свой рост.

Разработка и применение экспериментальных технологий успешно воздействует на уровень художественно-творческой деятельности студентов.

Методы исследования – теоретические и практические. Теоретические методы – анализ предшествующего опыта, закономерностей обучения и творческой деятельности, обобщение; практические методы - наблюдение и эксперимент. Система взаимосвязей разработана на базе Псковского государственного университета преподавателями кафедры дизайна и технологии обработки материалов.

Пути развития дизайнерского образования *Approaches to design education development*

Дизайн – вид деятельности, объединяющий художественное, проектное, инженерное и изобретательское начала. Соответственно, дизайн-образование должно способствовать комплексному развитию этих начал в одной личности.

В 1919 и 1920 годах, когда складывались новые образовательные системы в Германии (Баухауз) и России (ВХУТЕМАС), был намечен путь комплексного развития художника дизайнера, который позднее определил современную отечественную школу дизайн-образования. Внутри этой образовательной системы каждая школа создает свою индивидуальную концепцию подготовки дизайнеров и формирует комплекс целей, задач и методов обучения.

Хуторской А. В. (Хуторской, 2003) выявляет закономерности образовательного процесса, рассматривая принципы взаимосвязи обучения, воспитания и развития. Развитие творческой деятельности студента протекает на фоне обязательного учебного процесса, который необходимо превратить в структурированную систему, сочетающую учебно-познавательное и развивающее начала. Это позволит изменить мотивацию к труду, развить эмоционально-образную сферу, преобразовать личностные качества.

По своей природе человек – творец. Степень творческой самореализации студента зависит от условий обучения, содержания образования и применяемых технологий. Во многих профессиональных областях присутствуют элементы творчества. В дизайнерской деятельности творчество является ее основой и представляет собой многоуровневый осознанный процесс, всегда направленный на достижение определенных целей. Для успешного обучения необходимо применять комплекс методов, реализующийся через совокупность приемов к конечному результату. К таким методам можно отнести: обучение в сотрудничестве, обучение по

алгоритму, мозговой штурм, дискуссия, портфолио, кластер. Эти методы относятся к новым образовательным технологиям и способствуют оптимизации учебного процесса.

Разработка и внедрение в учебный процесс технологии обучения или ее элементов – это творческий процесс, состоящий в анализе целей, возможностей и выборе таких форм и методов обучения, которые побуждают студентов к активной мыслительной и практической деятельности в ходе овладения учебным материалом.

Метод обучения в сотрудничестве – педагогическая технология, объединяющая преподавателя, студента и художественно-творческую деятельность.

Метод обучения в сотрудничестве – это совместная деятельность преподавателей и студентов, обеспечивающая приобретение теоретических знаний через выполнение практических заданий. Преподавателю необходимо:

1. Помочь студентам приобрести не только необходимые навыки художественно-проектной деятельности, но и овладеть самим методом творческого мышления для организации активной и эффективной образовательной деятельности.
2. Намечить пути использования метода для получения опыта самостоятельности студентов.
3. Ликвидировать тупиковые ситуации, находясь в любой точке проблемы и расширять творческий поиск.

В ходе выполнения практических заданий вырабатывается алгоритм совместной творческой деятельности, где личность студента является главной фигурой в образовательном процессе. Преподаватель выступает как учитель-консультант, вырабатывающий систему мер по оптимизации самостоятельной работы студентов. Самостоятельная работа рассматривается как пробуждение творческих способностей.

Использование этого метода в работе дает возможность решать проблему на более высоком уровне: преподаватель ставит проблему – студент самостоятельно ее решает.

Моделируя проектную ситуацию, студенту необходимо видеть конечный результат работы, для чего ему нужен опыт активной творческой практики и понимание связей разнообразных явлений и процессов в дизайне. Разобраться в этом помогает широкий кругозор и формирующееся дизайнерское мышление.

Таблица 1. Образовательные задачи, деятельность, средства и цели сторон образовательного процесса
Table 1 Goals, tasks, activities and tools of educational process participants

Преподаватель	Студент Образовательные задачи, деятельность, средства, цели
Ставит проблему; предлагает варианты решения; раскрывает требования к проекту, технологическое выполнение и критерии оценивания; подсказывает источники информации.	Анализирует проблемы, осуществляет исследование материала, выявляет интеллектуальные и технические возможности самого себя.
Наблюдает, консультирует, оказывает помощь.	Анализирует, насколько возможности совпадают с целями, сильные стороны старательно развивает или направляет работу на преодоление слабых сторон.
Наблюдает, консультирует, принимает участие в принятии решения.	Анализирует будущую работу, разрабатывает варианты обдумывания.
Наблюдает, консультирует, оказывает помощь.	Осуществляет разработку эскизов, определяет достоинства и недостатки своей работы.
Наблюдает, консультирует, оказывает помощь.	Выбирает наиболее подходящий вариант
Наблюдает, консультирует, оказывает помощь.	Осуществляет контроль за качеством работы, вносит изменения в проект, корректирует последовательность работы.
Слушает, участвует в оценке работы.	Анализирует достоинства и недостатки работы (позитивный и негативный опыт), осуществляет поиск перспектив и устраняет недостатки.

Образность – одна из составляющих профессионального мышления дизайнера, который постоянно работает с новой формой и ищет в ней образное начало. Развитое воображение помогает обеспечить скорость формирования проектных идей, правильно находить нестандартные решения поставленных задач.

Системность как составляющая дизайнерского мышления помогает дизайнеру овладеть методами проектирования, увидеть и проанализировать проектируемый объект с разных сторон (конструктивной, эстетической, технологической, эргономической и др.) и выработать алгоритм работы от идеи до конечного результата.

Инновационность – способность дизайнера привносить в жизнь новые смыслы, создавать новую форму и стиль жизни.

Теоретики дизайн-образования отмечают, что основное условие – чтобы все эти качества (образность, системность, инновационность) работали в совокупности, поскольку по отдельности они для дизайна не специфичны. Дизайн – проектная практика, требующая от профессионального мышления органичного совмещения образного и системного начал и вносящая в реальность новые социокультурные смыслы (Розенсон, 2010).



Рисунок 1. Составляющие профессионального мышления дизайнера
Figure 1. Elements of professional designers thinking

Отсюда вытекают задачи образовательного процесса – развить все эти качества в совокупности. Выполняя абстрактные упражнения по различным предметам, студенты постигают особенности профессионального мышления и развивают образность, что позволяет им проектировать конкретные объекты во всей их органичной целостности.

Также исследователи творческих процессов отмечают, что любое улучшение навыков восприятия оказывает положительное воздействие на творческие способности (Наумова, 2010). Основы рисунка, живописи,

композиции, цветоведения и шрифтовой графики развивают видение, дар визуализации и наглядно-образного представления. Студенты расширяют область применения колористики, выразительных графических и композиционных средств, находят смысловые, пространственные и масштабные взаимоотношения в сложном структурном построении формы. Многократно повторяющиеся приемы и действия, сознательное углубление в новую область знаний и практических умений последовательно преобразуются в устойчивый навык и мотивацию к творческой деятельности.

Осознание сути творческой деятельности позволяет правильно определять цели, придавать новые смыслы работе, формировать законы, принципы и правила в конструировании своих знаний, создавать конечный продукт целостным и завершенным, а также овладевать способами эффективной деятельности в процессе выполнения творческих заданий, видоизменяя их и совершенствуя отдельные стороны. В результате у студентов будет развиваться критическое мышление, основанное на предположении и способности выдвинуть новые идеи, понимание закономерностей обучения.

Необходимо обозначить аспект личностных качеств студента, которые оказывают большое влияние на успешность образовательного процесса: интеллект, позитивное отношение к жизни, постоянная мотивация к труду, самосовершенствование и самоконтроль.

Процесс обучения эффективен только при наличии обратной связи, активного диалога (студент-преподаватель), что предполагает постоянное развитие самого педагога. Мировые школы дизайна, вошедшие в историю дизайн-образования, обладали авторской системой образовательной деятельности, которую формировали преподаватели, каждый из которых был педагог-мастер и педагог-творец.

Факторы самодвижения и роста педагога: постоянная творческая практика, анализ результатов собственной деятельности, пересмотр достоинств и недостатков в работе, осознание своих возможностей, реакция на появление новых качеств и условий культурной среды и технического прогресса, подстройка под ученика (все разные). Способность анализировать проблемы и находить неординарные пути их решения характерна для педагога, обладающего нешаблонным, творческим мышлением. Задача преподавателя найти пути к развитию такого мышления у своих учеников: использовать в работе образовательные технологии, помогающие устанавливать взаимосвязи в содержании и заданиях разных дисциплин, выявить повторяемость приемов и подходов, способствующих формированию составляющих профессионального дизайнерского мышления.

Комплекс учебных задач в практике художественно-творческой деятельности студента

Set of practical tasks for developing creativity of students

Разрабатывая основную профессиональную образовательную программу по дизайну, формируя учебные планы и программы дисциплин, коллектив преподавателей Псковского государственного университета опирался на постулат: дизайнерская деятельность в широком понимании есть не определенные приемы изготовления чего-либо, а скорее, средство развития всех способностей человека. При проектировании объектов дизайнер сталкивается с необходимостью объединения знаний из различных областей. Учебно-творческую деятельность студента можно рассматривать как дидактическое средство, способствующее активизации познавательной функции, развития нешаблонного мышления и одновременно формирования определенных личностных качеств. Студент должен понять, что он – творец и его возможности безграничны, что смысл образования – реализация себя в профессии.

Весь учебный процесс направлен на формирование способности творить и развитие мышления логически стройного и системно целостного, но в то же время гибкого, способного воспринимать новизну и совершенствовать свою работу. Согласно исследованиям, проведенным Г. Адлером и Э. Боно, постоянная мотивация к саморазвитию приводит к высшей степени творчества – творческой устремленности (Наумова, 2010).

Структуру образовательного процесса можно представить в виде лестницы, где на первой ступени находятся «Академический рисунок», «Академическая живопись», «Цветоведение», «Макетирование», «Инженерная графика» и «Пропедевтика». Задачи этого этапа – создание базы знаний и умений, которые помогут будущему дизайнеру стать грамотным, мыслящим, практически создающим художественно-композиционные ценности профессионалом. На этом этапе закладываются способности видеть, понимать творческую задачу, осваивать последовательную работу над эскизом (от первоначального широкого поиска к усовершенствованию идеи и ее пластическому выражению) как путь к конечному результату. Требование многовариантности решений в эскизах способствует увеличению интенсивности поиска и содействует эффективному развитию творческого потенциала и индивидуальных качеств у студентов. Эскиз не только отражает этапы работы и видение конечного результата, но и помогает освоить приемы проектной графики и двигает мысль вперед.

На начальном этапе обобщением как средством создания образности и композиционной целостности владеют далеко не все студенты. Введение в

учебный процесс абстрактных и аналитических упражнений, выявляющих единые композиционные законы в станковом искусстве, декоративном творчестве и дизайне, помогает студентам понять принцип широких обобщений и формообразования в рисунке, живописи и проектировании. В начальных упражнениях по разным дисциплинам, выполняемых студентами кафедры, можно проследить повторяемость композиционных приемов при организации элементов на плоскости.

В курс пропедевтики включено упражнение на перевод реалистичного изображения в абстрактное, которое позволяет снять изобразительность с объектов при помощи формальной композиции, сохраняя при этом структуру художественного произведения (Чернышев, 1999).



Рисунок 2. Пример упражнения
Figure 2. Example exercise

Понимание композиционных закономерностей в формальной композиции облегчает цветовую организацию изобразительной плоскости в живописи, ритмическую и тональную структуру в рисунке.

В то же время современная проектная деятельность требует достаточно сложных пространственных ориентировок, складывающихся из конкретных признаков формы, объемности предметов, а также их структурных единиц: частей, деталей (Курасов et al., 2015). Помочь студенту освоить законы изображения и построения формы – основная задача рисунка и живописи. Грамотное выполнение построений изображений с соблюдением законов композиции, правил перспективы, пропорций, гармонии, светотени – тот арсенал современных художественно-графических средств, который необходим дизайнеру в решении проектных задач. Таким образом, осуществляется взаимосвязь дисциплин и взаимовлияние приемов и подходов к работе.

Практическое изучение и понимание структурного построения изображения необходимо для эффективного образного взаимодействия. Организация формы происходит средствами композиции. Композиционными средствами выражения принято считать ритм, пропорции, симметрию, контраст, объем, пространство, масштаб. Чувство меры – ключевая категория, она характеризует способность студента гармонично использовать изобразительные и композиционные средства и формировать структуру произведения.

Работа над курсом упражнений и заданий постепенно усложняется и направляется на упорядочение образовательного процесса. Вырабатывается своеобразный алгоритм реализации творческой деятельности, адекватный процессу мышления дизайнера. Процесс мышления дизайнера заключается в повторяемости приемов и путей, отборе и сравнении, приобретении теоретических знаний при выполнении практической работы. Выработанный алгоритм становится правилом работы дизайнера.

Каждый студент в процессе обучения имеет возможность получить, открыть или сконструировать собственное знание об изучаемом объекте. При изучении одних и тех же композиционных средств на «Пропедевтике», «Макетировании» и «Цветоведении» и в работе над натурными постановками на «Рисунке» и «Живописи» студенты проявляют и развивают свои личностные познавательные способности и разрабатывают субъективные образы, как правило, не совпадающие друг с другом. Разные решения одного и того же задания свидетельствуют не об их ошибочности, а о различных способах мысли и выборе определенных визуально-графических средств их выражения.

Субъективность познания означает, что каждый студент проникает в глубины своего идеального мира, расширяет соответствующую индивидуальную сферу своего личностного потенциала (Хуторской, 2001).

Самым главным результатом этого этапа становится понимание единства композиционных законов, закономерностей творчества, выявление студентом взаимовлияния различных сфер творчества и формирование устойчивого интереса к учебе.

Задачи следующей ступени – движение в направлении конечного результата. Студент овладевает широким спектром знаний и умений и может представить конечный результат (проект, творческую работу) в яркой художественной форме. Все дисциплины второго периода объединены этой общей целью. Учебные задачи усложняются в сторону переосмысления работы с цветом и формой, расширяется тематика заданий от проектирования единичных объектов до комплексов. От студента может потребоваться умение сознательно преобразовывать, обогащать и выстраивать свои знания в новую систему в зависимости от поставленной творческой задачи. В каждой дисциплине важно проследить закономерности и преемственность обучения и вывести учебно-творческие задачи на новый уровень понимания.

В ходе практической деятельности студенты расширяют и углубляют свои теоретические представления, «наращивают теорию». В этом случае выполняемая студентами работа становится осознанной, и теоретические знания вытекают из практической деятельности на основе ее рефлексивного осмысления ими (Хуторской, 2001).

На этом этапе формируется мотивация к постоянному труду (потребность учиться) и стремление совершенствовать свою деятельность.

На третьей ступени завершается формирование профессиональной эрудиции и профессионального мастерства. Приобретенные навыки и широта взглядов помогают увидеть процесс проектирования как системную деятельность, результаты которой направлены на привнесение в жизнь гармонии и новых смыслов. Задания по «Проектированию» приобретают реальный характер, проверяется готовность студента к практической дизайнерской деятельности. Студент должен видеть перед собой конечный результат, определять состав требований к проекту, обосновывать проектную идею, исчерпывающе аргументировать набор изобразительно-художественных и композиционно-выразительных средств для воплощения замысла в целостной образной форме.

Сложные проектные задачи на этом этапе требуют от обучающегося системных знаний, поиска инновационных решений и совершенствования личностных качеств. Главным показателем успешности этого периода являются личностные образовательные приращения студента.

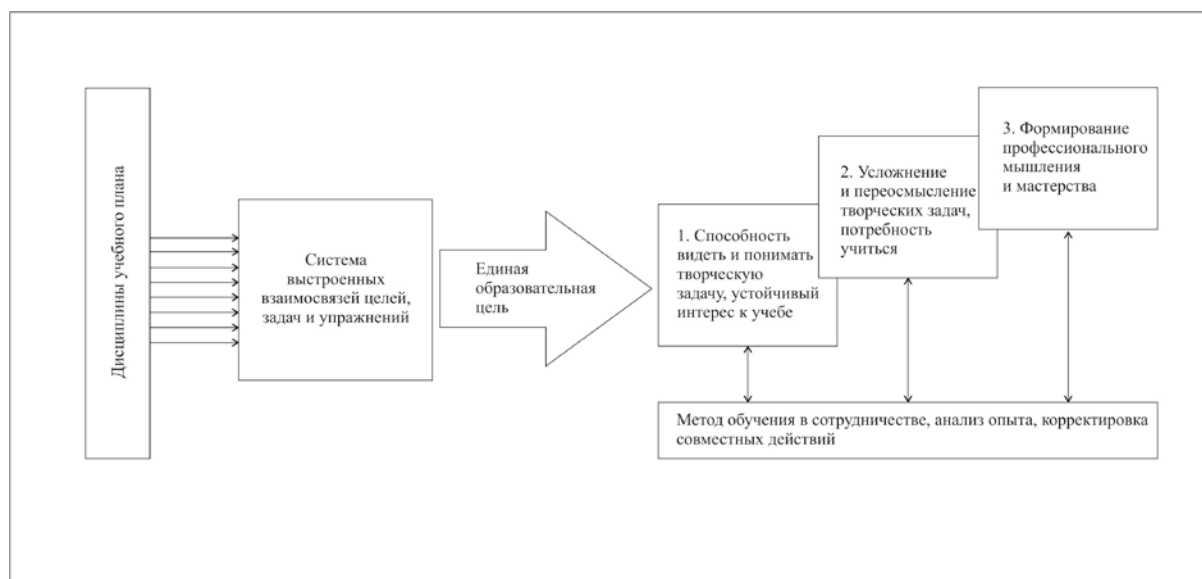


Рисунок 3. Схема образовательного процесса
Figure 3. Scheme of educational process

Выводы *Conclusions*

Формирование трех составляющих профессионального мышления дизайнера (образности, системности, инновационности), понимание закономерностей обучения и природы формообразования в дизайне - необходимое условие для эффективного развития творческой личности. Установление студентом лично-значимых связей с разными образовательными областями позволит расширить образовательный процесс, способствовать развитию когнитивной функции и придти к высшим формам творчества. В этом случае студент видит устойчиво повторяющиеся связи между заданиями различных дисциплин, понимает целостность содержания образования, выстраивает личностную систему знаний и определяет новые этапы обучения в динамике их развития.

Поиск закономерностей в характере приемов и подходов к различным творческим заданиям позволяют студенту осуществлять накопление необходимой информации, фиксировать ее и осмысленно переносить накопленный опыт в профессиональную деятельность.

Личностные образовательные приращения студента оказывают более эффективное влияние на качество образования, чем контроль его образовательных результатов.

В результате выстроенная система взаимосвязей позволяет осознанно управлять обучением и повышать качество образования.

Summary

To ensure an effective development of the creative person, it is essential to form in students three main elements of the professional designer's thinking - imagery, consistency and innovativeness, and to make them understand educational patterns and the nature of creative processes. Once students define links between various disciplines that are personally significant for them, they will be able to enhance their educational process and develop their cognitive functions to arrive at a constant creative development. In this case, students see repeated and sustainable linkages between tasks given in different disciplines and understand the integrity of the curriculum, and build up their personal system of knowledge, defining new educational stages for further individual development.

Looking for patterns in techniques and approaches to different creative tasks allows students to accumulate and capture necessary information, and to apply meaningfully their experience in practice.

Individual educational development of the student is much more important for an effective educational process than monitoring and checking learning results.

As a result, the built-up system of interdisciplinary linkages enables students to manage the process of education meaningfully and improve the quality of knowledge.

Литература References

- Бердышев, В. В., Захаров, Н. А., & Кучеровская, В. В. (2013). Декоративно-композиционные задания по живописи как средство развития образного мышления студентов направления «Дизайн», *Proceedings of the International Scientific Conference «Society, Integration, Education»*, 432-439.
- Жуков, В. Л., Жуков, В. В., Каллас, Ю. О., Осипова, Г. Ю., & Хмызникова, В. А. (2013). Когнитивное моделирование в технической эстетике и дизайне. *Журнал Дизайн. Материалы. Технология*, № 2 (27), 21-31.
- Курасов, С. В., Лаврентьев, А. Н., Заева-Бурдонская, Е. А., & Сазиков, А. В. (2015). *Строгановка: 190 лет русского дизайна*. Москва: Русский мир.
- Момотова, Л. А. (2013). Методики художественно-образного моделирования, расширяющие творческий поиск. *Proceedings of the International Scientific Conference «Society, Integration, Education»*, 479-486
- Наумова, В. Г. (2010). Формирование творческой личности в современном обществе. *Материалы 1-й Международной научно-методической конференции «Традиции и инновации в дизайне»*, 83-93.
- Розенсон, И. А. (2010). *Основы теории дизайна*. Санкт Петербург: ООО Издательство «Питер».
- Хуторской, А. В. (2003). *Дидактическая эвристика. Теория и технология креативного обучения*. Москва: МГУ.
- Хуторской, А. В. (2001). *Современная дидактика. Учебник для вузов*. Санкт Петербург.
- Чернышев, О. В. (1999). *Формальная композиция. Творческий практикум по основам дизайна*. Минск: Харвест.

AN INVESTIGATION ON THE VIRTUAL PROTOTYPING VALIDITY – SIMULATION OF GARMENT DRAPE

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Abstract. *Achievement of desired garment form is essential in the development of clothing design, which depends on properties of its raw material - mainly fabric. Virtual prototyping can serve as a tool for assessing the form and fit of garments before real production and deciding whether to make changes in ease values, pattern cut or fabric parameters. The aim of the study is investigation of reliability of virtual prototyping results using Modaris 3D (Lectra) due to influences of changeable fabric parameters on garment drape effects, as well as verifiability with three-dimensional (3D) scanning (Vitus Smart XXL®) of real products. For the research half-circle cut skirt designed in appropriate size for standard figure dummy. Skirt virtually simulated on mannequin which previously scanned and imported into the system. Properties of three different types of fabrics examined in a material testing laboratory according to requirements of relevant standards. Skirt virtually tried-on defining fabric properties by gained testing results and afterwards made from real fabrics, put on the dummy and scanned. Drape effects of the various virtual prototypes and real product scans compared, both in the CAD system and the scanning system (Anthroscan) using cross-sections and their measurements (depths and diameters of folds, circumferences). Fabric parameters has an influence on the reliability of virtual prototyping results in terms of accuracy of parameters determined and put into the system. Cross-sections with measurements reveal differences between virtually sewn and real skirt drape configurations.*

Keywords: *drape, fabric properties, three-dimensional (3D) scanning, transversal cross sections, virtual try-on.*

Introduction

Computer aided design software not only provide the possibilities to speed up the process of putting new model into production and improve the quality of products, but also to reduce the costs of development, material costs and labour intensity (Lányi, 2012). 3D technologies can also improve the communication between designers, patternmakers, sewing technologists, sales management and retailers. If 3D prototyping succeeds, it can help avoid producing several number of samples, thus reducing both the consumption of materials and the

time taken to improve models and sew them. The development of the sample, also called prototype, model or “guide-sample”, which evidently describes the object of order and which materialization can be used for tangible notion how the products in serial production should look like (TTV, 1989), is a critical stage in the success of the product throughout the production chain.

Currently number of clothing CAD software packages are providing 3D prototyping or simulation modules, such as Modaris 3D (Lectra), Runway 3D (Optitex), Vidya (Human Solutions), V-stitcher (Browzwear), AccuMark 3D (Gerber Technology), Assol 3D parametric (Assol), clo3D, Marvelousdesigner etc. (Lányi, 2012; Fairhurst, 2008; D’Apuzzo, 2008) The prototyping can be performed on built-in standard figure mannequins, on personalized virtual parametric 3D dummies, and many of these systems have developed software enabling visualisation of garments on 3D avatars (Nayak & Padhye, 2015).

34 years after the inception of 3D technology for use in the fashion retail environment, the adoption of this technology has been largely in areas such as virtual try-on for online garment sales, including that of cloth definition and characterisation; making garment size selection faster and simpler; and towards the development of realistic anthropometric mannequins for quality control and garment production, even extended to personalised mannequins (Nayak & Padhye, 2015). By the use of 3D scanning human body or other objects surface point clouds or data sets with coordinates of surface points are obtainable for processing and export in required format for further input in virtual systems and use in prototyping process. Import of actual 3 body scan image data has become possible so that fit of a specific design can be virtually assessed on the actual fit body. 3D scanning has advantages of speed, accuracy and consistency of measurement data (Fairhurst, 2008).

Already at the beginning of the garment design process designers should consider all requirements for achieving the desired results and factors that can affect it. One of the targets is to achieve the desired silhouette of the garment. Various sources say - silhouette is - a graphic depiction (or characterization in words) of the shadow’s contour from the clothing form (TTV, 1989); characteristic set of clothing (parts) cut lines; the outline, apparent planar shape or contour set visible on the background (LLVV, 1972–1996). The chosen construction method, applied ease and decorative allowances and different modelling solutions are the key factors to achieve the desired silhouettes. Not less essential factor is the selection of appropriate fabric which varies by the fiber composition, geometric characteristics and mechanical properties. But characteristics like thickness, weight, elasticity and drapeability of fabric can be decisive when “falling” voluminous garments are designed. Drapeability is

defined as textile or garment ability to make folds (to drape) under influence of own weight (TTV, 1989).

Along with possibilities to change visual characteristics of fabric (colour, pattern and texture) 3D virtual prototyping systems provide the input of fabric material properties (geometric characteristics, mechanical properties) for predicting the draping effects of different fabrics (Lányi, 2012; Nayak & Padhye, 2017)

The issue is about reliability of these 3D prototyping technologies and the tools which can be used to check the validity of the gained results.

Review of studies. In other studies, different approaches used for identification of virtual prototyping reliability and validity, for example measurements and analysis of drape distances; analysis of correlation between drape coefficient of materials and the exterior shapes and visual images; comparison of actual and virtual hem lines etc. (Lee J., 2014)

For example, in a study, where simulations made on customised default 3D model and 20 real samples produced, is claimed that photographs for the front, side and back views are taken instead of use of 3D scanning because of noises and missing parts of scan. It could be related to the research year, because currently such problems can be avoided. Afterwards measurements extracted from images of the real samples and 3D simulations. The difference between 3D simulation and real samples shows that simulated results are often smaller than the real samples at the hip width Since images have different resolutions, the absolute pixel measurements are converted into ratio by formula. Should be mentioned, that the author is not mentioning the effects of lens distortion on the photograph proportions (Wu Y.Y., 2011).

The aim of the research is investigation of reliability of virtual prototyping results using Modaris 3D (Lectra) due to influences of changeable fabric parameters on garment drape effects, and verifiability with three-dimensional (3D) scanning (Vitus Smart XXL®) of real products.

The methodology of study process shown in Fig.1.

For the research purposes half-circle cut skirt designed and both real garments and virtual have been sewn using 3 different thickness 100 % cotton fabrics. Skirts virtually tried-on and real garments scanned after putting on the dummy for comparison and farther investigation of the virtual prototyping validity.

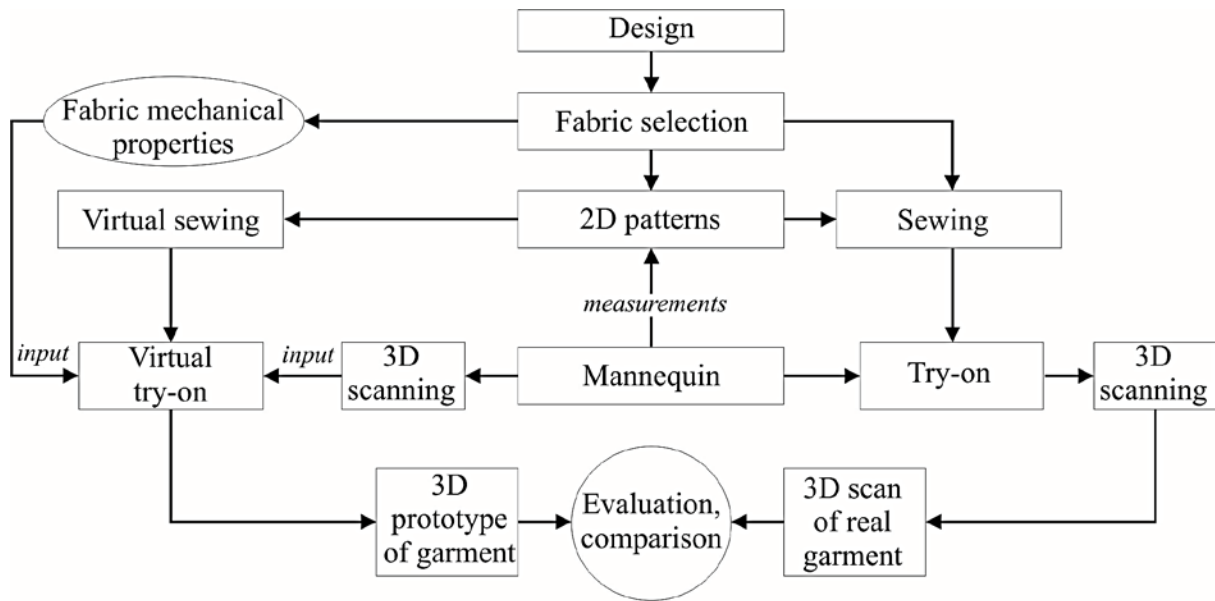


Figure 1. Methodology of study

Materials and Methods

Virtual prototyping system. In this research virtual prototyping performed by Modaris (system Lectra), including processes such as construction of patterns, work on set of cutting patterns, virtual sewing and virtual prototyping or try-on.

3D scanning. Scans of the mannequin and real made skirts were obtained using VITUS Smart XXL® (Human Solutions GmbH and VITRONIC GmbH) with Anthroscan software. One scanning lasts ~12 seconds, gaining the object reproductions with resolution 27 points/cm² and possibilities to get measurements with accuracy ± 1 mm.

Dummy for prototyping. Standard figure dummy was selected, scanned, measured and used for real skirt try-ons. The standard figure dummy is mannequin which size corresponds to certain standard figure (of human body), usually its torso dummy. It is used as reference measure tool for visual examination of garments anthropometric fit, in the process of model sample construction (prototype) or testing the fit of already produced clothing (TTV, 1989). It was selected for the reason of “fixed object” advantages, effects on soft tissues and posture changes as a result of breathing or just inability to repeat primary pose could cause changes in measurements and reproduction proportions if real human body was scanned dressed in 3 different skirts. In the case of the dummy proportions are fixed and in addition the base of the dummy’s stand is constantly placed in the same position on the scanning

platform (see first picture in Figure 2). After the scanning and measurement obtaining the reproduction of dummy was processed with surface reconstruction tools to remove noises and prepare for export to compatible format for the try-on system (see steps in Fig.2).

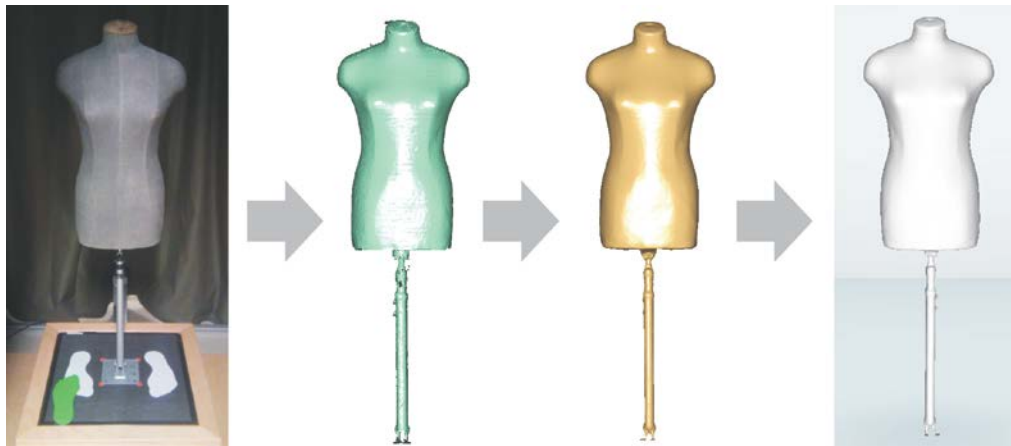


Figure 2. Preparation of the dummy for try-on system

Fabric parameters. Three different thickness 100 % cotton fabrics selected by the weight – light, medium and heavy. At this research according to parameters possible to indicate in the try-on system the material thickness and density was acquired. Samples kept under normal climatic conditions before the measurement process according to standard ISO 139:2005/A1:2011 „Textiles - Standard atmospheres for conditioning and testing - Amendment 1” (ISO 139:2005).

Thickness is set by compressing the fabric for 30±5 seconds between 2 plates with a pressure of 1kPa at least at 5 different areas of the fabric. It is described by average thickness in mm with a precision up to 0,001 mm. But the density is a mass of 1 m² of the fabric. For the laboratory samples it is ascertained according to standard LVS EN 12127:2001 “Textiles - Fabrics - Determination of mass per unit area using small samples” (LVS EN 12127:2001). Five 100cm² samples are cut out and weighed with precision up to 1 mg. The density is calculated by formula:

$$M_{m^2} = \frac{m \times 10000}{A}, \text{ g/m}^2,$$

where m – average mass of sample in grams; A – sample area, cm². Fabric parameters summarized in the Table 1.

Table 1 **Fabric parameters**

		Fabric		
		1.	2.	3.
Selection criteria	Weight	light	medium	heavy
	Composition	100 % cotton (CO)		
	Category	Woven		
Laboratory testing according LVS EN 12127:2001	Thickness [mm]	0,240	0,371	0,842
	Density [g/m ²]	67	183	319

Fabric properties which can be indicated in the virtual try-on system are composition by fiber type, geometric characteristics and mechanical properties. If it is relatively easy to determine composition and main geometric characteristics (density and thickness) than special systems and methods are needed to indicate detailed mechanic properties. In the system used in the study mechanic properties can be defined by testing results obtained by KES-F (Kawabata Evaluation System of fabric).

Since the beginning of scientific research into textiles, one aim has been to devise measurements that could be used to predict the behaviour of textile fabrics (Fairhurst, 2008). The Kawabata Evaluation System (KES-F) is used to make objective measurements of hand-touch properties. KES provides a capability, not only to predict human response, but also to provide an understanding of how the variables of fiber, yarn, fabric construction and finish contribute to the perception of softness. The KES instruments measure mechanical properties that correspond to the fundamental deformation of fabrics in hand manipulation. Five different tests can be performed using KES-F: Tensile and shearing, Bending, Compression, Surface friction and variation (Moiz, A. et.al.). Another similar fabric evaluation system that is considered more affordable and simple in use is FAST (Fast system (fabric assurance by simple testing)), which indicators can be used for some virtual try-on systems (Power E .J. et. al., 2011).

Both KES-F and FAST systems are not freely available – there is a need of a special laboratory with equipment or collaboration with laboratories to obtain cloth data, thereby their use, especially from a business perspective can be expensive. At the research the textile material types and properties in the virtual prototyping system were selected from Modaris Material Browser library – which are closest by the laboratory testing results. Within this research the aim is to evaluate the gained prototyping results in the case if the only available input characteristics of the textile materials are thickness and density.

Skirt design. At the next step of the study half-circle cut skirt designed for the experiments, it consists of two details (front and back patterns), the length is

60 cm and seam allowances are 1 cm wide. Parameters (Kapčė, 2016) are used for skirt construction and pattern set in system Lectra (see Fig.3).

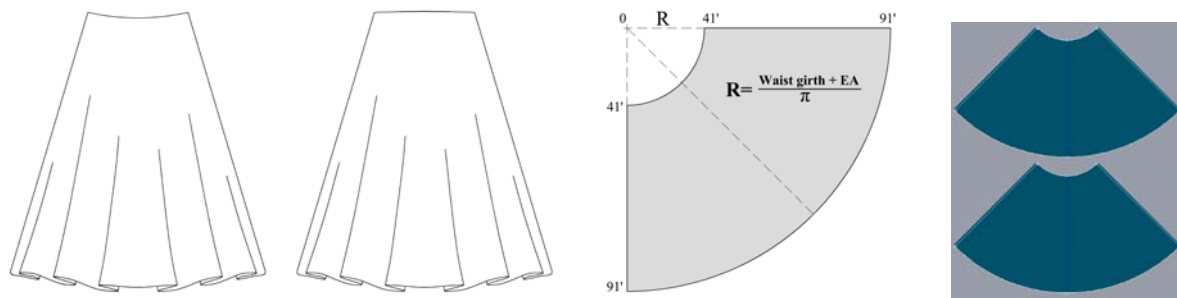


Figure 3. Skirt drawing, construction and patterns

Three real samples produced using 3 different fabrics, and virtual sewing is performed. The dummy is prepared for virtual try-on, fabric properties are defined and the process of virtual try-on is realized.

Transversal planes. For the evaluation and comparison of the gained results transversal planes used. Both the 3D scanning system and 3D prototyping system provides tools for acquisition of transversal planes (see Fig.4) and for their analysis by distance and perimeter or circumference measurements.



Figure 4. Transversal planes in Anthroscan and Modaris 3D

Results and discussion

For visual evaluation of gained skirt silhouettes photographs, scans and virtual prototypes shown in front, side and back views (Fig.5). It is evident that first skirt - made of the thinnest fabric (width of the real draped skirt at hem 66 cm) - photography and the 3D scan picture differ significantly from the 3D prototype picture. Although there are significant differences in parameters, in the case of the other two fabrics - made of semi thick and the thickest fabric (width of the real draped skirt at hem 71 and 73 cm - accordingly) - the 3D results are almost identical.

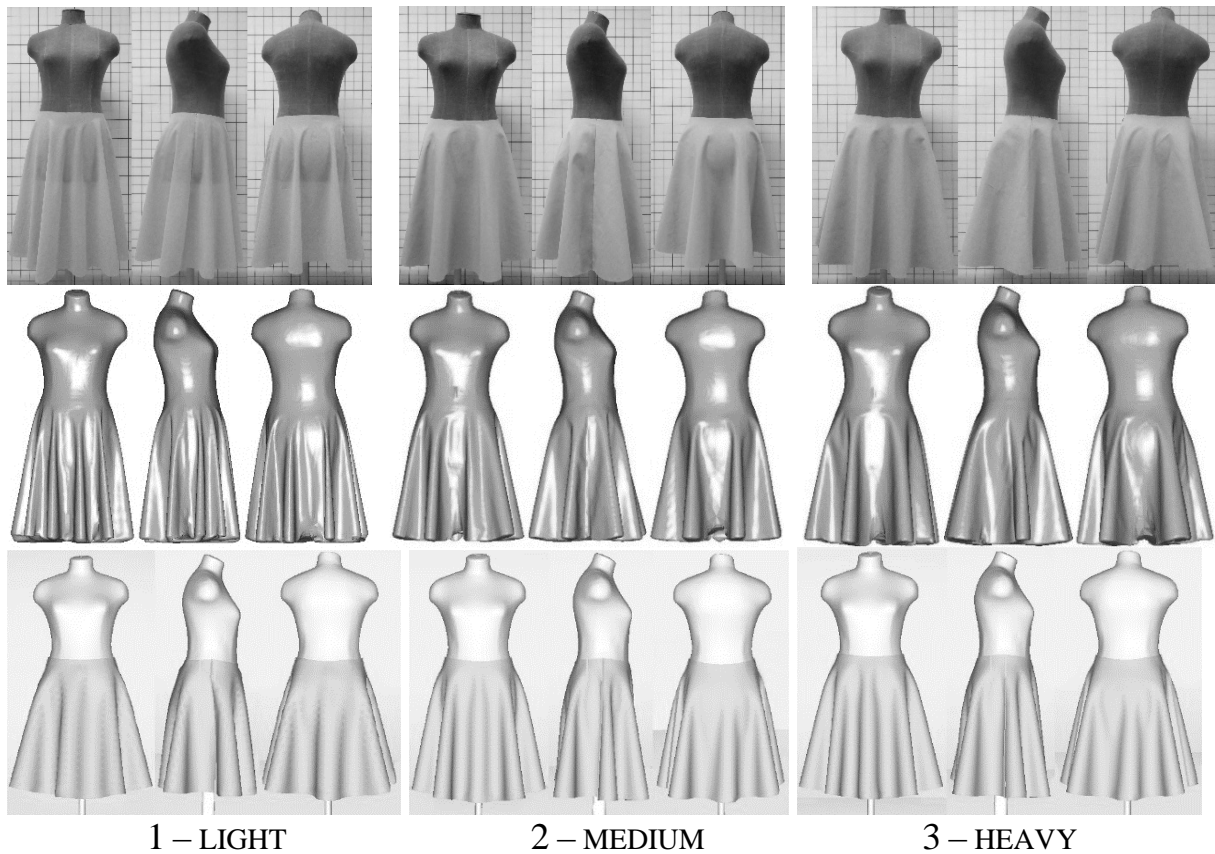


Figure 5. **Real, scanned and virtual skirt**

Transversal planes in system AnthroScan and Lectra gained in three levels (distance 22 cm) - hem level, middle level and upper level (see Fig.6). Gained sections superimposed (see Table 2: continuous line – 3D transversal plane, dashed line – 3D virtual try-on prototype), compared and measurements of width (dorso-ventral and lateral diameters) and perimeters of sections obtained.



Figure 6. **Levels of transversal planes**

Table 2 Superimposed sections of transversal planes







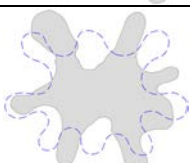
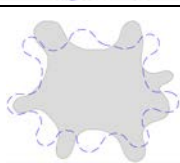

Fabric No.	Hem	Middle	Upper
1. Light			
2. Medium			
3. Heavy			

Table 3 contains data of diameters measured. All levels measured lateral (horizontal) diameter are larger for 3D virtual try-on samples than scanned real ones. All differences are positive and varies from 1 up to 8 cm. Differences measured at dorso-ventral (vertical) direction are smaller and 3D virtual try-on samples are smaller than real 3D scanned prototypes in most cases (differences varies from -13 up to +1 cm). Visual analysis of sections shows that real prototypes are uneven while virtually simulated drape are more even, symmetrical and curves are smoother – most visible appearance of this is at the hem level.

Perimeters measured vary a lot – especially at an upper level – which could be affected by weight of the fabric – might be it is not simulated properly. Differences at the hem level could be because of real scanned drape – inside of the draping folds laser beam cannot reach, so some differences can be caused by surface approximation.

The proportions of transversal plane diameters compared with correlation model shows great value – model validity tends to be 1. Nevertheless regression slopes differs (see Fig. 7) – the slope indicates the steepness of a line; it define the linear relationship between both diameters measured, and can be used to estimate an average rate of change. The greater the magnitude of the slope, the steeper the line and the greater the rate of change – which shows that in real 3D scans the ratios of horizontal and vertical diameters are more balanced comparing with 3D try-on prototypes.

Table 3 Transversal plane measurements

		Diameter [cm]						Perimeter [cm]		
		Horizontal			Vertical					
		Real 3D	Virtual try-on	Δ	Real 3D	Virtual try-on	Δ	Real 3D	Virtual try-on	Δ
Hem	1.	54	62	+8	44	44	0	258	260	+2
	2.	57	58	+1	51	42	-3	268	261	-7
	3.	56	61	+5	55	42	-13	274	261	-13
Middle	1.	46	51	+5	38	38	0	188	191	+3
	2.	48	51	+3	41	36	-5	194	196	+2
	3.	48	52	+4	43	37	-6	190	194	+4
Upper	1.	37	40	+3	30	31	+1	117	126	+9
	2.	39	43	+4	31	31	0	121	138	+17
	3.	38	42	+4	32	33	+1	119	132	+13

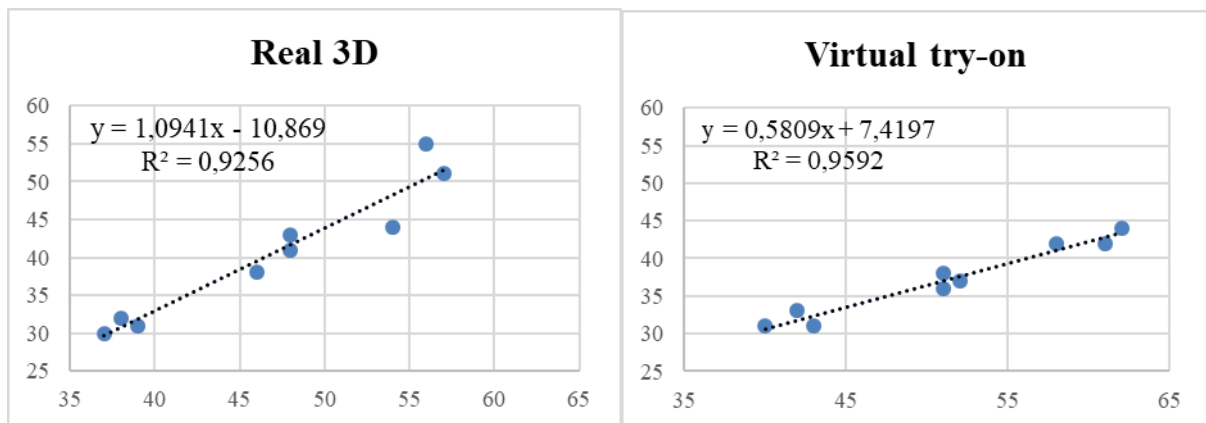


Figure 7. Analysis of diameter proportion

Conclusion, future research opportunities

Thanks to computer technologies and scanning equipment there is a more and more rapid development in anthropometry and cloth designing. Equipment for gaining 3D data of a human body has been invented very recently. It is possible to gain a great number and volume with different anthropometrical measurements and supplement data with 3D measuring appliances. Both the 3D scanning system and 3D prototyping system used in the research provides tools for acquisition of transversal planes and for their analysis by distance and perimeter or circumference measurements. It can be considered as a successful approach in the process of silhouette or clothing draping form analyse.

This research draws necessity for new garment designing and producing methods, which could provide the creation of the most appropriate garment for each customer, using calculation methods and therefore reducing costs, time spent on industrial production and waste generation. The method provided for testing virtual prototyping validity allows to outline lacks and benefits of virtual try-on systems. Also this research should be widened with more samples tested – as the topicality of research lies in rapidly growing on-line garment stores whereas the customers satisfaction with garments purchased should be increased.

Also research should be performed for investigation of different material testing methods – as more traditionally ISO standardized testing of textile physical properties is used. The work with KES-F and FAST data should be analysed and compatibility of results with traditional testing methods should be determined.

References

- D'Apuzzo, N. (2008). *Feasibility study: Full Body Scanning, Virtual-Try-On, Face Scanning, Virtual-Make-Over with application in apparel*. Report. Zürich: Hometrica Consulting.
- Fairhurst, C. (2008). *Advances in apparel production*. Woodhead Publishing Series in Textiles: Number 69. Cornwall: Woodhead Publishing Limited and CRC Press LLC.
- ISO 139:2005/A1:2011. *Textiles - Standard atmospheres for conditioning and testing - Amendment 1*.
- Kapče, M. (2016). *Konstruēšana. Modelēšana. Šūšana*. Rīga: Apgāds Zvaigzne ABC.
- Latviešu literārās valodas vārdnīca*. 1.–8. (1972–1996) Rīga: Zinātne.
- Lányi, C. S. (2012). *Applications of Visual Reality*. Rijeka: In Tech.
- Lee, J., Kim, H. A., Nam, Y. J., & Ryu, H. S. (2014). Drape Evaluation of 3D Garment Simulations for Flared Skirts. *Fashion & Textile Research Journal, Volume 16, Issue 1*. The Korean Society for Clothing Industry.
- LVS EN 12127:2001. *Textiles - Fabrics - Determination of mass per unit area using small samples*.
- Moiz, A., Iqbal, M., Ahmed, A., & Farooq, K. (2018). *Kawabata Evaluation System*. www.fibre2fashion.com. January 15, 2018.
- Nayak, R., & Padhye, R. (2015). *Garment Manufacturing Technology*. Woodhead Publishing Series in Textiles: Number 168. UK: Woodhead Publishing, an Imprint of Elsevier Ltd.
- Nayak, R., & Padhye, R. (2017). *Manikins for Textile Evaluation*. The Textiles Institute Book Series. Chennai: Woodhead Publishing, an Imprint of Elsevier Ltd.
- Power, E. J., Apeagyei, P. R., & Jefferson, A. M. (2011). *Integrating 3D Scanning Data & Textile Parameters into Virtual Clothing*. 2nd International Conference on 3D Body Scanning Technologies, Lugano, Switzerland, 25-26 October 2011
- Tekstilrūpniecības terminu vārdnīca*. LZA TK Terminoloģija 15 — R. (1989) Rīga: Zinātne.
- Wu, Y. Y., Mok, P. Y., Kwok, Y. L., Fan, J. T., & Xin, J. H. (2011). An investigation on the validity of 3D clothing simulation for garment fit evaluation. *International conference on Innovative Methods in Product Design. Proceedings of the IMProVe*.
- Zinātnes un tehnoloģijas vārdnīca*. (2001). Rīga: Norden AB.

ФОРМИРОВАНИЕ РЕСТАВРАЦИОННОЙ ШКОЛЫ УЗБЕКИСТАНА И ЕЁ РОЛЬ В СОХРАНЕНИИ АРХИТЕКТУРНОГО НАСЛЕДИЯ

Formation of the Restoration School in Uzbekistan and Its Role In Preservation of Architectural Heritage

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Abstract. *The article considers the history of the origination of the restoration of the architectural heritage in Uzbekistan, the formation of a scientific methodology for the restoration of architectural monuments.*

Also, the article is devoted to the formation of the restoration school of Uzbekistan, information about the well-known architects-restorers and scientists who stood at the origins of the restoration work in the republic, such as M. F. Mauer, B.N. Zasytkin and others, as well as examples from their restoration practice is given in the article.

The analytical method, generalization methods, systematization and practical experience were used in the article. In particular, the following were studied: (1) literature on the restoration of architecture in Uzbekistan, materials from the Central State Archives of Architecture of Uzbekistan, materials of the personal achieves of restorers; (2) practical experience of architects in the restoration of architectural monuments; (3) object of study: architectural heritage of Uzbekistan: minarets, mausoleums, mosques, madrasahs and other types of architectural objects; (4) subject of research: structures, domes, architectural decor of interiors and facades of monuments of architecture, as well as the activities of renowned architects-restorers and scientists of Uzbekistan.

Keywords: *protection, restoration of architectural monuments, M.F. Mauer, restoration of the minaret and mausoleum, B. N. Zasytkin, the scientific method of restoration.*

Введение **Introduction**

Актуальность: Узбекистан обладает многими уникальными шедеврами архитектуры и, конечно, это наследие должно быть передано следующим поколениям. Архитектурные памятники это не только художественные произведения, они также являются и научными документами, как исторический источник. И поэтому следует бережно и тщательно проводить работы по охране, реставрации и консервации

памятников архитектуры Узбекистана, которые являются актуальными для страны. Эти работы должны быть основаны на научных методиках и практиках учёных, архитекторах–реставраторах, археологов, керамиков и многих других специалистов, включая основоположников реставрационного дела в Узбекистане, таких как М. Ф. Мауер, Б. Н. Засыпкин, Л. Ю. Маньковская, И. И. Ноткин, П. Ш. Захидов, В. М. Филимонов и многие другие. Они внесли бесценный вклад в формирование и развитие реставрационной школы Узбекистана.

Цели изучения: Рассмотреть истоки реставрационного дела в Узбекистане, его формирование на примере деятельности ведущих учёных прошлого – М. Ф. Мауера, Б. Н. Засыпкина, Л. Ю. Маньковской, И. И. Ноткина, П. Ш. Захидова и других, заложивших теоретический фундамент научной методики реставрации, а ряд их научно–методических разработок по реставрации и сохранению памятников архитектуры ввести в научную практику. Изучение опыта основоположников реставрационного дела способствует нахождению архитекторами–реставраторами нашего времени правильного решения определенных задач при реставрации и консервации памятников архитектуры.

Методы: в статье использовался аналитический метод, методы обобщения, систематизации и практический опыт. В частности, изучен(-а) следующее: (1) литература о реставрации зодчества Узбекистана, материалы Центрального Государственного архива архитектуры Узбекистана, материалы личных фондов реставраторов; (2) практический опыт работы архитекторов по реставрации памятников архитектуры; (3) объект исследования: архитектурное наследие Узбекистана: минареты, мавзолеи, мечети, медресе и архитектурные объекты других типов; (4) предмет исследования: конструкции, купола, архитектурный декор интерьеров и фасадов памятников зодчества, а также деятельность известных архитекторов–реставраторов и учёных Узбекистана.

Изученность проблемы: вопросы реставрации памятников архитектуры в Узбекистане изучены и исследованы в контексте трудов учёных и исследователей прошлого и современности, таких как: Засыпкин Б. Н. (1926). *Вопросы охраны и реставрации древних сооружений в Средней Азии*; Засыпкин Б. Н. (1942). *Итоги изучения архитектуры Узбекистана за 25 лет*; Захидов П. Ш. (1986). *Реставрационное дело в Узбекистане*; Массон М. Е. (1968). *Падающий минарет*; Нильсен В. А. (1967). *Материалы и исследования по истории реставрации памятников Узбекистана*; Махмудова М. Т., Махмудова М. М. (2017). *М. Ф. Мауер – исследователь и реставратор архитектурного наследия Узбекистана (Из истории по реставрации памятников старины)*.

Научная и практическая значимость статьи: Значимость статьи заключается в применении результатов проведённого научного исследования деятельности реставраторов и архитекторов Узбекистана в современную практику реставрации памятников архитектуры. Также представление научных методик по реставрации на примере работ М. Ф. Мауера, Б. Н. Засыпкина, Л. Ю. Маньковской, И. И. Ноткина способствует сохранению архитектурного наследия Узбекистана.

Создание школы реставрации в Узбекистане *Establishment of the restoration school in Uzbekistan*

Истоки реставрационного дела в Узбекистане лежат далеко в прошлом. Еще в середине XIX в. на территорию современного Узбекистана пребывали любознательные путешественники и пытливые учёные–наблюдатели, которые начали исследовать археологически и архитектурные памятники. В это время был образован Туркестанский кружок любителей археологии, который оказал большое влияние на деятельность талантливых учёных. Среди них был и В. Л. Вяткин, выдающийся археолог, историк-востоковед и преданный учёный, добровольно взваливший на себя тяжкую ответственность за судьбу архитектурных памятников Самарканда. Он одним из первых начал проводить реставрационные работы на памятниках края, сделал самые срочные ремонты на особо ценных памятниках, выхлопотав небольшую сумму денег у местной администрации.

В начале XX в. в Узбекистане стали больше уделять внимание изучению и сохранению культурного наследия, в том числе памятников архитектуры. Среди первых шагов в этом направлении стало создание Комитета по охране памятников старины и искусства. В это же время начинается организованная работа по выявлению, учёту, изучению и спасению памятников от их дальнейшего разрушения.

Первоочередной задачей Комитета было взятие на учёт наиболее ценных археологических и архитектурных памятников, определение их возникновения, имена зодчих. В процессе реставрации памятников, проводимых Комитетом, должна была вестись работа по сбору документов, относящихся к тому или иному памятнику, проведение фотофиксации и эстампаж¹ всех подписей, которые помогают определить датировку здания. Также проводилось обследование частей зданий скрытых под землёй археологическим методом, в том числе изучение

¹ Оттиск и техника переноса рельефных изображений на бумагу, плёнку или ткань, покрытую каким-либо красящим веществом.

различных исторических материалов, касающихся памятника, затем занимались реконструкцией памятника. Свои первые работы Комитет начал проводить на памятниках, имеющих художественную и историческую ценность, таких как мавзолей и мечеть Биби Ханум, мавзолей Ишрат Хана, мавзолей Ак–Сарай, обсерватория Улугбека в Самарканде, мавзолей Баян Кули Хана в Бухаре, дворец Ак–Сарай в Шахрисябзе и т.д.

В своё время Комитет также сотрудничал с местными мастерами-зодчими. Так, большую помощь Комитету в конструктивном укреплении памятников оказали такие мастера как Абдукадыр Бакиев, Гафуров, усто Шамсуддин из Самарканда, а в Бухаре – бывший при дворе эмира архитектор Ибрагим Хафизов, народные мастера Рахим Хаятов, Ширин Мурадов, Нарзило Ядгаров и другие.

Комитет в течении ряда лет менял своё название: Туркомстарис, Средазкомстарис, Узкомстарис (Крюков, 1990). В дальнейшем, в 50-е гг. в Узбекистане был организован Комитет по охране памятников материальной культуры, который был упразднён в 1961 г. и на его месте создаётся Главное управление охраны памятников материальной культуры и музеев. Также в середине XX в. создаётся отряд архитекторов–реставраторов Специальной научно-реставрационной проектной мастерской (СНРПМ), которая в 1979 г. реорганизуется в научно–исследовательский и проектно–изыскательский институт консервации и реставрации памятников культуры (УзНИПИР).

Основоположники и продолжатели реставрационной школы в Узбекистане – М. Ф. Мауэр, Б. Н. Засыпкин, Л. Ю. Маньковская, И. И. Ноткин, и их вклад в сохранение архитектурного наследия Узбекистана

Founders and successors of the restoration school in Uzbekistan – M. F. Mauer, B. N. Zasyipkin, L. Yu. Mankovskaya, I. I. Notkin, and their contribution to the preservation of the architectural heritage of Uzbekistan

Развитие реставрационного дела было связано со многими деятелями науки. Особое место среди них принадлежит инженеру–архитектору и реставратору М. Ф. Мауэру, который заложил практические основы научной реставрации, а также архитектору–реставратору Б. Н. Засыпкину, являющимся пионером разработки методов реставрации памятников Средней Азии. Также большую роль в деле охраны, изучения, восстановления и пропаганды памятников культуры сыграли такие учёные и мастера, как И. И. Ноткин, М. Е. Массон, В. А. Шишкин,

Л. Ю. Маньковская, Ш. Мурадов, А. Бакиев, Ю. Мусаев, Ш. Гафуров, П. Ш. Захидов и многие другие.

М. Ф. Мауер – архитектор, инженер и реставратор, который посвятил свою жизнь разгадке замыслов древних зодчих и реставрации памятников архитектуры Узбекистана и Средней Азии, в особенности Самарканда.

Согласно Б. Н. Засыпкину «...Одной из самых первых и известных реставрационных работ Мауера является выпрямление 32 м северо–восточного углового минарета Медресе Улугбека (1417–1420 гг.)» (Засыпкин, 1942), являющимся частью ансамбля Регистан в Самарканде. Начав с решения проблемы по выпрямлению минарета, Мауер наконец нашёл своё подлинное призвание – архитектор-реставратор.

Именно по инициативе Михаила Фёдоровича в Самарканде была организована комиссия по укреплению падающего минарета. Предложения разобрать его до основания и выложить вновь были отвергнуты, так как новый минарет никакой ценности не имел бы, а подлинность памятника 500-летнего возраста был бы навсегда утрачен.



Изображение 1. Медресе Улугбека. Самарканд, Узбекистан. 1417–1420 гг.

Figure 1. Ulughbek Madrasah. Samarkand, Uzbekistan. 1417–1420

Для изучения причины его наклона и исследования состояния минарета требовалось много времени, и поэтому он был временно укреплен с целью предотвращения дальнейшего разрушения. После детального обмера памятника, М. Ф. Мауер убеждается в правоте своего решения, что минарет можно выпрямить, не разбирая его: он считал, что теоретически и практически это было возможно и такое решение было дерзким. Первоначальный проект, разработанный М. Ф. Мауером, был

отклонён, затем был разработан 2-ой проект совместно с В. Г. Шуховым на основе идеи, предложенной Михаилом Фёдоровичем (Массон, 1968). К осуществлению этого грандиозного замысла готовились пять лет. Так, в 1927 г. в Москве изготовили металлические конструкции, а уже в 1932 г. установленную арматуру привели в действие, огромный ствол минарета был целиком отделён от своего основания, затем был закреплён на раме с шатунами. Повреждённую нижнюю часть удалили от уровня фундамента, заменив её железобетонной кладкой. Затем, приложив усилие в 12 кг, короткими поворотами винта с паузами разной длины в течение нескольких часов ствол минарета качнули в обратном направлении и... выпрямили. Затем постепенно вытащили из-под него одну за другой мощные двутавровые железные балки и установили минарет весом около 400 т на новом основании в вертикальном положении. Через некоторое время, освобождённый от деревянного каркаса, тяжёлый (стальные тросы) и металлической конструкции, минарет был покрыт новой облицовкой из мраморных плит и изразцов у своего основания.

До того времени, в истории реставрации памятников Узбекистана и Средней Азии в целом не было такого случая, и конечно, это была уникальная работа по спасению исторического и культурного наследия Самарканда.

По методике М. Ф. Мауера предполагалось углублённое изучение памятников, это позволило ему и другим архитекторам-реставраторам своевременно и конструктивно укреплять сооружения. Одна из таких работ позволили предупредить обвал свода под склепом в Мавзолее Амира Темура (Гур-Эмир) в 1925 г., над которым находилось знаменитое надгробие Темура из нефрита. Так, Мауером была введена очень интересная железобетонная конструкция на самостоятельных опорах, между каменным полом и сводом, которая воспринимала всю нагрузку, давившую на свод. Это позволило гарантировать сохранность надгробия и свода на многие годы, а вместе с тем сохранить внутренний вид мавзолея и склепа.

Также своевременно было то, что в 1936 г. Мауер укрепил железными кольцами растрескавшийся огромный барабан и ребристый купол Мавзолея Гур-Эмир в Самарканде. Даже в следующие годы, когда на куполе были продолжены реставрационные работы, выяснилось, что лучше деревянных конструкций, разработанных этим учёным, ничего другого не было. Более того, в 1947 г., уже после смерти Мауера, инженер Е. О. Нелле, разработал проект по реставрации купола мавзолея Гур-Эмир на основе предложений Михаила Фёдоровича (Засыпкин, 1926).

Эти и многие другие работы, проведённые М. Ф. Мауером, служат образцом лучших реставрационных работ, которые были сделаны в

Средней Азии, они были проведены с особой тщательностью и научным обоснованием.

Другой архитектор–реставратор и учёный – Борис Николаевич Засыпкин, также посвятивший свою жизнь сохранению бесценного архитектурного наследия Узбекистана и Средней Азии. «Теория и практика реставрационных работ в Средней Азии – многим обязаны Б. Н. Засыпкину, в том числе и подготовкой квалифицированных кадров архитекторов и строителей–реставраторов» – считал один из известных учёных Узбекистана доктор архитектуры, реставратор П. Ш. Захидов (Захидов, 1989).

Борис Николаевич положил начало научной методике ремонтно-реставрационных работ в Средней Азии. Согласно его методике существует определенный порядок и этапы проведения реставрации памятников, в частности: (1) фиксация архитектурного памятника, а именно: обмеры, описание, фотофиксация; (2) исследование конструкций, архитектуры и декора; (3) уточнение первоначального архитектурного образа (время проведения ранних ремонтов, пристроек с привлечением первоисточников, иконографии и археологии); (4) определение стиля, архитектурной характеристики памятника и его место в историко–культурном контексте; (5) обязательная документальная графическая реконструкция; (6) и, наконец, натурная реставрация, как синтез всех архитектурно–исследовательских работ (Засыпкин, 1949).

Он считал, что каждый памятник уникален и требует индивидуального и бережного подхода к реставрации, и поэтому не позволительно пользоваться проектами реставрации, которые проводились на других аналогичных памятниках. Так, в реставрации перекладки аварийного свода портала Медресе Шердор (1619–1636 гг., Самарканд, Узбекистан) пролётом 16,8 м на высоте 25 м проявился последовательно научный подход Б. Н. Засыпкина. Вся работа по выкладке нового свода была произведена за 22 дня. Он был перекрыт кирпичной выстилкой, проведён ряд мероприятий, предохраняющих его от намокания, и укреплена облицовка, тем самым став смелым экспериментом.

Еще одним уникальным экспериментом Засыпкина является реставрация мавзолея Исмаила Самани (IX–X вв., Бухара, Узбекистан) в 1937–1939 гг. Он продолжил глубокие архитектурные исследования памятника, которые были начаты ещё В. Л. Вяткиным. Засыпкин работал совместно с известным мастером из Бухары – зодчим Усто Ширин Мурадов. Имея многолетний опыт работы в деле реставрации памятников старины, Усто Ширин оказывал большую помощь Б. Н. Засыпкину в решении многих трудных задач (Булатов, 1976).

Одна из поздних и сложных работ Засыпкина, где участвовали народные мастера, была реставрация Мавзолея Амир Темура (Гур–Эмир) в Самарканде в 1943–1950 гг. Под его руководством проводились работы по завершению конструктивного укрепления ребристого купола мавзолея и восстановлению его облицовки (Засыпкин, 1950).

Засыпкин открывал неизвестные страницы истории архитектуры Средней Азии, исследовал сейсмостойкость древних сооружений, бился над тайнами древних рецептов ганчевых растворов. Главные его идеи – комплексное изучение шедевров архитектуры, строго научный подход к охране и реставрации, преемственность традиций – сохраняют свою актуальность и поныне.

Развитие реставрационного дела в Узбекистане было продолжено и развито учениками М. Ф. Мауера и Б. Н. Засыпкина. А многие из них непосредственно работали рядом и под руководством Б. Н. Засыпкина. Среди них И. И. Ноткин и Л. Ю. Маньковская, П. Ш. Захидов, В. М. Филимонов, К. С. Крюков и многие другие.

Архитектор–искусствовед и практик реставрационного дела Иосиф Исаакович Ноткин занимал особое место в плеяде ведущих зодчих Узбекистана. Для проведения археологических, историко–библиографических изысканий, испытания древних растворов и строительных материалов он привлекал к своей работе археологов, инженеров, эпиграфистов, геологов, фотографов. Но он также сам вникал во все организационные стороны реставрационного дела – от составления смет и отстаивания права работать в государственных архивах, вплоть до ведения авторского надзора и составления сводного заключительного отчёта о восстановлении памятника архитектуры. Этот универсальный подход давал не только образцы бережного научно обоснованного сохранения наследия, но возможность изучить секреты старых узбекских мастеров, законы построения архитектурной формы.

Благодаря стараниям многих архитекторов, в том числе и Доктора искусствоведения Л. Ю. Маньковской, посвятивших большую часть своей жизни исследованиям и сохранению памятников архитектуры, будущие потомки получили возможность любоваться шедеврами прошлого. Так, Маньковская 17 лет занималась исследованиями комплекса мавзолея Ходжа Ахмед Яссеви (Туркестан, Казахстан) и участвовала в реставрационных работах. На основе историко–архитектурного анализа ей удалось проследить историю сложения комплекса, установить состав мастеров–строителей здания, выявить композиционные приёмы и рабочие методы проектирования зодчих XIV в., обобщить опыт реставраций и систематизировать весь известный материал. Собранный материал, выводы и рекомендации впоследствии использовались при изучении

истории и теории зодчества Средней Азии и при восстановлении памятников XIV–XVII вв. (Маньковская, 1962).

Значимость трудов Маньковской, которая является автором более 100 научных публикаций, заключается в воссоздании истории узбекского зодчества, решения ряда проблем истории искусств Средней Азии, создании основ научной реставрации памятников узбекской архитектуры и разработка проблем изучения и сохранения исторических городов.

Рекомендации по сохранению памятников архитектуры Узбекистана *Recommendations on the preservation of architectural monuments of Uzbekistan*

На основе деятельности М. Ф. Мауера, Б. Н. Засыпкина, Л. Ю. Маньковской и многих др., были разработаны ряд рекомендаций по сохранению и реставрации памятников архитектуры Узбекистана, представленные ниже:

1. Изучить богатый опыт реставрации известных архитекторов–реставраторов, стоявших у истоков реставрационного дела в Узбекистане, а также их последователей, в частности, ряд их научно–методических разработок, который следует ввести в научный обиход и практику реставрации.
2. Разработать всеобъемлющую публикацию по реставрационному делу Узбекистана, которая обобщит и проанализирует почти 100 летний опыт отечественной реставрации.
3. Возродить научно–исследовательский и проектно–изыскательский институт консервации и реставрации памятников культуры в качестве отдельной государственной структуры или в ведомстве Министерства культуры РУз.
4. При реставрации памятников архитектуры следует придерживаться следующих основополагающих правил: (а) реставрация должна проводиться с предварительным подбором архивных материалов и исчерпывающей иконографии реставрируемого объекта; (б) каждая часть здания должна реставрироваться не только с сохранением стиля в его внешнем виде, но и в особенности его структуры, т.е. конструкции; (с) дать архитектурную характеристику памятнику и определить его место в историко–культурном контексте; (d) в случае, если это руинированный памятник, чтобы выбрать правильный способ реставрации, что является очень трудной задачей, реставратор должен поставить перед собой цель, что именно ценится в памятнике архитектуры и в каком виде он желает его сохранить;

(е) обязательная документальная графическая реконструкция; (ф) натурная реставрация с применением природных строительных материалов является синтезом всех архитектурно–исследовательских работ.

Summary

The preservation of the rich architectural heritage of Uzbekistan is actual and requires careful and long-term activities on restoration. The restoration school of Uzbekistan was created over many decades and left a rich scientific and practical heritage. It was reflected in the works of such scientists as B. N. Zasyrkin, M. F. Mauer and others. Now, years later, tracing and analyzing the way of development of the restoration school of Uzbekistan, comparing those works that were conducted in the early years, we come to the conclusion that the methods and techniques used in those years are actual and relevant for modern restoration. Moreover, familiarization with the works of predecessors would help to improve the quality of restoration work conducted in the present days.

The study of the theoretical basis of the founders of the restoration school in Uzbekistan and the generalization of their valuable experience will contribute to the creation of a full-fledged modern restoration school in the country. At the same time, one should take into account that scientific thought does not stand in one place and therefore it is very important to study the evolution of the development of restoration methods, including local and international practices.

References

- Булатов, М. С. (1976). *Мавзолей Саманидов – жемчужина архитектуры Средней Азии*. Ташкент: Изд –во им. Г. Гуляма.
- Засыркин, Б. Н. (1926). *Вопросы охраны и реставрации древних сооружений в Средней Азии*. Личный фонд. Центральный Государственный архив Архитектуры Узбекистана.
- Засыркин, Б. Н. (1928). *Архитектурные памятники Средней Азии. Проблемы исследования и реставрации*. Вып. 2. Москва: ЦГРМ.
- Засыркин, Б. Н. (1942). *Итоги изучения архитектуры Узбекистана за 25 лет*. Личный фонд. Центральный Государственный архив Архитектуры Узбекистана.
- Засыркин, Б. Н. (1949). *Методика и практика реставрационных работ по памятникам архитектуры Узбекистана*. Личный фонд. Центральный Государственный архив Архитектуры Узбекистана.
- Засыркин, Б. Н. (1950). *Научный отчет по реставрационным работам в ансамбле Гур-Эмир в 1948 г.* Ташкент: Архив Главного управления по охране и использованию объектов культурного наследия,
- Захидов, П. Ш. (1989). *Открывший двери в прошлое*. Ташкент: Правда Востока.
- Захидов, П. Ш. (1959). *Уста Ширин*. Ташкент: Шарк Юлдузи, # 1.
- Крюков, К. С. (1990, 1991). *Организационные формы охраны и реставрации памятников архитектуры Узбекистана (1920–1990 гг.)*. Ташкент: Архитектура и строительство Узбекистана, # 8, # 2,
- Массон, М. Е. (1968). *Падающий минарет (Северо-восточный минарет Самаркандского медресе Улугбека)*. Ташкент: Узбекистан.

- Махмудова, М. Т. (1987). *Учёный, архитектор, реставратор (к 95-летию Б. Н. Засыпкина)*. Архитектура и строительство Узбекистана, # 2.
- Махмудова, М. Т. (1991). *Исследователь и реставратор архитектурных памятников Средней Азии, к 100 летию Б. Н. Засыпкина*. Ташкент: Архитектура и строительство Узбекистана, # 5.
- Махмудова, М. Т. (1991). *Исследования и реставрация памятников архитектуры*. Ташкент: Архитектура и строительство Узбекистана, # 5.
- Махмудова, М. Т., & Махмудова, М. М. (2016). *Борис Засыпкин – исследователь и реставратор памятников архитектуры Узбекистана и Средней Азии*. Ташкент: San'at, # 3.
- Махмудова, М. Т., & Махмудова, М. М. (2017). *М. Ф. Мауер – исследователь и реставратор архитектурного наследия Узбекистана. (Из истории по реставрации памятников старины)*. Самарканд: Научно-технический журнал СамГАСИ, # 1.
- Маньковская, Л. Ю. (1974). *Ремонты и реставрация мавзоля Ходжа Ахмед Ясеви*. Сб. Теория и практика сохранения памятников архитектуры. ЦНИИТ И. А.
- Маньковская, Л. Ю. (1962). *О методике реставрации памятников архитектуры*. Ташкент. Архитектура и строительство Узбекистана, # 1.
- Михайловский, Е. В. (1971). *Реставрация памятников архитектуры*. Москва: Издательство литературы по строительству.
- Плетнёв, И. Е. (1966). *Реставрация купола над мавзолеем Гур-эмир*. Ташкент: Науч. труды ТашПИ, вып. 28.

PEDAGOGICAL TECHNOLOGIES IN MUSIC EDUCATION AS A FACTOR OF DEVELOPMENT OF THE INTEGRAL PERSONALITY

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Abstract. *Music like any other art helps the individual explore the world, develops the individual's emotional sphere, building fundamentals for systematisation and classification of phenomena, algorithms of creative thinking on the basis of the perception and analysis of music artistic characters, thus defining development of students' memory, fantasy and imagination, stimulating them to search for unusual solutions of problems. The development of these abilities is indispensable in any sphere of human activity and – what is the most important – gives a possibility for individual's self-realisation. Therefore the main task of music education is development of the complete personality, based on the needs and demands of the modern society. Solution of this task requires reviewing of the music educational process, modernisation of the ways of realisation of the educational content, ensuring creation of new teaching forms, methods, means and technologies.*

Keywords: *pedagogical technologies, music educational process, development of a personality, activity, model.*

Introduction

*“A bad teacher presents the truth, a good teacher helps to find it”
Adolph Diesterweg*

Due to the modification of the main paradigm of the modern education directed towards educating and upbringing of a creative, tolerant, sociable individual, understanding values of the world and national culture, having own active life position, i.e. education of the consistent individual, it is necessary to reconsider the entire pedagogical process and to transit to a new content of education, which would correspond to the today's needs of the social and economic development of the society.

The main reasons why the new content is necessary are:

- the need in increase of motivation and intensification of students' learning and cognitive activity;
- the low level of the individual's socialisation in the dynamically changing society;

- the necessity to introduce a systematically active approach into the study process;
- replacement of the inefficient verbal way of knowledge transfer (psychologists acknowledge that a student is capable to assimilate not more than 36 % of verbal information);
- the possibility to plan a technological chain of methods, organisational forms of interaction between a student and a teacher, being a guarantee of stable results.

The sphere of music education has been conservative for a long time and almost no technological innovations have been used in it. Mostly it is related to the special features of the music education, which is addressed to the individual's emotions and inner world, and its development is "unique, inimitable and cannot be technologically described" (Шакурова, 2016).

Music like any other art helps the individual explore the world, develops the individual's emotional sphere, building fundamentals for systematisation and classification of phenomena, algorithms of creative thinking on the basis of the perception and analysis of music artistic characters, thus defining development of students' memory, fantasy and imagination, stimulating them to search for unusual solutions of problems. The development of these abilities is indispensable in any sphere of human activity and – what is the most important – gives a possibility for individual's self-realisation. Therefore the main task of music education is development of the complete individual, based on the needs and demands of the modern society. Solution of this task requires reviewing of the music educational process, modernisation of the ways of realisation of the educational content, ensuring creation of new teaching forms, methods, means and technologies.

Aims of the research:

- to do a theoretical analysis of the evolution of the concept "pedagogical technology" and to define principal methodological principles of assessment of the pedagogical activity;
- to examine pedagogical technologies in the music educational process and work out a processual model of pedagogical technologies in the music educational process as an activity.

Methodology of the research: theoretical analysis of scientific literature about the problem of the research, modelling, interpreting.

Theoretical basis of the research: concepts of pedagogical technologies (John Amos Comenius, N. Crowder, V. Bepalko, G. Selevko), activity theory (L. Vygotsky, S. Rubinstein, A. Leontyev), activity cycle (Z. Chehlova).

Evolution of the concept “pedagogical technology”

“**Technologization**” of pedagogical activity had started early before the moment, when the largest part of pedagogues, scientists and practitioners realised objectivity of the processes.

The term “Technology” appeared in Ancient Greece and it consists of two parts: “*techne*” – art, skill, mastery and “*logia*” – the study of. If we translate it word for word, the word “technology” means a study of skill (Михайленко, 2011). For those times, it meant an art of an artisan who was practicing it in producing various objects under guidance of a mentor. Pedagogues of Ancient Egypt, Greece and Babylon noticed that repetitiveness of operations in creation of any values (producing household objects, or interior objects, etc.) helps develop necessary apprentice’s skills. Thus, famous Greek philosopher and pedagogue Socrates owing to his forethought and logical influence on the disciples “provoked their intellectual activity, inducing them to see the deep core of the discussed problem behind the outer ease of the issue” (Фохт, 1998). Later the concept “technology” came widely into use also in other spheres. As British psychologist and expert in the sphere of creative thinking Edward de Bono (Edward de Bono, 1933) says, technology is a process “of production of something useful on the basis of knowledge application” (Эдвард де Бонно, 2005).

Quite natural is the fact that Technology and Pedagogy as sciences emerged in the same historical period, because organisation of mass-production required for mass-education. A fundamental of mass education was developed by John Amos Comenius (1592-1670), who was the first to find a scientific formulation for the concept of “pedagogical technology” in his work “The Great Didactic”. In this work, J. A. Comenius detects ways and methods of teaching, which can guarantee the positive result. As a whole, Comenius’ work is directed towards formulation of basic methods of teaching, which, in his opinion, can be similar to “proficiently tuned up mechanism, which is a didactical machine” (Коменский, 1939). He wrote, “For the didactical machine it is necessary to find:

- 1) firmly specified aims;
- 2) means, which are precisely adjusted to achieving the aims;
- 3) strict rules on usage of the means making it impossible not to reach the aims” (Коменский, 1939).

Thus, he was the first man who formulated the module “*aim – means – rules of their usage – result*”, which is the core of any technology. Comenius’ quest is still urgent in the modern pedagogy.

The term “pedagogical technology” developed in the 20th century.

In the 1940s, the term “technology in education” meant application of engineering mind in teaching and education process and it was directly related to usage of audio and visual means in the study process. In 1946, pedagogical

technologies were regarded as an object of research. In the international pedagogical encyclopaedia (Оксфорд, 1985) it is written that the reason of it was the introduction of the audio and visual education plan in Indiana University of the USA, and its author was L. Larson. Attempts to “technologize” the study process at that time were marked with appearance of various means of receiving information (starting with recording and reproduction of sounds to projection of images), combined under the term “**audiovisual means**” (cassette-recorders, TV-sets, record-players, projectors – objects of everyday use).

In the 1950s, a special “technological” approach to construction of the very process of teaching appeared, the theoretical basis of it became the **idea of programmed learning**. The conception of the idea was grounded by American psychologist B. Skinner (*Burrhus Frederic Skinner, 1904-1990*) in 1954 in his lecture “*The Science of Learning and the Art of Teaching*”. The point of this approach is the idea of complete controllability of student’s work. Particular features of this kind of teaching are specification of teaching aims and consequent procedure of their achievement – an element by element. W. Schramm (*Wilbur Lang Schramm, 1907-1987*) presented a more detailed content of the programmed learning – he believed that “the programmed learning is an automatic tutor, leading students a way consisting of small logically related steps, thus it almost does not make any mistakes and gives correct answers, which are immediately confirmed by communicating the outcome, and as a result it moves by subsequent steps towards the answer, which is the aim of learning (Schramm, 1997).

In 1958, American scientist and pedagogue N. Crowder (*Norman Allison Crowder, 1921-1998*) refined on B. Skinner’s technology by putting forward a branched scheme of programmed learning with the multiple choice out of the suggested answers and with the corresponding feedback depending on the correctness of the answer. Thus, the teaching technology became adaptive, i.e. it ensured the possibility to vary ways of presentation of the study material depending on changes in internal or external conditions of teaching.

In 1961, B. Skinner’s follower D. Finn suggested a new term – “**teaching technology**”. In the University of South California he organised a department of teaching technology. D. Finn noticed that only “unsophisticated people think that technology is just a complex of hardware and teaching aids. It implies much more. It is a way of organisation, it is a way of thinking about materials, people, institutions, models and systems “man-machine” (Селевко, 2006).

The struggle between Skinner’s and Crowder’s followers in the 1960s ended with a compromise, which was called the “period of consolidation” (1967-1972). This is the time of popularity of various concepts and paradigms of pedagogical technologies, and the very problem obtained overall pedagogical significance. As a result, the **combined technology of programmed teaching** appeared, where two directions of its interpretation were defined in dependence of the level and

results of research in the given sphere in various countries. Supporters of the first direction proceeded relating technologies with application of technical means in education (*technology in education*). Representatives of the second direction highlighted the necessity to increase efficiency of organisation of the teaching process (*technology of education*) and to overcome retarding of pedagogical ideas from the rapid technological development. Thus, the first direction was marked as “**technical aids in education**”, the second one – “technology of education” or “**technology of the education process**”.

Mass development and introduction of education technologies into practice in schools started in the 1960s-1970s in Europe and the USA and appears in works of B. Bloom, J. S. Bruner, B. Coscarelli, G. Carroll, D. Hamblin. The result of the given stage is recognition of pedagogical technologies as a research object and the increase of the number of universities working out their own curricula for preparation of specialists in the sphere of pedagogical technologies.

In the 1970s, the complex approach in teaching gave the possibility to solve didactical tasks, which can be described and defined in details. Pedagogical technologies were introduced almost in all countries.

The 1980s-1990s can be characterised as the extension of the base of the pedagogical technology. It was connected with the recognition of pedagogical technologies by the sphere of theoretical knowledge in pedagogy, where the concept of the “**technology of education**” began to prevail.

Russian academician G. Selevko distinguished three aspects in the “pedagogical technology”:

- scientific: pedagogical technologies are a part of pedagogy, investigating and developing aims, content, teaching methods and projecting pedagogical processes;
- processually descriptive: the description (algorithm) of the process, the aggregate of aims, content, methods and means for achievement of the planned results of education;
- processually operative: realisation of the technological (pedagogical) process, functioning of all personal, instrumental and methodological pedagogical means.

Thus G. Selevko divides the structure of the pedagogical technology into 3 components: the conceptual part, the informative part and the processual part (Селевко, 2006).

In 1990, interactive technologies were applied and introduced into education. The problem of technologies became one of the most popular discussion topics in pedagogy. The scientific and pedagogical literature about pedagogical technology in education includes hundreds of items with dozens of interpretations of the meaning. Here are some of them.

Pedagogical technology is:

- the systemised method of planning, realisation and assessment (devising – applying – assessing) of the entire process of learning and learning by taking into account human and technical resources and their interrelation. Technological effectiveness of the education process consists in making the education process completely manageable (Глоссарий терминов по технологии образования, 1986);
- a sphere of research and practice (in the frameworks of the education system), related to all aspects of organisation of pedagogical systems and the procedure of allocation of resources for achieving specific and potentially represent able outcomes (Митчелл, 2011);
- a complex, integrative process comprising people, ideas, means and ways of organisation of activities for analysis of problems and planning, ensuring, assessing and managing problem solution, embracing all aspects of assimilation of knowledge (Ассоциация по педагогическим коммуникациям и технологии США, 1979);
- a substantial technique of realisation of the education process (Беспалько, 1989);
- to the greatest extent interconnection with the study process – student’s and teacher’s activity, its structure, means, methods and forms (Селевко, 2006).

Thus the analysis of the given problem makes it possible to highlight the consistent line in the teaching approach: *verbal – audio and visual – programmed – interactive teaching*, as well as the methodological principles of the pedagogical activity, if it is realised in the framework of one or another pedagogical technology:

- conceptuality (definition of aims, tasks, methods and content of education);
- systematic nature (a systematic approach in teaching and assimilation of knowledge taking into account interaction of technological and human resources);
- manageability (the possibility of diagnostic targeting or aim setting, planning, projecting, step diagnostics, variation of means and methods aiming at result correction, presence of the feedback);
- reproducibility (existence of methodological recommendations for realisation of technologies);
- efficiency and productivity (achievement of the aim, guaranteed achievement of the results by students).

Leading researcher of the given issue in Russia, academician of the Russian Academy of Education V. Беспалько wrote that “any activity can be either

technology or art. Art is based on intuition, the technology is grounded on science. Everything starts with art and ends with technology in order to start all over again” (Беспалько, 1989).

The analysis of the scientific theoretical literature helped:

- to define the concept of “*pedagogical technology*” as a reasoned and detailed model of pedagogical activity, a way of realisation of the content of education, representing a system of forms, methods and means of learning, ensuring more efficient achievement of the aim;
- to determine the basic methodological principles of pedagogical technologies are defined, which are used to evaluate the pedagogical activity: conceptuality, systematic nature, manageability, reproducibility, efficiency and productivity.

Activity as a basis of pedagogical technologies in music education

The sphere of music education has been rather conservative for a long time and has almost not used technological innovations. Mostly it is connected with particularity of music education, which is directed towards emotions and individual’s inner world, and its development is “unique, inimitable and cannot be technologically described” (Шакурова, 2016).

Nevertheless, in the beginning of the 20th century active introduction of different pedagogical technologies started. Pedagogical technology in the music educational process is an instrument helping the pedagogue to reach the planned result in a more efficient manner, but the process of task solving becomes consistent, logical, reasoned and purposeful. This is a very important moment, because technological efficiency is one of characteristic features of a pedagogue’s activity in the 21st century.

During music studies fundamentals of systematisation, classification of phenomena, algorithms of creative thinking on the basis of perception and analysis of musical artistic characters are laid, thus defining development of students’ memory, fantasy and imagination stimulating them to search for unusual problem solving ways. Development of these abilities is indispensable in any creative sphere of human activity, making person’s life integral and interesting.

The basis for the choice of pedagogical technologies in music education should be separation of the music activity as a condition and a way, which makes it possible to organise interaction of the triad: the teacher – the student – music. The principal methodological base of the given affirmation is the activity theory (L.Vygotsky, S.Rubinstein, A.Leontyev). Thus according to S. Rubinstein “the very activity is the condition for the individual’s development, but the music art as the only activity corresponding to the task of discovery, expression and communication of the personal sense of the reality, is the subject sphere, which

assists the aspects defining the process of qualitative changes of the individual” (Рубинштейн, 2017).

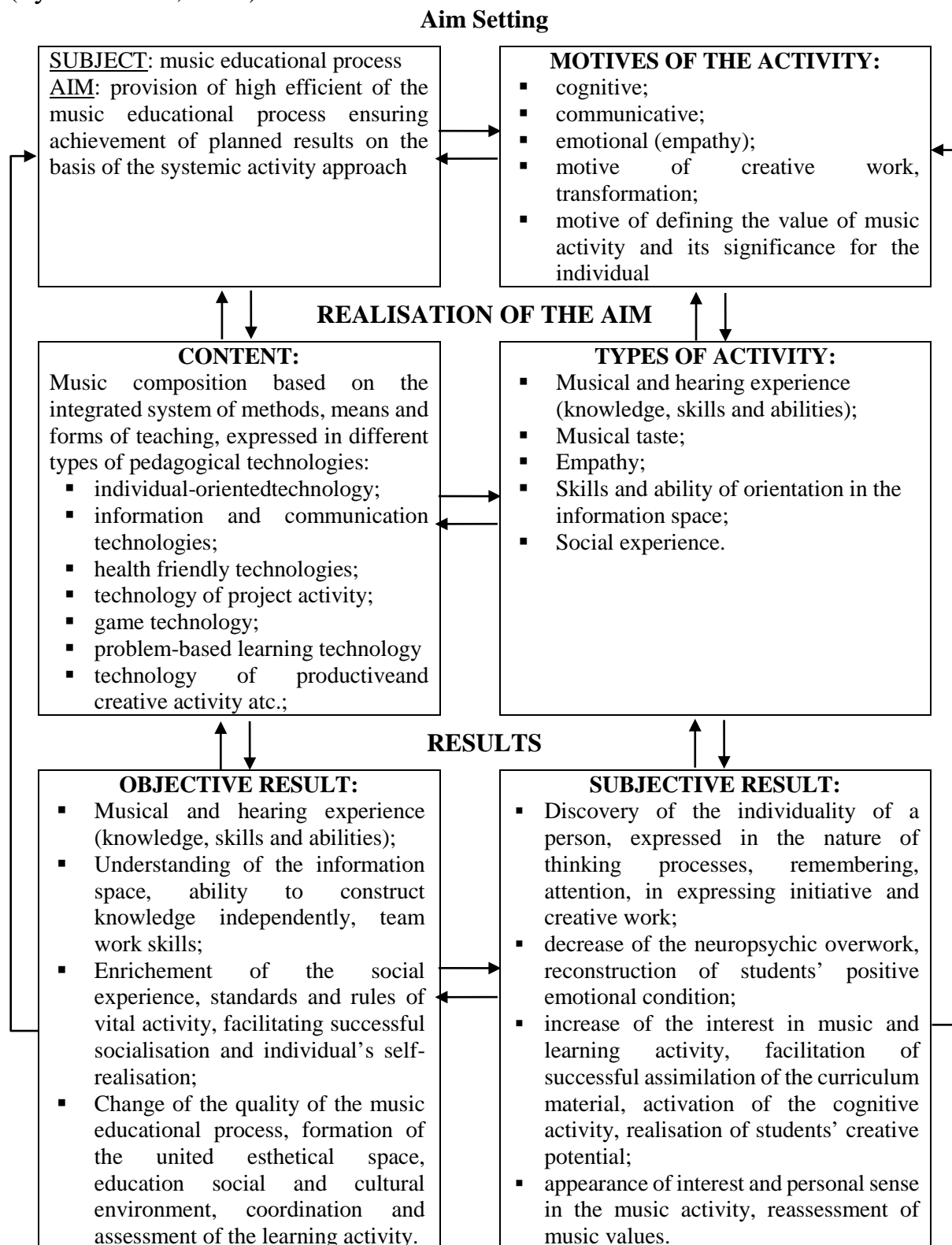


Figure 1. **The Processual Model of Pedagogical Technologies in the Musical Educational Process as an Activity**

The first step– aim setting

The activity approach acts as a concrete scientific methodology for pedagogy. The main principles of the activity approach: the systematic character, the principle of development, objectivity, the cohesion of construction of external and internal activity, correlation and interconditionality of all structural components of the activity (Леонтьев, 1975).

Mutually conditioned and interrelated structural components of activity are: aims – tasks – motives – content and ways helping to realise the activity –planned results of the activity.

On the basis of Professor Z. Chehlova’s activity cycle (Chehlova, 2002), the processual model of pedagogical technologies in the music education process as an activity was constructed (Figure 1).

The basis of the pedagogical technology is precise (diagnostic) definition of the final aim. The given stage is the interrelation between the pedagogue’s aim and the student’s motive, because the pedagogue’s aim must be accepted by the student. The interest, motive (activity inducement), need in execution of the activity must arouse in the student, and as a result there will be the student’s interest and personal sense in the given activity. In the music educational process this interrelation is realised with help of the following motives: cognitive, communicative, emotional (empathy), the motive of creative work and motive of defining the value of music activity and its significance for the individual.

The second step – realisation of the aim

At this stage the aim is being realised. The main content of the aim realization is the music composition based on the integrated system of methods, means and forms of teaching, expressed in different types of pedagogical technologies. Here are some of them.

Technology of the productive and creative activity

In the technology of productive and creative activity there should be a qualitatively new approach in selection of the content of the music artistic material. The new basic formation in the principle of selection of music works is in the technological approach “from the past to the present, from the present to the future” (Громова, 2017). Such an approach gives a possibility to consider every music work from the point of view of traditions and contemporaneity, but the productive and creative activity enables modelling its existence in the future. Thus, for instance, when analysing the genre of singer-songwriters (topic “Contemporaneity in music”), students learn about the history of appearance of

this genre, they study music of medieval bards, minstrels and troubadours. In the process of learning modern song-writers' songs, students examine the genre from the point of view of the modern culture, and in the process of discussion they highlight the topics, which are interesting and important for teenagers, thus creating the base for music works of the future.

Special attention in the given technology is paid to the method of *musical improvisation* as a basis of productive and creative activity. This method is based on the interaction of the artistically figurative and constructive thinking. In parallel with it, one of the main features of the individual's psyche is being developed – it is fantasy, which is the principal component of the music artistic activity.

Health friendly technologies

Health friendly technologies are pedagogical technologies aimed at improvement and preservation of students' health (Любанова, 2005).

It is experimentally proved that music can calm, remove irritability, tension, but it also can excite and stir up. Numerous works of classical music are included into the list, which was made on the basis of neurophysiological investigations of the influence of music characteristics on child's brain. For example, Mozart's melodies exert considerable influence on a human being.

Music perception, performance are the main forms of music therapy. Essentially every teacher of music is a spontaneous psychotherapist, changing students' mood and view of life with help of music. For instance, physicians say that stringed instruments are more efficient in treatment of heart diseases, and performance of joyful songs also helps heart patients. The clarinet improves functioning of blood vessels, the flute has got a positive influence on lungs and bronchus.

Singing folklore is the natural system of art-therapy, including cure with sounds, music, movement, drama, drawing and colour. Songs develop children's ear for music and memory, as well as lungs, breathing and speech apparatus. Hand relaxation, which is typical for dance folklore, enables removing cramps.

Owing to researchers of the psychophysiological aspect of music influence, it is possible to admit that the following facts have been ascertained:

- music influences noticeably the minute blood volume, heart rate, the blood sugar level;
- music stimulates emotions;
- music improves verbal and arithmetical skills;
- music stimulates processes of perception and memory;
- music activates creative thinking.

Information technologies

Modern pedagogical technologies are unimaginable without wide usage of new information technologies. School studies on the basis of computer technologies are introduced into the learning process. Students' interest in modern computer systems is a motivating basis of the learning activity. Information technologies make it possible to discover pedagogical, didactical functions of methods; they become the fundamentals of the modern education, ensuring the necessary quality level, variety, differentiation and individualisation of teaching and upbringing (Бороздин, 2006).

There is a range of music computer software. It can be divided into the following groups:

- Music record-players;
- Software for karaoke;
- Music constructors;
- Music encyclopaedia;
- Software for studies;
- Software for improvisation, playing music in groups, music writing.

Every computer user knows the first group of software – this is *Windows Media Player*, *WinAmp*, etc. Possibilities of this software are rather wide: reproduction of music files, building lists of melodies, recording in different formats. In order to attract students' attention, to direct their thinking to the abstract and figurative side, the teacher can use *Windows Media Player* or *WinAmp*, where there are various lines, changing charts, which are moving along the music playing, drawing fancy designs. For vocal work it is possible to use such software as *VocalJam* or to write own composition with help of *KarMaker*.

Three dimensions, animation, video, sound, imitation of drawing techniques, interactivity of computer software makes it possible and more efficient to develop all types of perception and to involve all types of memory at a lesson: visual, hearing, motoric, figurative and associative. It significantly increases efficiency of the lesson and contributes to enlargement of subject interrelation, when presenting the material.

Application of computer technologies in the music educational process contributes to:

- students' personal development;
- increase of students' interest in music lessons;
- increase of interest in creative and cognitive activity;
- development of activity and independence;
- development of students' esthetical, emotional integrated attitude to music art;

- development of the basics of students' theoretical thinking.

The third step – result of the activity

In the model there are subjective and objective results of the activity based on the correlation and interconditionality of all structural components of the activity.

The objective result:

- Musical and hearing experience (knowledge, skills and abilities);
- Understanding of the information space, ability to construct knowledge independently, team work skills;
- Enrichment of the social experience, standards and rules of vital activity, facilitating successful socialisation and individual's self-realisation;
- Change of the quality of the music educational process, formation of the united esthetical space, education social and cultural environment, coordination and assessment of the learning activity.

The subjective result is contribution to:

- discovery of individuality of the person, expressed in the nature of thinking processes, remembering, attention, in demonstration of initiative and creativity;
- decrease of neuropsychic overwork, recovery of the students' positive emotional condition;
- increase of interest in music and the learning activity, facilitation of remembering the study material, activation of the cognitive activity, realisation of the creative potential of students;
- appearance of the interest and personal sense in the music activity, reassessment of music values.

Conclusions

1. The analysis of the scientific theoretical literature helped to define the concept of "*pedagogical technology*" as a reasoned and detailed model of pedagogical activity, a way of realisation of the content of education, representing a system of forms, methods and means of learning, ensuring more efficient achievement of the aim;
2. Basic methodological principles of pedagogical technologies are defined, which are used to evaluate the pedagogical activity: conceptuality, systematic nature, manageability, reproducibility, efficiency and productivity;

3. The theoretical fundamentals for examination of pedagogical technologies in music education are the activity theory and the activity cycle, which became the basis for development of the processual model of pedagogical technologies in music education process as an activity;
4. The processual model of pedagogical technologies in the music educational process as an activity contributes to discovery of individuality of the person, recovery of the students' positive emotional condition, increase of interest in music and the learning activity, ability to orientate in the information space, enrichment of the social experience, and appearance of the interest and personal sense in the music activity and change of the quality of the music educational process, formation of the united esthetical space, education social and cultural environment, coordination and assessment of the learning activity.

References

- Čehlova, Z. (2002). *Izziņas aktivitāte mācībās*. R.: RaKa.
- Schramm, W. (1997). *The Beginnings of Communication Study in America: A Personal Memoir*. Thousand Oaks, CA: Sage.
- Skinner, B. F. (1968). *The Technology of Teaching*. New York: Appleton-Century-Crofts.
- Беспалько, В. П. (1989). *Слагаемые педагогической технологии*. Москва: Педагогика.
- Бороздин, О. А. (2006). Применение музыкально-компьютерных технологий на уроках музыки в общеобразовательной школе. *Музыка в школе*, № 1, с.11.
- Глоссарий терминов по технологии образования* (1986). - Париж, ЮНЕСКО.
- Громова, Е. А. (2017). Педагогические технологии и музыка. *Научное сообщество студентов XXI столетия. Гуманитарные науки: сб. ст. по мат. XXIX междунар. студ. науч.-практ. конф. № 2 (29)*.
- Дистервег, А. (1956). *Избранные педагогические сочинения*. Москва: Учпедгиз.
- Каменский, Ян Амос (1939). *Великая дидактика. Том 1* Государственное Учебно-педагогическое издательство Наркомпроса РСФСР.
- Леонтьев, А. Н. (1975). *Деятельность. Сознание. Личность*. Москва: Политиздат.
- Лобанова, Е. А. (2005). Возможности урока как средство реализации здоровьесберегающих технологий. *Музыка в школе*, № 3.
- Митчелл, Д. (2011). *Эффективные педагогические технологии специального и инклюзивного образования*. Редактор Наталья Барисова, изд. Перспектива.
- Михайленко, Т. М. (2011). Игровые технологии как вид педагогических технологий. *Материалы международной научной конференции*, Челябинск, 140-146.
- Рубинштейн, С. Л. (2017). *Бытие и сознание*. Редактор К. Абульханова – Славская, Издательство: Питер.
- Селевко, Г. К. (2006). *Энциклопедия образовательных технологий: В 2т. Т1. НИИ школьных технологий, (Серия „Энциклопедия образовательных технологий“)*.
- Сластенин, В. А. (2007). *Педагогика: учеб. пособие для студ. высш. учеб. заведений/ В.А. Сластенин, И. Ф. Исаев, Е. Н. Шиянов; под ред. В. А. Сластенина. 7-е изд., стер.* Москва: Издательский центр „Академия”.
- Фохт, Б. А. (1998). *Педагогические идеи Сократа*, № 1 (22), 60-64.

- Шакурова, Н. Ш. (2016). Музыкальная педагогика: от традиции к инновации (некоторые теоретические аспекты). *Журнал Вестник, № 1 (11)*, 71-74.
- Эдвард де Боно (2005). *Серьезное творческое мышление*, издательство Попури, перевод Д. Онацкая.
- Эмерсон, Р. (2015). Сверхдуша. *Журнал Вестник теософии, № 13*.

LIEPĀJAS “JAUNĀS PASAULES” UN TOSMARES EZERA PIEKRASTES MAZSTĀVU DZĪVOJAMĀS APBŪVES UN PLĀNOJUMA ATTĪSTĪBA LĪDZ OTRAJAM PASAULES KARAM

Low-Rise Residential Building and Planning Development of Liepaja “New World” and the Lake Tosmare Shore till World War II

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Abstract. Russian Army Headquarters and Maritime Fleet planned to build a sea and land fortress, and Major General Ivan Alfred McDonald developed a project on August 30, 1892. Near Naval Port and the Lake Tosmare Apparent Heir's Grove and residential buildings with streets were built. Residential buildings were built in “New World” – land between Romny Railway and Grobin Highway. In Liepaja 1922 administrative border plan development was started to include the Lake Liepaja's northern part into the urban territory. Low-rise residential buildings of Aspazija's (former Apparent Heir's) Grove were supplemented. Research issue – building structure and development of residential buildings of Libava Maritime fortress territory has been studied insufficiently. Novelty characteristics – low-rise residential buildings' construction and street network of Apparent Heir's Grove has been analysed. Research goal – analyse “New World” and low-rise residential building and planning of the Lake Tosmare surroundings till World War II. Principal research methods – planning and construction observation in nature, archive and cartographic material analysis. Brief description of research outcomes: fortress built on the Baltic Seacoast affected further development of the territory. Nowadays development of qualitative architectonic space without historical development analysis is impossible.

Keywords: Aspazija's Grove, Emperor Alexander III's Port, Apparent Heir's Grove, residential area of “New World”, Lake Tosmare.

Ievads

Introduction

Krievijā kopš 1818. gada sāka veikt topogrāfiskos uzmērījumus, kuru pamatā ir triangulācijas. Izmantojot šos datus, Ģenerālštāba darbinieki radīja kartes. Vēlāk izveidoja Militārās topogrāfijas departamentu, kuru vadīja ģenerālleitenants, Sankt-Pēterburgā dzimušais zinātnieks-ģeodēzists Fjodors Šuberts (*Фёдор Фёдорович Шуберт*; 1789–1865) – Krievijas Zinātņu

akadēmijas bibliotēkas direktora, izcilā astronoma, akadēmiķa Fjodora Šuberta (*Фёдор Иванович Шуберт*; 1758–1825) vienīgais dēls, kurš līdz vienpadsmit gadu vecumam izglītību ieguva ģimenē. Mācību procesā labākie skolotāji un tēvs īpašu uzmanību pievērta matemātikai un svešvalodu apguvei. Fjodors Šuberts izstrādāja Militāro topogrāfu korpusa noteikumu projektu (1822) un kļuva par jaunizveidotā korpusa pirmo direktoru, bet 1832. gadā – par Ģenerālštāba Militārās topogrāfijas departamenta direktoru un Ģenerālštāba Akadēmijas Padomes locekli, kā arī par Viņa Majestātes imperatora Galvenā Jūras štāba Hidrogrāfiskā departamenta priekšnieku (1827–1837). Vairākās gubernās Šuberts vadīja trigonometriskos un topogrāfiskos darbus, kā arī izdeva "Militārās topogrāfijas departamenta piezīmes" (*Записок Военно-топографического депо*), "Hidrogrāfijas departamenta piezīmes" (*Записок Гидрографического депо*) un topogrāfu galveno palīglīdzekli – "Militārās topogrāfijas departamenta darbu un trigonometrisko uzmērījumu aprēķinu rokasgrāmatu" (*Руководство для исчисления тригонометрической съёмки и работ Военно-топографического депо*).

Militārās topogrāfijas departaments un militāro topogrāfu korpusi no 1818. līdz 1843. gadam mēģināja Krievijas pierobežai radīt detalizētāku militāro karti, taču neizdevās iegūt pietiekami daudz materiāla, tādēļ darbu nepabeidza. Par Militārās topogrāfijas departamenta direktoru 1843. gada 13. decembrī kļuva Šuberta brāļadēls, 1836. gada kara varonis, ģenerālmajors Pāvels Tučkovs (*Павел Алексеевич Тучков*; 1803–1864), un līdz 1845. gada sākumam secināja, ka karte, kurā nebija iespējams uzrādīt reljefa topogrāfiskās detaļas, neatbilst militārajām vajadzībām. Tučkova vadībā militārie topogrāfi 1845. gada 2. aprīlī sāka veidot jaunu Krievijas rietumdaļas militāri topogrāfisko karti, un kopš 1846. gada veica topogrāfiskos apsekojumus, kurus turpināja 19. gs. otrajā pusē, bet, lai kartogrāfisko materiālu atjaunotu, teritoriju izpēti pabeidza 20. gs. sākumā. Izmaiņas galvenokārt attiecās uz dzelzceļa trašu attēlojumu un apdzīvotu vietu nosaukumu maiņu. Jaunajā kartē, kas aptvēra visas Krievijas rietumdaļas provinces, izņemot Maskavas, norādīja visus objektus, kurus izvēlētajā mērogā bija iespējams attēlot: lielākajām pilsētām izstrādāja ielu shēmu, dažreiz parādīja arī atsevišķas ēkas. Kartē iezīmēja mežus, purvus, strautus, laukus, krūmus, pilskalnus, atsevišķas ēkas, tiltus, dažādus krustojumus, dzirnavas un citus īpašus objektus, lielceļus un nelielus celiņus, izņemot takas mežā.

Krievijas rietumdaļas trīsverstu militāri topogrāfiskā karte aptvēra Krievijas, Ukrainas, Baltkrievijas, Moldovas, Igaunijas, Lietuvas un Latvijas teritoriju, tajā skaitā arī 1846.–1863. gadu Libavas (mūsdienu Liepājas) apkārtni (1. att.), kur Vērniekupīte saistīja Liepājas un Tosmares ezerus, bet Liepājas ezera ziemeļaustrumu pusē ietek Ālandes upe. Iespējams, ka Tosmares nosaukums ietver senu vārdu – *mare* – jūra, bet pirmās zilbes pamatā ir vācu vārds *tossen* – bangojošs, vētrains. Iekšzemē līdz Tosmares ezeram, ko uzskata par senās

Litorīnas jūras jomu, bija krūmiem aizauguši purvi. No Libavas pa jūras piekrasti ziemeļu virzienā veda ceļš, bet pasta karieses no Mītavas (tagad Jelgavas) regulārai satiksmei izmantoja ārkārtīgi slikto ceļu, kas saistīja Libavas un Grobiņas pilsētas, bet kuru neviens nelaboja. Krievijas imperators Aleksandrs I, braucot cauri Grobiņai, 1808. gada 13. oktobrī ieradās Libavā, kur 19. gadsimtā sākās strauja attīstība. Ceļa tuvumā bija slavens krogs ar nosaukumu "Neue Welt" jeb "Jaunā Pasaule", kas atrodams jau 1838. gada kartēs, bet apdzīvota vieta vēl nebija: tā datēta ar 1908. gadu un oficiāli minēta kalendārā. Lēmumu par lielceļa būvniecību pieņēma 1840. gadā, un šo lielo darbu atbalstīja imperators Nikolajs I. Grobiņas–Libavas lielceļa pirmās piecas verstis 1841. gada 23. septembrī atklāja ar lielām svinībām "Jaunās Pasaules" krogā, kura turpmākais liktenis nav zināms (Pastore, 2002). No Libavas–Grobiņas lielceļa ziemeļu virzienā celiņš veda uz "Jukšu" un "Vērnieku" mājām Vērniekupītes austrumkrastā. Tosmares ezera dienvidu piekrastē bija dumbrāji.



1. att. Libavas apkārtnē 1846.–1863. gadā; dzelzceļa Libava–Romni trase attēlota 1873. gadā, šaursliežu dzelzceļš – 1903. gadā. Plāns drukāts 1915. gada augustā (KNB)
Fig. 1. Libau and its surroundings from 1846 to 1863; railway track depicted in 1873, narrow gauge railway in 1903. Plan printed in August, 1915

Libavā 1871. gadā no Dinaburgas (tagad Daugavpils) ieradās Pauls Makss Berči (*Paul Max Bertschy*; 1840–1911) un kļuva par pilsētas arhitektu, kura vadībā jaunatklātajai dzelzceļa līnijai no Libavas līdz Kaišadoriem uzbūvēja

Libavas dzelzceļa pasažieru stacijas ēku. Sliežu ceļš caur Mažeikiem, Mītavu un Rīgu 1873. gadā radīja dzelzceļa pieslēgumu Pēterburgas–Dinaburgu–Varšavas dzelzceļa līnijai un veicināja tirdzniecības sakarus ar Krieviju, Lietuvu un Poliju. Libavā ieradās tirgotāji, bet rūpnieki un amatnieki dibināja fabrikas. Libavas ostas padziļināšanai 1875. gadā izstrādāja projektu, paredzot izbūvēt Ziemas ostu un viļņlaužus ar divām gaismas signālu bākām galos, pagarināt molus, izvēršot to galus paplašinātai ieejai kanālā. Dzelzceļu no Libavas 1876. gadā pagarināja līdz Romniem Poltavas gubernā, un tika veicināta pilsētas attīstība uz ziemeļiem no ostas un dzelzceļa tuvumā. Liepājas Vēstures muzeja Berči fonda divās Jaunliepājas apbūves plānojuma skicēs bez datējuma un autora paraksta, kuras, visticamāk, izstrādāja arhitekts P. M. Berči, rādīts fabriku, dzīvojamās apbūves un atpūtas zonu izvietojums un ielu virzieni, bet sliežu ceļa loks no ostas līdz dzelzceļa pasažieru stacijai aptvēra rūpnīcu un dzīvojamās apbūves teritoriju. Viens dzelzceļa pievada atzars rietumu virzienā veda uz dzelzceļa pasažieru staciju, Ziemas ostu un kanāla ziemeļrietumu piekrasti, bet otru atzaru un preču staciju izbūvēja Liepājas ezera rietumu piekrastē. Jaunliepājā 19. gs. nogalē plānveidīgi attīstīja rūpnīcu un strādnieku dzīvojamo ēku apbūvi.

Eiropā pilsētu attīstību aizkavēja Balkānu karš (1877–1878), bet Libavā uzsāka ostas izbūves otro periodu. Krievijas impērijas Jūras ministrijā 1881. gada decembrī apsprieda kuģubūves plānu 25 gadiem un norādīja uz nepieciešamību Baltijā ierīkot neaizsalstošu ostu, kur varētu uzturēties 12 bruņkuģi, 20 kreiseri un 40 mīnkuģi. Šim nolūkam vispiemērotākā bija Libava, no kuras sliežu ceļi veda uz pierobežas cietokšņiem, kurus uzbrukuma gadījumā nepieciešams piesegt. Pirmo reizi izskanēja ideja par tirdzniecības ostas pārcelšanu uz Vindavu (tagad Ventspili), lai Libavas ostu pilnībā atstātu armijas ziņā. Sākās vispārējā ekonomiskā krīze (1881–1882), un tai sekoja depresija (1883–1886).

Krievija un Vācija 1887. gadā noslēdza līgumu, bet abas puses nebija apmierinātas. Kanclers Otto fon Bismarks (*Otto von Bismarck*; 1815–1898) centās radīt apstākļus Krievijas finanšu sistēmas sabrukumam, un rudenī labībai no Krievijas par 70 % paaugstināja muitu. Krievija daudzkārt palielināja muitas nodokli eksportprecēm no Vācijas. Ietekmīgi krievu rūpnieki, finansisti, aristokrātijas un muižniecības pārstāvji iestājās pret valdības īstenoto politiku, bet pret Vāciju vērstās sabiedriskās domas noskaņojumā ļoti nozīmīga bija Krievijas armijas ģenerālštāba priekšnieka Nikolaja Obručeva (*Николай Обручев*; 1830–1904) un admirāļa Stepana Makarova (*Степан Макаров*; 1849–1904) nostāja. Libavā 1888. gadā beidza rekonstruēt un paplašināt Krievijas impērijā trešo nozīmīgāko ostu, un 1888. gada 4. aprīlī stājās spēkā Domēņu ministrijas sagatavotais Mežu aizsardzības likums. Krievijas imperators (1881–1894) Aleksandrs III (*Александр III*) 1890. gada 15. janvārī parakstīja pavēli par Libavas jūras cietokšņa celtniecību (*Указ о строительстве Либавской военно-морской крепости*), veicinot Tosmares ezera piekrastes attīstību.

Tēmas aktualitāte – Tosmares ezera apkaimes funkcionālai izmantošanai mūsdienās izstrādā projektus, neiedziļinoties teritoriālā plānojuma un apbūves attīstības vēsturē un neņemot vērā nozīmīgus inženiertehniskos risinājumus, lai mitrajā apkārtņē būtu iespējams nodrošināt harmonisku vides un apbūves attīstību. Pētījuma mērķis – apsekojot dabas vidi un ēkas un izpētot kartogrāfiskos un arhīvu materiālus, ar salīdzināšanas metodes palīdzību analizēt Tosmares ezera piekrastē apbūvi un teritoriālo plānojumu, kas radīts līdz Otrajam pasaules karam.

Troņmantnieka birzes un “Jaunās Pasaules” mazstāvu dzīvojamo ēku apbūves izveide

Establishment of the grove Troņmantnieka birze (Apparent Heir's Grove) and a low-rise residential housing development in the district Jaunā Pasaule

Krievijas armijas Ģenerālštāba un Jūras kara flotes pavēlniecība iecerēja Libavā izveidot jūras un sauszemes cietoksni, lai izvietotu Baltijas jūras galveno floti, kas atradās Kronštātē (*Кронштадт*). Vācu armijas Ģenerālštāba Libavas apkārtnes 1889. gada topogrāfiskajā kartē (2. att.), kas pēdējo reizi koriģēta 1911. gadā, Tosmares ezera dienviddaļas purvainajā apvidū uz reljefa pacēluma netālu no tilta pāri Vērniekupītei rādītas “Vērnieku” mājas.



2. att. Vācu armijas Ģenerālštāba 1889. gada topogrāfiskās kartes fragments ar Libavas apkārtni, jūras piekrastes ceļa un Libavas–Romnu dzelzceļa trasi (LVVA-1)

Fig. 2. Fragment of German Army Headquarters' topographical map in 1889 with of Libau surroundings, seacoast road and Libau–Romny railway track

Ozola, 2018. Liepājas “Jaunās pasaules” un Tosmares ezera piekrastes mazstāvu dzīvojamās apbūves un plānojuma attīstība līdz otrajam pasaules karam

Projekta autors, ģenerālmajors, augstas klases kara inženieris Ivans Alfrēds Mak-Donalds (*Иван-Альфред Георгиевич Макдональд*; 1850–1906) 1890. gada 19. janvārī sāka vadīt būvdarbus un modernizēt Libavas ostu, lai gan pavēli diplomātisku apsvērumu dēļ publicēja tikai 1894. gada 6. decembrī, kad būvdarbi ostā jau bija plaši izvērsti. Libavā ar kreiseri „Āzija” 18. maijā ieradās Jūras ministrijas pārvaldnieks, viceadmirālis (kopš 1892. gada – admirālis) Nikolajs Čihačevs (*Никола́й Матвее́вич Чихачёв*; 1830–1917) un svinīgi atklāja betona rūpnīcu. Jūras un kara resoru augstākie ierēdņi Sankt-Pēterburgā 1892. gada 13. maijā speciālā apspriedē izskatīja Libavas nocietinājumu projektu un nedaudz mainīja struktūru: jūrā pie priekšostas ziemeļu vārtiem nolēma izveidot uzbēruma fortu, bet starp ezeriem – vēl vienu, papildinātu ar astoņām krasta baterijām, kuras apjoza ar ūdeni piepildīts aizsargkanāls. No pilsētas uz ziemeļiem un dienvidiem nostiprināja satekas, kas abus ezerus atdalīja no jūras. Izmainītais projekts 1892. gada 30. augustā guva visaugstāko apstiprinājumu.



3. att. Siliņš M. Plāna fragments ar Liepājas ziemeļdaļas apkaimes topogrāfiju un plānojumu starp Liepājas un Tosmares ezeriem, Libavas–Romnu dzelzceļa un Grobiņas lielceļa trasējumu. Cenzūras skatīts 1893. gada 19. oktobrī (Siliņš)

Fig. 3. Siliņš M. Fragment of the topographical map of Liepāja northern part surroundings and planning between Lakes Liepāja and Tosmare, Libau–Romny railway and Grobiņa highway trace. Censored on October 19, 1893



4. att. Troņmantnieka birzes paviljons. 1910 (Gruss)
Fig. 4. Pavillion of Apparent Heir's Grove. 1910



5. att. Atpūtas vieta Troņmantnieka birzī (LM-1)
Fig. 5. Recreation place in Apparent Heir's Grove

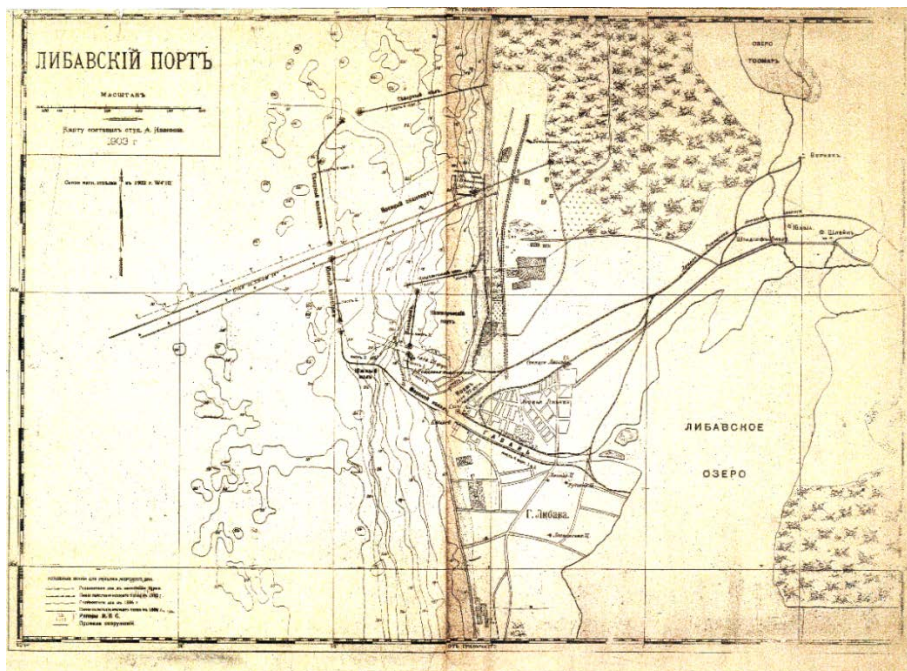


6. att. Troņmantnieka birzes paviljons ap 1908. gadu (LM-2)

Fig. 6. Pavillion of Apparent Heir's Grove around 1908

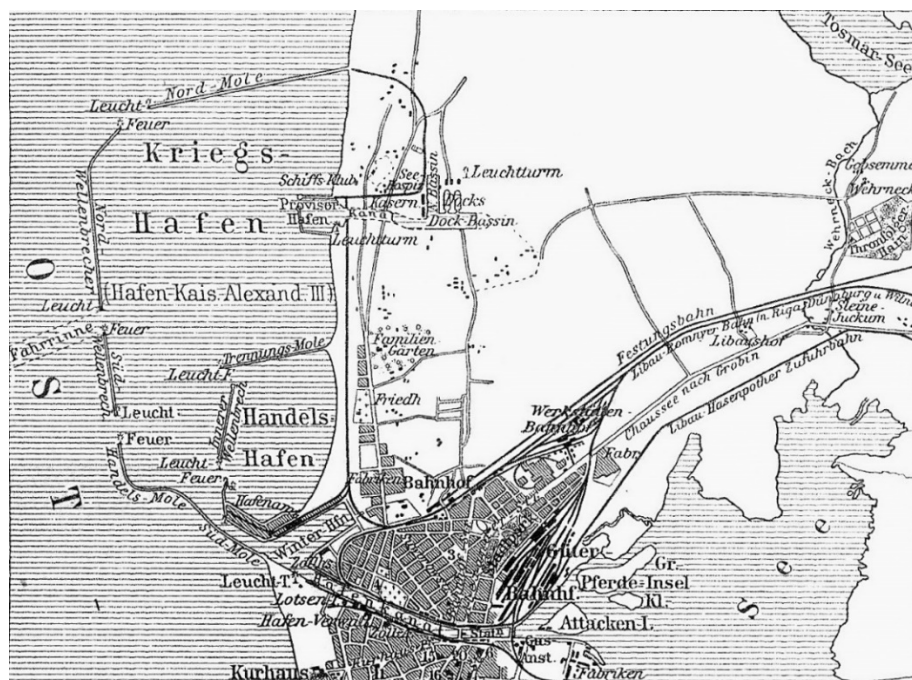
Karostas pilsētiņai izstrādāja projektu, un 1893. gada pavasarī pulkveža Dmitrija Bubnova (*Бубнов Дмитрий Иванович*; 1854–1899) vadībā Baltijas jūras piekrastē uz ziemeļiem no pilsētas 375 metru platā joslā izcirta mežu. Smilšainajā klajumā līdz Tosmares ezera rietumkrastam iemērīja teritoriju militārai ostai un Karostas pilsētiņai, kuru uzbūvēja no 1893. līdz 1906. gadam. Mak-Donalds 1893. gada novembrī ziņoja, ka priekšostas būvniecība ir pabeigta. Uz Karostu veda ceļš no Jaunliepājas galvenās maģistrāles – Suvorova (tagad Raiņa) ielas noslēguma. Pie Libavas–Grobiņas lielceļa atzara uz “Vērnietu” un “Gobzemju” mājām Vērnietkupītes austrumkrastā pirms tilta uzcēla Troņmantnieka paviljonu (3. att.) un ierīkoja atpūtas vietu (4., 5., 6. att.). Uz “Vērnietiem” veda divi Libavas–Grobiņas lielceļa atzari.

Ostas inženieri 1894. gada 4. janvārī nosprauda pilsētiņas pirmo rajonu – admirālitāti. Ģenerāļi uzskatīja, ka Libavai vairs nav būtiskas militāras nozīmes, tomēr Aleksandrs III 1894. gada maijā darbnīcu kompleksu un militāro ostu apstiprināja izbūvei, un pēc imperatora rīkojuma no 1894. līdz 1908. gadam pilsētas aizsardzībai izveidoja plašu nocietinājumu sistēmu. Slaidā lokā uz dienvidiem vajadzēja radīt ostas kanālu ar 128 m platu ūdensvirsmu un 64 m platu pamatni, taču zem smilšu slāņa cietās plātnes dēļ veica izmaiņas. Štāba kapteinis Nikolajs Korsakevičs (*Николай Георгиевич Корсакевич*; 1857–?), saskaņojis darbību ar Jūras ministriju, nedaudz mainīja kanāla virzienu (7. att.). Dokiem un darbnīcām (vēlāk kuģu remonta rūpnīca) izvēlējās būvvieta vairāk uz dienvidiem. Izveidoja kanālu un divus baseinus. Pēc imperatora nāves militārā osta 1894. gada 20. oktobrī ieguva nosaukumu – „Imperatora Aleksandra III osta” (8. att.). Uz apbūvējamo teritoriju 1898. gadā ierīkoja sliežu ceļu un līdz vasarai izbūvēja Karostas kanālu.



7. att. Ivaņina A. Libavas ostas plāns ar Libavas–Romnu dzelzceļa trasi. Sastādīts 1903. gadā (LPCZB)

Fig. 7. Port plan by Ivanina with Libau–Romny railway trace. Compiled in 1903



8. att. Libavas ostas un apkaimes plāns ar Troņmantnieka birzi, Grobiņas lielceļa, Libavas–Romnu dzelzceļa un Libavas–Aizputes šaursliežu dzelzceļa trasējumu. 1908 (Lageplan)

Fig. 8. Plan of Libau Port and its surroundings with Apparent Heir's Grove, Grobiņa Highway, trace of Libau–Romny Railway and Libau–Aizpute Narrow Gauge Railway. 1908

Celtniecības pirmās kārtas objektus – darbnīcas un cehus uzbūvēja 1900. gada sākumā, un jūnijā pēc civilinženiera, arhitekta no Sankt-Pēterburgas Vasilija Kosjakova (*Василий Антонович Косяков*; 1862–1921) 1899. gadā izstrādāta projekta sāka Karostā celt katedrāli. Jauno uzņēmumu 14. novembrī svinīgi nodeva ekspluatācijā, un 1902. gadā apstiprināja darbu plānu turpmākajai desmitgadei no 1904. līdz 1914. gadam.

No Karostai iemērītās teritorijas austrumu virzienā veda ceļš un šķērsoja Vērniekupīti, bet pie “Vērnikiem” pieslēdzās Libavas–Grobiņas lielceļa atzaram. Pie krustcelēm Troņmantnieka birzes (*Thronfolger-Hain*) rietumpusē ap 1903. gadu bija ierīkots apbūves kvartāls (8. att.) ar četrām (kopš 1934. gada 20. septembra Lēņu, Grīzupes, Labraga un Ēdoles) ielām (9. att.). Pilsētas apkārtnē Libavas cietokšņa izbūves vajadzībām pārņēma privātas zemes un 1904.–1905. gadā iznīcināja daudzas zemnieku saimniecības.



9. att. **Libavas plāna papildus kartes fragments ar cietokšņa zemēm, sliežu ceļu un Troņmantnieka birzi ap 1903. gadu** (Farus)

Fig. 9. Additional map fragment of Libau plan with lands of fortress, narrow gauge railway and Apparent Heir's Grove around 1903

Zemesjoslā starp ceļu uz Grobiņu un Libavas–Romnu dzelzceļu izveidoja “Jaunās Pasaules” jeb “Jaunpasaules” mazstāvu dzīvojamo apbūvi (10. att.), kur 1914. gadā ēka Nr. 1 piederēja Čemevskim, Nr. 1a – Rimševičam, Nr. 2 – Dollingeram, Nr. 2a – Matutim, Nr. 3 – Oršanskim, Nr. 4 – Jagminam, Nr. 5 – Bukovskim, Nr. 6 – Skubem, Nr. 7 – Galinam, Nr. 8 – Volkovskim, Nr. 9 – Buhovam, Nr. 10 – Dārzem, Nr. 11 – Surgunam, Nr. 12 – Andušam, Nr. 13 – Surgunam, Nr. 14 – Libekam, Nr. 15 – Vallem, Nr. 16 – Orbem, Nr. 17 – Pelcmanim, Nr. 18 – Grenčmanim, Nr. 19 – Lebellam, Nr. 20 – Iršikovičam, Nr. 22 – Šalmem, Nr. 24 – Ukstiņam, Nr. 26 un 28 Nepomnjačim, Nr. 30 – Petrevicam, Nr. 32 – Treilibam (Latviešu, 1913: 29).



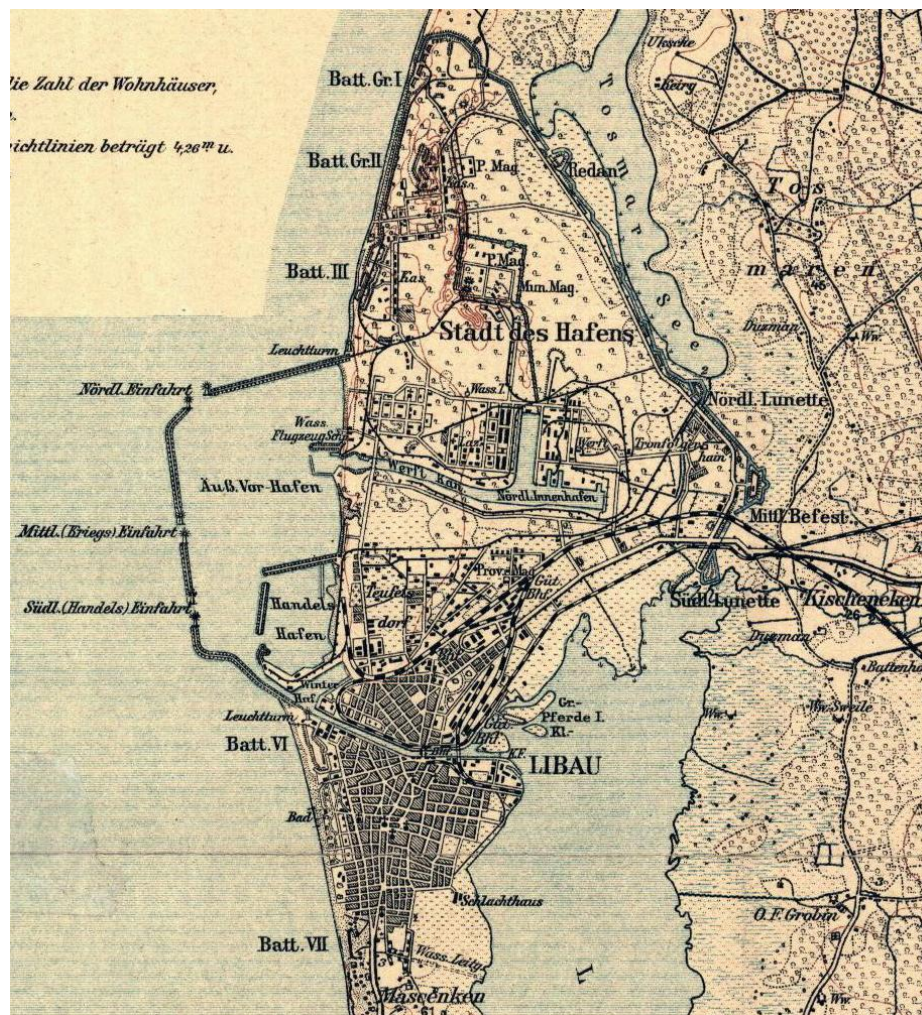
10. att. Libavas plāna fragments ar aizsargkanālam un cietoksnim iemērītām zemēm, Libavas dzelzceļa pasažieru staciju, Grobiņas lielceļa, Libavas–Romnu dzelzceļa un Libavas–Aizputes šaursliežu dzelzceļa trasējumu, Troņmantnieka birzes un “Jaunās Pasaules” ēku kvartāliem. 1903 (LNB-1)

Fig. 10. Fragment of Libau plan with allocated lands for canal and fortress, Libau Railway Passengers' Station, Grobiņa Highway, trace of Libau–Romny Railway and Libau–Aizpute Narrow Gauge Railway, blocks of Apparent Heir's Grove and “New World” building. 1903

Uz ziemeļiem piekrastes joslā starp Tosmares ezeru un jūru izveidoja Redana fortu (11. att.), bet nocietinājumu sistēmas centrālajā daļā starp Liepājas un Tosmares ezeru atradās Ziemeļu jeb Grīzupes, Vidus un Dienvidu forti (vācu: *Lunette*), lai sargātu ceļu uz Grobiņu. No Tosmares ezera uz rietumiem daļēji pa bijušās noteces Melnupītes gultni izraka cietokšņa apvadkanālu ap fortiem, bet no Liepājas ezera uz ziemeļiem pa nocietinājumu iekšējo perimetru līdz vistālākai baterijai Nr. 1 izveidoja ceļu (tagad 14. novembra bulvāris), kas sākas netālu no Libavas–Grobiņas lielceļa atzara uz “Vērnieku” mājām, no kurām Libavas cietokšņa austrumdaļā Tosmares ezera dienvidu piekrastē zemesgabalos starp ceļu un Vērniekupīti pie Troņmantnieka birzes attīstīja apbūvi (11. att.). Vidus un Dienvidu fortu apkaimē Libavas–Romnu un Libavas–Rīgas sliežu ceļu krustojumu šķērsoja Libavas–Grobiņas–Rīgas lielceļš, bet šaursliežu dzelzceļš veda uz Aizputi. Izveidojās komplicēts transporta mezgls, no kura dienvidu virzienā veda ceļa atzars (11. att.). Kuģu izvietošanai vajadzēja izrakt vēl vienu baseinu, uzcelt darbnīcas, noliktavas, un pie nocietinājumiem starp Ziemeļu un

Ozola, 2018. Liepājas “Jaunās pasaules” un Tosmares ezera piekrastes mazstāvu dzīvojamās apbūves un plānojuma attīstība līdz otrajam pasaules karam

Vidus fortu attīstīja dzīvojamo apbūvi (11. att.), taču 1907. gada 27. jūnijā izdeva pavēli likvidēt Libavai cietokšņa statusu. Nākamajā gadā pavēli īstenoja. Libavas cietoksni un jūras kara bāzi formāli likvidēja, aizsargbūves daļēji uzspidzināja.



11. att. Plāna fragments ar Libavu, nocietinājumiem un ceļu (tagad 14. novembra bulvāra), Troņmantnieka birzi, Grobiņas lielceļa, Libavas–Romnu un Libavas–Aizputes dzelzceļa līniju trasējumu. 1916 (LVVA-2)

Fig. 11. Plan fragment with Libau, fortifications and road (now November 14 Avenue), Apparent Heir's Grove, Grobiņa way, trace of Libau–Romny and Libau–Aizpute railway.

Ziemeļu priekšpilsētā nozīmīga bija Krūmu iela (1907), bet pēc dzelzceļa līnijas Maskava–Vindava–Ribinska atklāšanas 1912. gadā modernizētā Vindavas osta ieguva pieslēgumu Krievijas impērijas sliežu ceļu tīklam, un Troņmantnieka birzes rietumpusē izbūvēts dzelzceļa atzars no Vindavas uz Libavu veidoja saikni ar Libavas–Rīgas dzelzceļa līniju, „Imperatora Aleksandra III ostu” un Libavas Tirdzniecības ostu. Troņmantnieka birzes ziemeļdaļā pie ceļa un dzelzceļa krustojuma iedalīja zemesgabalus mazstāvu apbūvei un izveidoja ielas (11. att.).

**Aspazijas birzes un “Jaunās Pasaules” mazstāvu dzīvojamo ēku apbūves
attīstība Latvijas Republikas laikā**
*The Grove of Aspazija and the development of the low-rise residential housing
development in the district Jaunā Pasaule during the Republic of Latvia*

Pēc Pirmā pasaules kara pilsētās samazinājās iedzīvotāju skaits, jo trūka dzīvokļu. Latvijas Republikā aktuāla kļuva lētu mājokļu masveida būvniecība, izmantojot vietējos materiālus, un kopš 1920. gada valstī atbalstīja viengimenes dzīvojamo māju celtniecību: mazstāvu apbūve bija higiēniski augstvērtīgāka par slēgtu kvartālu apbūvi, taču, risinot dzīvokļu jautājumu, radās dedzīgi aizstāvji daudzstāvu apbūvei, kas bija ekonomiskāka un veicināja būvmateriālu ražošanu, celtniecības tehnikas un būvuzņēmumu attīstību. Mainoties tautsaimniecības struktūrai, problēmas sagādāja jaunu apdzīvotu vietu veidošana un pilsētu funkcionālā akcenta maiņa, iedzīvotāju apgāde ar dzeramo ūdeni, sistemātiskas kanalizācijas ierīkošana. Ikvienas pilsētas pašpārvaldei bija jā rūpējas par ģenerālplāna izstrādāšanu, un Zemkopības ministrijā izveidoja pilsētībūvniecības biroju apbūves projektu izstrādei.

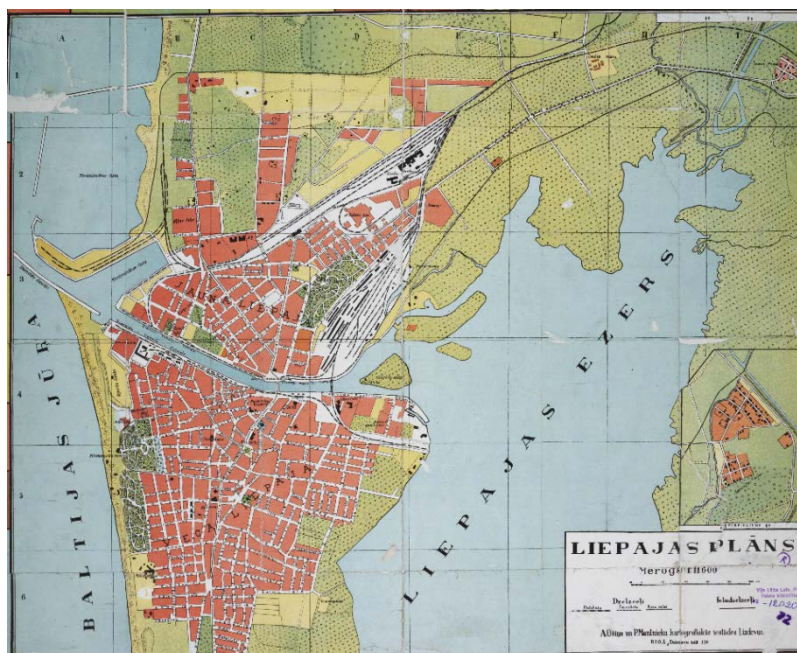
Latvijas Republikā jaunajos politiskajos un sociālekonomiskajos apstākļos pilsētu celtniecībā izvirzīja uzdevumu: atrisināt dzīvokļa jautājumu. Satversmes sapulce 1920. gada 16. septembrī pieņēma lēmumu „Par agrāro reformu Latvijas Republikā” un Agrārreformas likuma 1. daļu "Par Valsts zemes fonda nodibināšanu", lai nacionalizētu muižas, mācītājmuižas, pusmauižas, lauku saimniecības un atsevišķus zemes gabalus. Pilsētu apbūvei ierādīja jaunas zemes un kopš 1920. gada valstī veicināja mazstāvu dzīvojamo ēku celtniecību. Tautsaimniecības struktūrai mainoties, izveidoja jaunus administratīvos centrus un satiksmes mezglus, bet 1922. gada 15. februārī pieņēma Latvijas Republikas Satversmi, un 1923. gadā – vispārējus noteikumus par valsts, sabiedrisko un rūpniecības ēku projektu izstrādāšanu, lai Latvijas Republikā nodrošinātu racionālu un plānveida celtniecības politiku.

Liepājā pēc cietokšņa likvidācijas 1908. gadā nocietinājumu izbūvei zeme vairs nebija vajadzīga, tādēļ kopš 1918. gada to iznomāja zemniekiem, lai viņi iztikai varētu turēt lopus. Daudziem zemniekiem saimniecību ierīkošanai bija nepieciešams inventārs, taču viņu īpašumā nebija zeme. Uzsākot agrāro reformu, zemnieki lūdza atdot viņiem atsavināto zemi. Liepājā iecerēja paplašināt brīvostas teritoriju, un 1922. gadā sāka izstrādāt administratīvo robežu plānu, lai pilsētas teritorijā ietvertu arī Liepājas ezera ziemeļdaļu un austrumu piekrasti.

Pilsētnieku iecienīto atpūtas vietu Troņmantinieka jeb Ķeizara birzi 1920.–1930. gados dēvēja par Aspazijas Birzi (13. att.), un teritorijā starp Rīgas un Ventspils dzelzceļu iecerēja papildināt ielu trasējumu un mazstāvu dzīvojamo apbūvi, iedalot zemesgabalus ēku būvniecībai arī birzes dienviddaļā (13. att.). “Jaunpasaulē” vairākām privātmājām mainījās īpašnieki, un 1927. gadā ēka Nr. 1

Ozola, 2018. *Liepājas “Jaunās pasaules” un Tosmares ezera piekrastes mazstāvu dzīvojamās apbūves un plānojuma attīstība līdz otrajam pasaules karam*

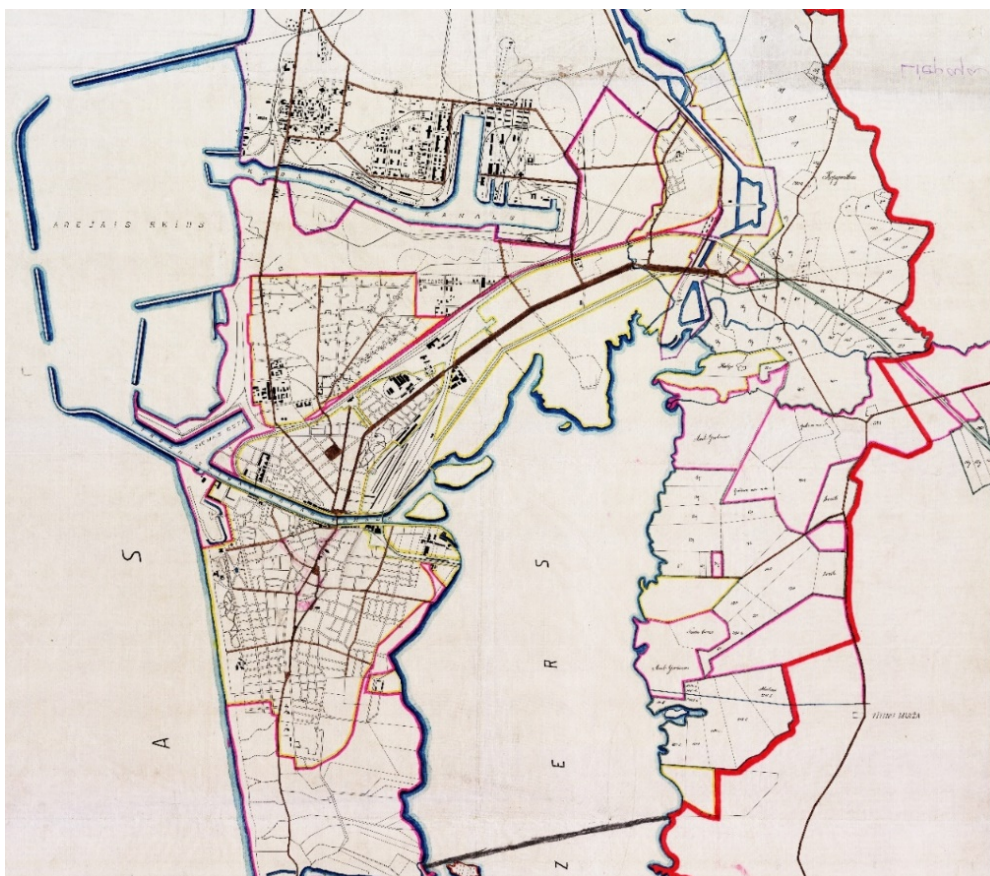
piederēja Čemevskim, Nr. 1a – Rimševičam, Nr. 2 – Penkem, Nr. 2a – Matutim, Nr. 3 – Oršanskim, Nr. 4 – Jagmiņam, Nr. 5 – G. Šlišusam, Nr. 6 – Skubem, Nr. 7 – Galiņam, Nr. 8 – Volkovskim, Nr. 9 – Buhhofam, Nr. 10 – Dārzem, Nr. 11 Surgunam, Nr. 12 – Andušam, Nr. 13 Surgunam, Nr. 14 – Libekam, Nr. 15 – Vallem, Nr. 16 – Orbem, Nr. 17 Pelcmanim, Nr. 18 – Grenčmanim, Nr. 19 – Lebelam, Nr. 20 – Iršikovičam, Nr. 22 – Šalmem, Nr. 24 – Ukstiņam, Nr. 26 un 28 – Nepomnjačim, Nr. 30 – Petrevicam, Nr. 32 Treilibam (Jaunais, 1926: 64).



13. att. Liepājas pilsētas un apkārtnes plāns ar “Jaunpasaules” un Aspazijas birzes dzīvojamo ēku kvartāliem. 1920-ie gadi (Liepājas plāns)

Fig. 13. Plan of Liepaja City and its surroundings with residential building blocks of “New World” and Aspazija Grove. 1920s

Liepājas administratīvo robežu plānā (14. att.) norādīja pilsētas, Valsts fonda, dzelzceļu, Aizsardzības Ministrijas, Pērkones un Grobiņas pagastu zemes un galvenos transporta kustību virzienus. Latvijas Republikā 1927. gada 9. jūlijā stājās spēkā „Likums par būvniecības pārzināšanu”, bet „Pilsētu zemju likums”, kuru pieņēma 1928. gada 22. martā, radīja nepieciešamību precīzi fiksēt pilsētu robežas. Pieļaut kļūdas nedrīkstēja, jo trūkumu izlabošana varēja būt neiespējama. Valstī 1928. gada 3. septembrī pieņēma „Noteikumus pilsētu apbūves un izbūves plānu izstrādāšanai un izstrādāšanas kārtībai”. Ņemot vērā vietējos apstākļus, ikvienai pilsētai izstrādāja teritoriju funkcionālo zonējumu ar precīzu robežu aprakstu un būvnoteikumus, kurus regulāri papildināja un koriģēja, lai regulētu apbūvi un nodrošinātu plānveida pilsēt būvniecisko disciplīnu. Celtņu tipu un atsevišķu ēku daļu izveidojumam 1920.–1930. gadu mijā izstrādāja noteikumus.



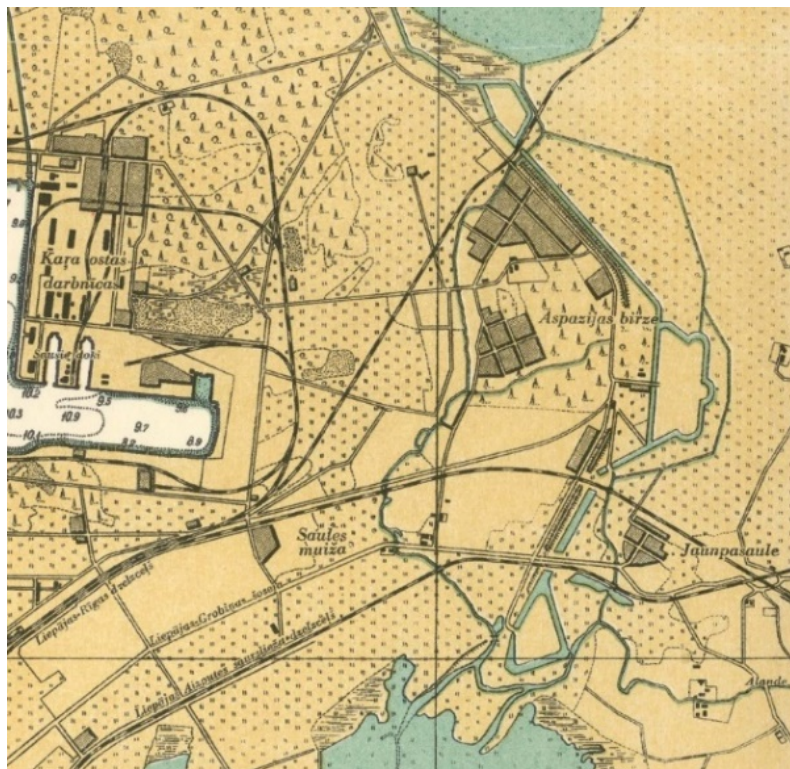
14. att. Liepājas pilsētas 1925. gada administratīvo robežu plāna fragments ar
"Jaunpasaulis" teritoriju. (LVVA-3)

Fig. 14. Fragment of 1925 administrative border plan of Liepāja with "New World" territory

Liepājas Ziemeļu priekšpilsētā 1933. gadā uzcēla cukurfabriku (arh. Kārlis Bikše; 1887–1955), un tās apkaimē būvēja viengimeņu ēkas un attīstīja ielu tīklu. No Karostas darbnīcām un cukurfabrikas austrumu virzienā veda Grīzupes iela, bet tai paralēlā Lēņu iela ziemeļpusē norobežoja Aspazijas birzes apbūves kvartālu, kuru ziemeļ–dienvidu virzienā šķērsoja Labraga un Ēdoles ielas. Aspazijas birzes ziemeļdaļā dzelzceļu krustoja 14. novembra iela (kopš 1934. gada – 14. novembra bulvāris, Uzvaras bulvāris no 1942. gada, Tankistu iela no 1948. gada) un mazstāvu apbūvi attīstīja uz austrumiem ap bijušo ceļu uz "Vērnikiem" – Talsu ielu, kuru krustoja Kazdangas un Cīravas ielas, bet uz rietumiem atzarojās Dundagas iela (15. un 16. att.). Perspektīvai apbūvei (17. att.) un jaunu ielu izveidei izstrādāja projektu, lai mazstāvu ēkas izvietotu arī uz ziemeļiem no Grīzupes ielas un uz rietumiem no Vērniekupītes, Liepājas–Ventspils dzelzceļa abās pusēs un ap Alsungas un tai paralēlo Kuldīgas un Ploču ielu, kā arī ap Grīzupes ielai paralēlām Skrundas un Durbes ielām. Trīsstūrveida teritorijā starp Grīzupes, Kuldīgas un Vērgales ielām paredzēja ierīkot laukumu

Ozola, 2018. Liepājas “Jaunās pasaules” un Tosmares ezera piekrastes mazstāvu dzīvojamās apbūves un plānojuma attīstība līdz otrajam pasaules karam

tirdzniecībai. Mazstāvu ēku teritoriju dienviddaļā norobežoja Sūkņu iela. Aspazijas birzes tuvumā 1934. gada 20. septembrī ielām piešķīra Alsungas, Cīravas, Dundagas, Durbes, Ēdoles, Grīzupes, Kazdangas, Kuldīgas, Labraga, Lēņu, Ploču, Skrundas, Sūkņu, Vērgales un Talsu nosaukumus. Tosmarē izveidoja Cukura ielu, bet “Jaunpasaules” apbūves kvartālos (17. att.) Liepājas–Grobiņas lielceļa atzaru uz “Vērnikiem” kopš 1934. gada 20. septembra sauca par Sabiles ielu, to krustoja Abavas iela, bet noslēdza Rendas iela, no kuras celiņš veda dzelzceļa virzienā. Aspazijas birzes un “Jaunās Pasaules” dzīvojamo kvartālu tuvumā izveidojās sarežģīts transporta mezgls. Gruntsūdens līmeņa regulēšanai 1930. gados ierīkoja polderus. Pēc “paraugplāniem” celtās ēkas 1930. gadu nogalē aizstāja individuāli projektēti nami. Pilsētās plānojuma struktūrā iekļāva rindu ēkas ar izgaismotiem un labi vēdināmiem dzīvokļiem, samazinot celtniecības izmaksas un veicinot ēku tipizāciju. Latvijas Republikā 1940. gada 17. jūnijā ienāca padomju karaspēks un 21. jūlijā atjaunoja padomju varu, bet 5. augustā Latviju iekļāva Padomju Sociālistisko Republiku Savienībā. Uzsāka īpašumu nacionalizāciju.



15. att. Liepājas piekrastes plāna fragments ar Aspazijas birzes un “Jaunpasaules” apbūves kvartāliem, Grobiņas ceļa un dzelzceļa trasējumu. 1931 (Liepājas piekraste)
Fig. 15. Fragment of Liepāja plan with building blocks of Aspazija Grove and “New World”, trace of Grobiņa Highway and railway line. 1931



16. att. Liepājas plāna fragments ar Aspazijas birzes un “Jaunpasaulē” apbūves kvartāliem cieši pie pilsētas robežas (LVVA-4)

Fig. 16. Fragment of Liepāja plan with building blocks of Aspazija Grove and “New World” close to the city border



17. att. Liepājas pilsētas inženieris Jirgensons, Liepājas pilsētas valdes Mērniecības nodaļas vadītājs, valsts zvērināts mērnieks Vilis Cepelevičs. Liepājas pilsētas administratīvo robežu projekta plāna fragments ar Aspazijas birzes un “Jaunpasaulē” apbūves kvartāliem. 1933 (LVVA-5)

Fig. 17. Liepāja City engineer Jirgensons, Head of Liepāja City Board Land Surveying Department, national sworn surveyor Vilis Cepelevičs. Fragment of Liepāja City administrative border project plan with Aspazija Grove and “New World” building quarter.

Secinājumi **Conclusions**

1. Mazstāvu dzīvojamās apbūves kvartālu Troņmantinieka birzes apkaimē ierīkoja Karostas, nocietinājumu un cietokšņa apvadkanāla izveides vajadzībām. Cietokšņa apvadkanāls veica Tosmares ezera piekrastes mitro zemju drenāžu un radija iespējas būvdarbu laikā uzbūrtajās teritorijās attīstīt dzīvojamo apbūvi, galvenokārt pēc cietokšņa likvidācijas un Libavas–Vindavas dzelzceļa izbūves. Dzelzceļa un sauszemes ceļa krustojums Troņmantnieka birzes ziemeļdaļā veicināja ielu tīkla un dzīvojamās apbūves attīstību.
2. “Jaunās Pasaules” mazstāvu dzīvojamās apbūves kvartālu cietokšņa teritorijas ārpusē šaurā joslā starp sliežu ceļu un lielceļu, iespējams, radija pie sarežģītā transporta mezgla uzbūvētās dzelzceļa stacijas un satiksmes pārraudzībai.
3. Latvijas Republikas laikā attīstīja Tosmares priekšpilsētu, kur izvērta ielu tīklu un viengimeņu dzīvojamo ēku apbūvi, veica apkārtējo zemju nosusināšanu. “Jaunās Pasaules” apbūves kvartāla tuvumā.

Summary

Russian Emperor (1881–1894) Alexander III signed an order on January 15, 1890 about building of Libau fortress and promoted development on the Tosmare Lake shore, where in the swampy southern part on the relief elevation by the bridge over the River Vērnīkupīte there was the farmstead “Vērnīeki”. On January 19, 1890 author of the project, Major General, military engineer Ivan Alfred McDonald started to lead construction works and modernize the Libau Port. On May 13, 1892 in Saint-Petersburg the senior officials of Maritime and Military Departments in a special meeting discussed Libau Fortress project and changed its structure a little. On August 30, 1892 the altered project obtained the highest approval. In spring 1893 a project for Naval Port (Military) Town (built from 1893 till 1906) was worked out, but in November 1893 McDonald announced that building of the front-port was completed. At the fork of Libau–Grobin highway to the farmstead “Vērnīeki” on the River Vērnīkupīte eastern bank before the bridge the Emperor’s Pavilion was built and a place for recreation made. In May 1894 Alexander III approved building of the workshop complex and the Naval Port, and in compliance with the Emperor’s order from 1894 till 1908 a wide fortification system was created for the city protection. After the Emperor’s death the Naval Port obtained the name “Emperor Alexander III’s Port” on October 20, 1894. In summer 1898 the Naval Port canal was built. The road from the territory outlined for Naval Port took eastwards over the River Vērnīkupīte and at the farmstead “Vērnīeki” joined the fork of Libau–Grobin highway. Around 1903 at the crossroads westwards the Apparent Heir’s Grove a building quarter with four streets was arranged. On the land belt between the road towards Grobin and Libau–Romny Railway low-rise residential building of “New World” was made. On the seashore between the Lake Tosmare and the Baltic Sea the Redan Fort was made. In the central part of fortifications North, Middle and South Forts were located between the Lake Liepaja and the Lake Tosmare

to protect the road to Grobin. From the Lake Liepaja northwards along the inner perimeter of the fortress up to the furthest battery a road was made (now 14th November Avenue). It started not far from the fork of Libau–Grobin highway towards the farmstead “Vērnīeki”, from which in the eastern part of the Libau Fortress on the southern shore of the Lake Tosmare between the road and the River Vērnīekupīte at the Apparent Heir’s Grove building was developed. In the neighbourhood of Middle and South Forts the junction of Libau–Romny and Libau–Riga railroad was crossed by Libau–Grobin–Riga highway, but the narrow-gauge railway took to Aizpute. A complicated transport hub was made. At fortifications between North and Middle Forts residential building was developed. Nevertheless, on June 27, 1907 an order was issued about liquidation of the fortress status to Libau. Protection buildings were partly blown up. In 1912 after opening the railway line Moscow–Windau–Rybinsk the modernized Windau Port obtained a connection to the Russian Empire Railway network, and on the western side of the Apparent Heir’s Gove a siding built from Windau to Libau created a link with Libau–Riga railway line, “Emperor Alexander III’s Port” and Libau Trade Port. On the northern side of the grove by the road and railway crossroads pieces of land were allocated for low-rise buildings and also streets were made.

After World War I in the Republic of Latvia a building of cheap dwellings became topical, and since 1920 building of single-family residential houses was approved. In Ministry of Agriculture the urban planning office for building project development was established. On September 16, 1920 Constitutional Assembly passed a resolution “About the Agrarian Reform in Latvia Republic” and Part I of the Agrarian Reform Law “About foundation of State Land Fund.” New pieces of land were allocated for urban planning and since 1920 building of single-family residential houses was promoted, on February 15, 1922 Constitution of Latvia Republic was approved, but in 1923 – general regulations on project development for state, public and industrial buildings in order to guarantee in Latvia a rational and planned building policy.

In Liepaja the extension of the free-port was envisaged and in 1922 the development plan of the administrative borders was started in order to include the northern part and eastern shore of the Lake Liepaja in the city’s territory. The inhabitants’ favourite recreation place the Apparent Heir’s Grove was called as Aspazija Grove during 1920–1930, and it was planned to supplement the street tracing and low-rise residential building, allocating pieces of land for building in the southern part of the grove. In 1933 on the northern outskirts of Liepaja a sugar factory was built (arch. Kārlis Bikše; 1887–1955), and in its neighbourhood single-family houses were built and also the street network developed. Eastwards from the sugar factory there went Grīzupe Street, but the parallel Lēņu Street on the northern side demarcated the Aspazija Grove’s building block, whose territory north-southwards was crossed by Labraga and Ēdole Streets. In the Aspazija Grove’s northern part the railway line was crossed by 14th November Street, and the low-rise building clung to it, which was developed eastwards around Talsu Street. In the project developed for perspective building and new street construction the low-rise buildings were also located northwards Grīzupe Street and westwards the River Vērnīekupīte, on both sides of the railway Liepāja–Ventspils and around Alsunga and its parallel Kuldīga and Ploču Streets, as well as around Skrunda and Durbe Streets which are parallel to Grīzupe Street. On the triangular territory between Grīzupe, Kuldīga and Vērgale Streets it was planned to make Market Place. In the “New World” building quarters the fork of Liepaja–Grobin highway towards the “Vērnīeki” was called Sabile Street since September 20, 1934, it was crossed by Abava Street, but closed by Renda Street, from which a little road took towards the railway.

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Literatūra References

- Gruss aus Libau. Thronfolgerhain.* Pastkarte <http://libauer.1s.lv/Thronfolgerhain%201910.jpg> (skatīts 09.01.2018)
- Jaunais Liepājas kalendārs.* (1926). Liepāja: K. Rubena izdevums.
- КНВ – Krievijas Nacionālā bibliotēka Sankt-Pēterburgā Российская национальная библиотека в Санкт-Петербурге. Единица хранения К 3-РОСС.Е/442_3 *Военно-Топографическая карта Курляндской и Ковенской губернии Российской Империи.* (1915) Ряд IX, лист 1. Съёмка 1846–1863 г.г. Петроград: Литография Картографического заведения Военно-Топографического отдела.
- Lageplan von Libau. (1908). No: *Meyers Großes Konversations-Lexikon. Band 12.* Leipzig, Wien: Bibliographisches Institut, S. 503-504.
- Latviešu māju kalendārs uz 1914. gadu.* (1913). Liepāja: Liepājas Latviešu Savstarpējās Palīdzības biedrība, 29.
- LNB-1 – Latvijas Nacionālā bibliotēka. Glabāšanas vienība Kt L1-3/105. Бер Е. И. (1903). План города Либавы. Либава: Типо-литография Августа Кетена.
- LVVA-1 – Latvijas Valsts vēstures arhīvs. LVVA, 6828. fonds, 1. apraksts, 43-14. lieta *Topograph. Special-Karte von Mittel-Europa. 60. Libau.* Herausgegeben vom Königl. Preuss. Gr. Generalstabe. Jahr der Herausgabe 1889, Jahr der letzten Berichtigung B 1911.
- LVVA-2 – Latvijas Valsts vēstures arhīvs. LVVA, 6828. fonds, 1. apraksts, 33-1. lieta *Karte der Umgebung von Libau.* 1916.
- LVVA-3 – Latvijas Valsts vēstures arhīvs. LVVA, 6828. fonds, 6. apraksts, 4892. lieta *Liepājas pilsētas administratīvo robežu plāns.* 1925.
- LVVA-4 – Latvijas Valsts vēstures arhīvs. LVVA, 6828. fonds, 2. apraksts, 545. lieta *Liepājas pilsētas administratīvo robežu projekta plāns.* 1932.
- LVVA-5 – Latvijas Valsts vēstures arhīvs. LVVA, 1679. fonds, 162. apraksts, 598. lieta. *Liepājas pilsētas administratīvo robežu projekta plāns ar apbūves gabalu iedalījumu Kara Ministrijas zemē.* 1933.
- LM-1 – Liepājas muzejs. Pastkarte 18849-1. *Libau. Der Thronfolger Hain.*
- LM-2 – Liepājas muzejs. Pastkarte 18849-2. *Привет из Либавы. Поща Наследника = Gruss aus Libau. Thronfolgerhain.*
- Liepājas piekraste.* (1931). Rīga: Jūras departamenta izdevums.
- LPB – Liepājas pilsētas Būvvalde. Иванов В. (1946). *Луцкая. Опорный план по состоянию на 1 января 1946 года.* Рига: Управление по делам Архитектуры при Совете Министров Латвийской ССР.
- LPCZB – Liepājas pilsētas Centrālā zinātniskā bibliotēka.
- Ozola, S. (2014). Kurzemes un Zemgales pilsētu plānojums un apbūve Latvijas Republikā līdz Otrajam pasaules karam. *Daugavpils Universitātes 56. starptautiskās zinātniskās konferences rakstu krājums. C. daļa "Humanitārās zinātnes"*, 237.–262.
- Siliņš, M. (1893). *Liepāja ar Liepājas ezera apvidu.* Rīga: Aleksandra Štāla litogrāfija.
- Иванина, А. *Либавский порт.*
- Фарусь-планъ Либавы.* (1903. Берлин: издание Фаруса.

LIEPĀJAS DZĪVOJAMĀ RAJONA “ZAĻĀ BIRZE” PLĀNOJUMA UN TELPISKO STRUKTŪRU ATTĪSTĪBA PĒC OTRĀ PASAULES KARA

Development of Liepaja Residential Area “Green Grove” Planning and Spatial Structures after World War II

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Abstract. *In Liepaja 1960 building of residential buildings started, but in 1967 the Master Plan was confirmed: eastwards of industrial zone the residential area “Green Grove” (Latvian: Zaļā Birze) was envisaged, where architect Irēna Rubauska developed a three-stage detailed planning (1973) of five housing estates with multi-storey residential buildings. After Latvia Republic restoration a controversial period of ownership started: without analysis transformations were implemented in urban environment, promoting fragmentation of planning. Research issue – Soviet time heritage in Liepaja has not been studied sufficiently. Architecturally spatial of the residential area “Green Grove” composition has not been implemented, and housing estate’s further development is not resolved nowadays. Research novelty – urban planner Rubauska’s creative investment in urban development has been acknowledged. Research goal – the residential area “Green Grove” spatial structural analysis. Principal methods applied-planning and construction observation in nature, analysis of archive and cartographic materials, comparative method for conclusions. Summary of research outcomes: Rubauska’s intention of the residential area “Green Grove” without implementation, architecturally spatial composition is not solved any longer; nowadays topographical survey is not applied for Liepaja’s territorial zoning, watercourses are not marked, therefore schematic areas and approximate shapes of fortress canal do not provide impression of qualitative architecturally spatial formation.*

Keywords: *architect Irēna Rubauska, residential area “Green Grove”, detailed planning, architecturally spatial composition.*

Ievads

Introduction

Pirmajos pēckara gados Latvijas Padomju Sociālistiskās Republikas (turpmāk tekstā LPSR) pilsētās likvidēja kara sekas, atjaunoja komunālo saimniecību un transportu, rekonstruēja rūpnīcas, izstrādāja ģenerālplānus vai shēmas apbūves sakārtošanai. Iedzīvotājus izvietoja pilsētās, lai veicinātu rūpniecības, transporta un citu pilsētveidojošo elementu attīstību (Buka, 1987: 72). Liepāja kļuva par republikas nozīmes pilsētu un rajona centru, un 1946. gada

19. janvārī atjaunoja sabiedriskā transporta satiksmi no Uzvaras (līdz 1945. gadam Rožu) laukuma līdz dzelzceļa pasažieru stacijai un Karostai. Tosmarē, "Jaunajā Pasaulē", Ziemeļu un Dienvidu priekšpilsētās 1946. gadā iedalīja zemesgabalus individuālai būvniecībai (Ozola, 2015: 160).

Padomju valdība paziņoja par jauna administratīvi-politiskā dalījuma izveidi LPSR. Liepājā dzīvoja ap 84 000 iedzīvotāju, un Tirdzniecības osta, rūpniecība un dzelzceļš veicināja iedzīvotāju skaita pieaugumu. Liepājā, ņemot vērā 14 km garās pilsētas novietni un ģeogrāfiskās īpatnības, izveidoja administratīvos rajonus – Vecliepāju, Jaunliepāju un Ziemeļu rajonu.

Rīgā pie LPSR Ministru Padomes nodibināja Arhitektūras lietu pārvaldes Republikāniskās arhitektūras-plānošanas darbnīcas (1945), un arhitekts Vitālijs Ivanovs (*Виталий Иванов*; 1909–1964) Liepājai izstrādāja plānojuma skices. Liepājas pilsētas DDPI 1946. gada 16. augustā uzskatīja par pareizu turpmākiem 15–20 gadiem pieņemt Liepājas iedzīvotāju skaitu – 150 000, bet pirmajā kārtā līdz 1950. gadam – 100 000, atbalstīja sociāli-ekonomisko specializāciju, kas par pilsētveidojošo faktoru noteica rūpniecību un transportu, akceptēja dzīvojamās, ražošanas un noliktavu apbūves izvietojumu un jaunas šķirošanas stacijas izbūvi aiz pilsētas robežām stacijas "Ālande" apkaimē. Pilsētas izaugsmei piemērotas teritorijas bija ļoti ierobežotas, tādēļ teritoriālai attīstībai izvēlējās Tosmari, zemes ziemeļaustrumos, Tosmares ezera rietumu un ziemeļu piekrastē un austrumkrasta ziemeļdaļā. Dzelzceļa atzarus izveidoja gar kanālu, bet dzelzceļa saimniecību – preču stacijas rajonā. Sanitāru apsvērumu dēļ gaļaskombinātu un veterināro klīniku ieteica būvēt jaunos zemesgabalos (Ozola, 2015: 160). Arhitektūras lietu Komitejas pie PSRS MP priekšsēdētāja vietnieks, arhitekts, pilsētībūvnieks Boriss Rubaņenko (*Борис Рафаилович Рубаненко*; 1910–1985) 1946. gada 1. novembrī apstiprināja „Instrukciju celtniecības komplekso shēmu 1946.–1950. gadam sastādīšanai” un 7. novembrī izdeva pavēli Nr. 891 par celtniecības komplekso shēmu izstrādi, pievienojot pielikumā pilsētu sarakstu. Pēckara gados pirmajā Liepājas plānošanas dokumentā "Liepājas celtniecības kompleksā shēma 1946.–1950. gadam" Tosmares ezera dienvidu piekrastē paredzēja rūpniecības un dzīvojamo zonu. Arhitekts Irēna Rubauska (dz. 1930) plānojumu attīstīja Liepājas ģenerālplānā un dzīvojamā rajona "Zaļā Birze" detālplānojumā.

Pētījuma problēma – padomju laika arhitektūras mantojums Liepājā ir pētīts ļoti maz. Dzīvojamā rajona "Zaļā Birze" detālplānojuma arhitektoniski telpiskā kompozīcija nav īstenota, un mūsdienās dzīvojamās apbūves turpmākā attīstība Grīzupes ielas apkaimē netiek risināta. Pētījuma novitāte – arhitektes, pilsētplānotājas Irēnas Rubauskas radošās darbības apzināšana un Liepājas pirmā daudzstāvu dzīvojamo namu rajona "Zaļā Birze" plānojuma izpēte. Pētījuma mērķis – Liepājas dzīvojamā rajona "Zaļā Birze" plānojuma, Aspazijas birzes un "Jaunās Pasaules" apbūves analīze. Pētījumā izmantota salīdzinošā metode, apbūves apsekošana dabā, arhīva un kartogrāfisko materiālu studijas.

**Tosmares ezera dienvidu piekrastes dzīvojamās apbūves plānojums
pēckara pirmajā desmitgadē**
*Planning of the housing development at the south coast of the Lake Tosmares
in the first post-war decade*

Liepājas pilsētas galvenā arhitekta pārvaldei bija jāizstrādā „Liepājas celtniecības kompleksā shēma 1946.–1950. gadam”, un Liepājas galvenais arhitekts Roberts Vītolnieks (1907–?) Arhitektūras lietu pārvaldes pie LPSR MP Projektu un tāmju ekspertīzes birojam iesniedza shēmu, kas ietvēra arī Tosmares ezera dienvidu piekrastes plānojumu (Ozola, 2015: 161). Mazstāvu dzīvojamās apbūves teritoriju pie Aspazijas birzes šķērsoja Grīzupes iela, bet rietumpusē norobežoja Liepājas–Ventspils dzelzceļš un stacija “Tosmare”, un austrumpusē – Tankistu iela (kopš 1948. gada, līdz 1942. gadam 14. novembra bulvāris, no 1942. līdz 1948. gadam Uzvaras bulvāris). Netālu no “Jaunās Pasaules” apbūves kvartāla, kur dzelzceļu Liepāja–Rīga krustoja autoceļš Liepāja–Grobiņa–Rīga, bija uzcelta dzelzceļa stacija “Krustojums”.



1. att. Liepājas plāna fragments ar “Jaunpasaules” un Aspazijas birzes esošo un projektēto apbūvi. Stāvoklis uz 1946. gada 1. janvāri. Apbūves gabali: brūnā krāsā, zilā krāsā. 1946 (LPB-1)

Fig. 1. Fragment of Liepaja plan with current and envisaged building, New World blocks. Condition on January 1, 1946. Building plots: in brown colour, in blue colour

„Liepājas celtniecības kompleksajā shēmā 1946.–1950. gadam” (2. att.) uz gaismas kopijas bija parādīti mazstāvu dzīvojamās apbūves kvartāli no Alsungas ielas uz ziemeļrietumiem, abās pusēs Liepājas–Rīgas dzelzceļam, samazinot lapkoku audzes platību Aspazijas birzē, kurai rādīts labiekārtojums, kā arī uz rietumiem no “Jaunās Pasaules” un Liepājas ezera ziemeļrietumu piekrastē. Shēmai pievienoja Liepājas pamatplānu M 1:10 000, kurā norādīja apbūvi uz 1946. gada 1. janvāri (1. att.).



2. att. Liepājas ģenerālplāna shēmas fragments būvniecībai Aspazijas birzī no 1946. līdz 1950. gadam. 1946 (LPB-2)

Fig. 2. Fragment of Liepaja Master Plan's scheme for building in Aspazija Grove from 1946 till 1950

Arhitektūras lietu pārvaldes pie LPSR MP Arhitektūras Padomes 1947. gada 29. novembra sēdē priekšnieks Kiše, Arhitektūras Padomes loceklis, arhitekts-eksperts, docents Osvalds Tīlmanis (1900–1980), Projektu un aprēķinu ekspertīzes biroja priekšnieks Minuhins, Pilsētu plānošanas nodaļas vadītājs Kramarevs, Galvenās Arhitektūras Celtniecības komitejas galvenās inspekcijas priekšnieks Aizsilnieks, Pilsētu plānošanas nodaļas vecākais arhitekts Alfrēds Ludvigs Ūdris (1909–?), Liepājas galvenais arhitekts Roberts Vītolnieks, Liepājas attīstības projekta autors Vitālijs Ivanovs, arhitekts-eksperts Razživins un sekretārs Pļavinskis izskatīja Liepājas plānojuma turpmāko attīstību. Protokolā Nr. 54 norādīja, ka Vītolnieka izstrādātā „Liepājas kompleksās celtniecības shēma

1946.–1950. gadam” tiek apstiprināta ar nosacījumu, ka tiks pilnveidots paskaidrojuma raksta teksts un shēma (Ozola, 2015: 162).

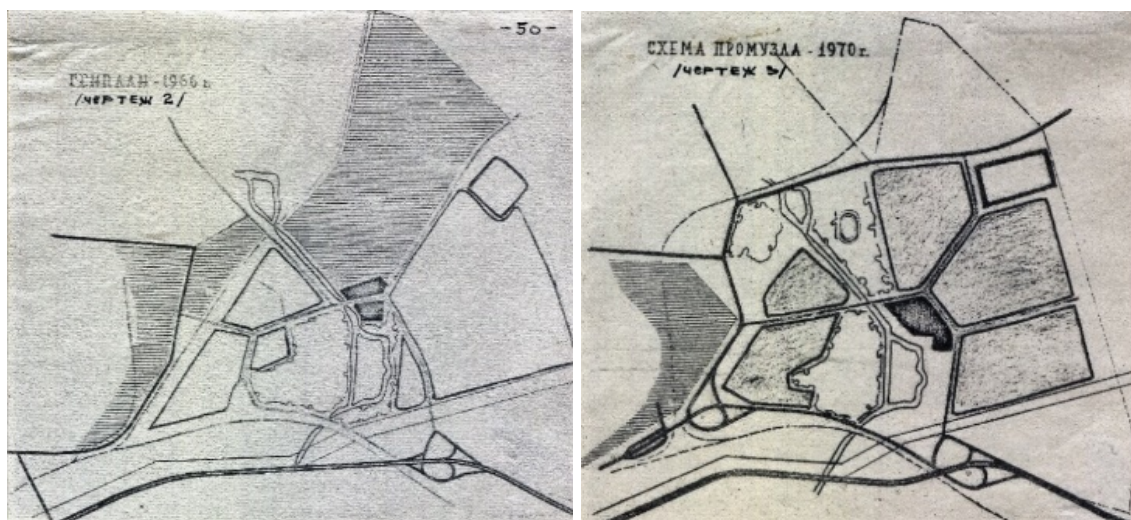
Pirmajos pēckara gados nozīmīgi kultūras un ārstniecības objekti, ražotnes, dzelzceļš, ostas un sabiedriskais transports nonāca padomju iestāžu un armijas pārvaldībā. Liepājā uzsāka nacionalizēto un varas iestāžu pārņemto īpašumu inventarizāciju un rūpniecības un transporta objektu atjaunošanu. Vietējos iedzīvotājus iesaistīja ražošanā, taču dzīvojamā fonda atjaunošana un celtniecība atpalika no rūpniecības un transporta attīstības. Sākot ar 1948. gada 1. janvāri civilpersonām atļāva ierasties Liepājā, uzrādot Jūras-Kara komandanta izdotu caurlaidi (Ozola, 2015: 162).

Pamatojoties uz LPSR MP rezolūciju, Liepājas pilsētas DDPI pieņēma lēmumu pasludināt 1950. gada augustā Liepājas pilsētu, kurā dzīvoja 64 200 iedzīvotāji, par slēgtu teritoriju. Iedzīvotāju skaitu mehāniski palielināja padomju armijas demobilizēto karavīru ierašanās, izmainot nacionālo sastāvu. Liepājas saimniecības atjaunošanas plānā 1950. gadam ietvēra prasību ierīkot tramvaja līniju uz “Liepājas Cukurfabriku” un rūpnīcu „Tosmare”. PSRS MP 1951. gada 18. augustā pieņēma lēmumu, ka Tirdzniecības ostas kanāls ar piestātnēm, krasta būvēm un iekārtām līdz 1952. gada 1. janvārim jāatdod 4. jūras karaflotei. Liepājas ostā izbeidza saimniecisko darbību, lai to izmantotu militārām vajadzībām, taču 1956. gadā Tirdzniecības ostas atkal atsāka darbību. Grīzupes ielā uzcēla dzelzsbetona konstrukciju rūpnīcu, kas veicināja celtniecības industrializāciju, ražotņu un dzīvokļu būvniecību. Liepājā 1959. gadā darbu sāka silikātķieģeļu rūpnīca, un no padomju republikām iebraukušo strādnieku izmitināšanai sāka būvēt no ķieģeļiem vienveidīgas daudzstāvu dzīvojamās ēkas, bet ap 1960. gadu izvērta masveida būvniecību. Liepājā ieviesa pierobežas režīmu: iebraukšanai pilsētā bija nepieciešama atļauja (Ozola, 2015: 167).

**Liepājas pirmā perspektīvā daudzstāvu dzīvojamo ēku apbūves rajona
“Zaļā Birze” projektēšana un būvniecība
*Design and construction of the first prospective multistorey residential
buildings district “Zaļā Birze” in Liepāja***

Pilsētu daudzveidīgajā teritoriālajā attīstībā funkcionālo zonu savstarpējais izkārtojums atšķiras, taču galvenās funkcijas – darbs, sadzīve un atpūta saglabājas. Pilsētas struktūrā svarīgs ir pamatzonu – rūpniecības, dzīvojamo un apzaļumoto teritoriju pareizs plānojums un apbūve (Buka, 1987: 94). Arhitekts Irēna Rubauska izstrādāja Liepājas centra detālplānojumu, kurā paredzēja centru paplašināt un rekonstruēt dzīvojamos kvartālus, bet Valsts pilsētu celtniecības projektēšanas institūts radīja celtniecības industrializācijai atbilstošu Liepājas ģenerālplānu (1966), norādot tajā pilsētas centra teritoriju un funkcionālo zonējumu rūpniecības, noliktavu un transporta celtni, atpūtas vietu un

inženiertehnisko komunikāciju izvietošanai. Pilsētu attīstību noteica ražotājspēku izvietojums: rūpniecības uzņēmumus apvienoja industriālos kompleksos, kurus saistīja ar dzīvojamo rajonu (Buka, 1987: 68, 70). Ģenerālplānu 1967. gadā apstiprināja Latvijas PSR Ministru Padome (Ozola, 2012: 28–29).



3. att. Rubauska Irēna. Dzīvojamā rajona “Zaļā Birze” plānojums: a) skice Nr. 2 – ģenerālplāna shēma ar rūpniecības zonas izvietošanu, sabiedrisko centru uz ziemeļiem no kādreizējā Vidus forta un dzīvojamās apbūves teritoriju Vidus forta austrumpusē, 1966; b) skice Nr. 3 – rūpniecības rajona shēma ar dzīvojamās apbūves teritoriju no Vidus forta uz ziemeļiem un austrumiem. 1970 (LPB-3, 1973: 50)

Fig. 3. Rubauska Irēna. Planning of residential area “Green Grove”: a) sketch No 2 – Master Plan’s scheme with industrial zone location, public centre northwards from the former Middle Fort and residential area eastwards, 1966; b) sketch No 3 – scheme of industrial district with residential building territory from Middle Fort northwards and eastwards

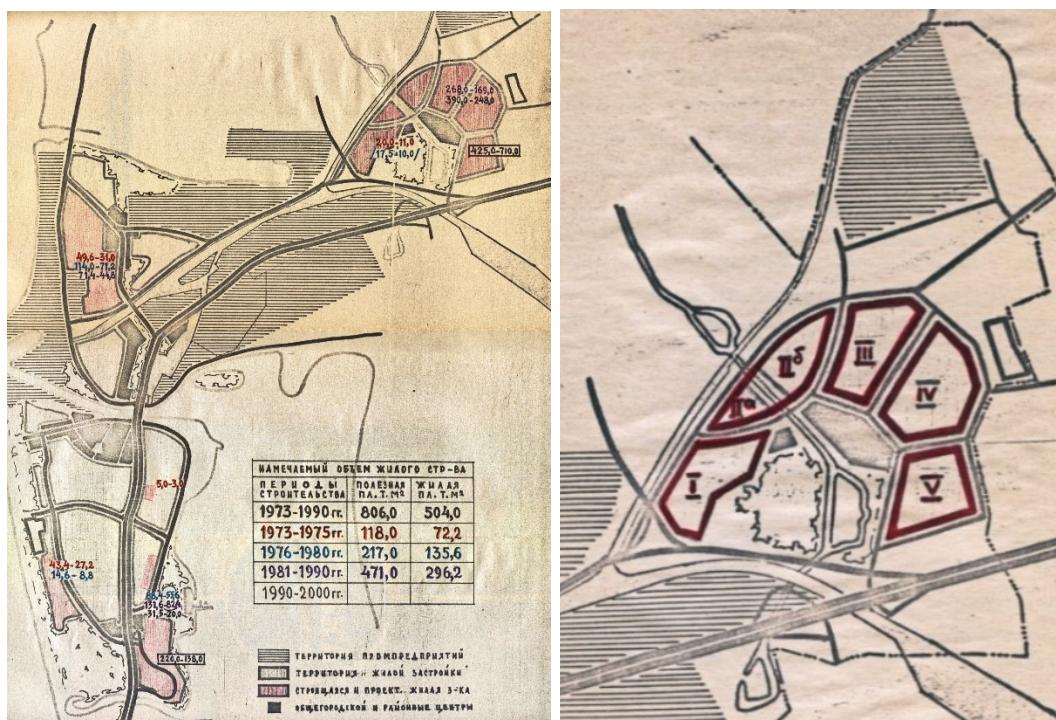
Jaunas dzīvojamās zonas plānojumā risināja kultūras un sadzīves apkalpes sistēmu un iedzīvotāju racionālu pārvietošanos uz darbavietām, sabiedrisko centru un atpūtas vietām. Bija jārada apstākļi dažādu dzīvokļu tipu lietojumam, ievērojot pilsētībūvniecības kompleksās prasības – iedzīvotāju izvietošanu, demogrāfiju, ēku stāvu augstumu, arhitektonisko kompozīciju. Dzīvojamās zonas struktūru veidoja atbilstošu iedzīvotāju daudzveidīgajām sadzīves prasībām, ko nodrošināja dzīvojamo ēku un sabiedriskās apkalpes teritoriālā apvienošana vienotā sistēmā (Buka, 1987: 91). Struktūrālo uzbūvi raksturoja apbūves dalījums dzīvojamajos rajonos un mikrorajonos, bet maģistrāles nodrošināja vienmērīgus transporta sakarus ar dzīvojamo zonu (Buka, 1987: 95, 96). Liepājā par perspektīvu apbūvi uzskatīja 21 tūkstošiem iedzīvotāju paredzēto dzīvojamo rajonu “Zaļā Birze” rūpniecības zonas austrumpusē, lai līdzsvarotu apdzīvotību pilsētā, vienmērīgi attīstītu apkalpojošo transportu un veicinātu Grobiņas izaugsmi, jo

pilsētas attīstību saistīja ar piepilsētas zonu, nodrošinot ērtus sabiedrisko transportu, radot kultūras un sadzīves apkalpošanas sistēmu un apstādījumus iedzīvotāju atpūtai. Pareizi organizēta piepilsētas zona ar lielām mežu masīvu teritorijām nodrošināja pilsētai labvēlīgus sanitāri higiēniskos apstākļus (Buka, 1987: 76, 77). Ziemeļu priekšpilsētā (līdz 1932. gada 28. decembrim Velnciems) ap 1969. gadu vairs nebija lielas, neapbūvētas platības jaunas apbūves projektēšanai, tādēļ izvērtēja iespējas celt daudzstāvu dzīvojamus namus Ziemeļu priekšpilsētā un “Zaļajā Birzī”, daļēji nojaucot privātēkas (LPB-4, 1969: 56).

Valsts teritoriālais rūpniecības uzņēmumu projektēšanas institūts “Rūpnīcprojekts” (Latgiproproj) 1970. gadā izstrādāja priekšlikumus industriālās apbūves sakārtošanai (3b. att.) Liepājā, lai dzīvojamā rajona “Zaļā Birze” būvniecība neietekmētu jauno rūpniecības zonu, kuras izaugsmi un perspektīvo dzelzceļa staciju “Ālande” neieklāva Liepājas ģenerālpilāna (3a. att.) aprēķinos. No Grīzupes ielas uz ziemeļiem projektēja būvindustrijas uzņēmumus, kurus paredzēja izvietot arī Jaunliepājā pie Brīvības (no 1932. gada 28. decembra, agrāk Aleksandra) ielas, uz dienvidiem – dzīvojamo zonu.

Pilsētas plānojumu noteica reljefs, hidrogrāfija un zaļumu masīvi, tādēļ uzmanību pievērta dabas apstākļiem, saglabājot koku stādījumus (Buka, 1987: 80). Projektējamai trīsstūrveida teritorijai ziemeļrietumu pusē pieklāvās Tosmares ezera piekrastes atpūtas zona, meži un dzelzceļš Liepāja–Ventspils, austrumos bija pilsētas robeža un piepilsētas meži, dienvidos – augstsprieguma elektrolīnijas koridors, dzelzceļš Liepāja–Jelgava–Rīga un maģistrāle Liepāja–Grobiņa–Rīga, kuras izveidi apgrūtināja komplicētais dzelzceļa mezgls un šķirošanas stacijas būvniecība. Būvdarbu laikā aizbēra kanāla dienviddaļu un radīja noslēgtu tilpni, kuras ūdenslīmeni noteica paaugstinātais gruntsūdens līmenis, atmosfēras nokrišņi un ar kanāla ziemeļdaļu saistītais Tosmares ezers. Kanāla austrumpusē applūda ganības un zemes lauksaimniecībai.

Liepājas galvenais arhitekts izdeva Arhitektūras–plānošanas uzdevumu inženiertīklu izbūvei un sliežu pievedceļiem uz rūpniecības rajonu, kura rietumu un dienvidu pusē atradās mazstāvu dzīvojamās ēkas. Pazeminot gruntsūdens līmeni, lai tas nepārsniegtu ūdenslīmeni ezerā, likvidējot aizbērumus cietokšņa kanālā un atjaunojot drenāžu, varēja atrisināt inženiertīklu un ēku pamatu izveides problēmas un mazināt apkārtnes pārpurvošanos, ko ietekmēja arī “Liepājas Cukurfabrikas” darbība. Ainaviski neizteiksmīgā Tosmares ezera apvidū un jūras tuvumā dzīvojamās apbūves attīstību 1973.–1990. gadā (4. att.) saistīja ar rūpnīcas “Sarkanais Metalurģis” izaugsmi un kombināta “Lauma” būvniecību 1976.–1980. gadā.



4. att. Rubauska Irēna. Liepājas funkcionālā zonējuma shēma ar rūpniecības uzņēmumu, esošās un projektētās dzīvojamās apbūves teritorijām, projektētā dzīvojamā rajona apbūvi un centriem no 1973. līdz 1990. gadam. 1973 (LPB-3, 1973: 17)

Fig. 4. Rubauska Irēna. Scheme of Liepāja's functional zoning with industrial territories, current and designed residential buildings, regional centres and designed residential building from 1973 till 1990

5. att. Rubauska Irēna. Dzīvojamā rajona “Zaļā Birze” plānojuma kompozīcijas skice. 1973 (LPB-3, 1973: 63)

Fig. 5. Rubauska Irēna. Sketch of residential area “Green Grove” planning

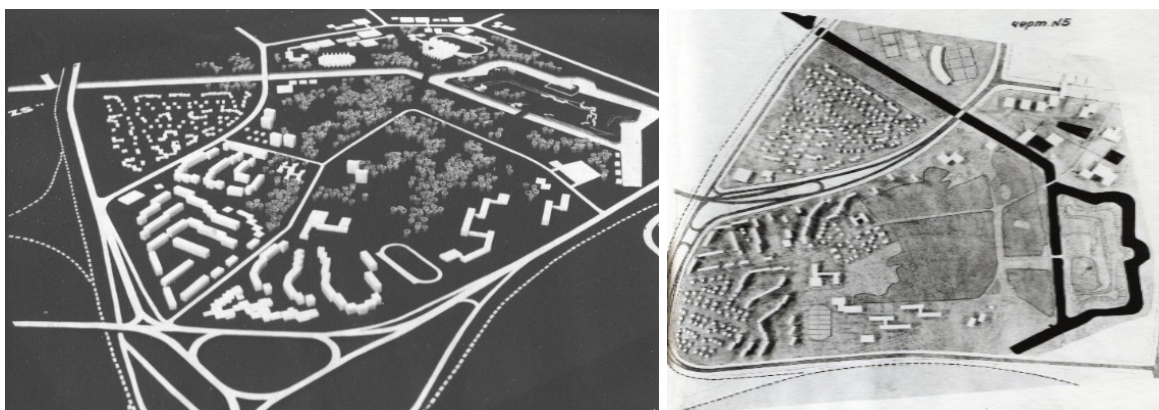
Dzīvojamā rajona “Zaļā Birze” detālplānojumā (1973) Irēna Rubauska iecerēja lapkoku audzes ielokā izveidot piecus daudzstāvu dzīvojamo namu mikrorajonus 5000–7000 iedzīvotājiem katrā (5. att.). Mikrorajonu sabiedrisko centrus saistīja vienotā kompleksā ar daudzstāvu dzīvojamām struktūrām pie maģistrālām ielām un funkcionāli nozīmīgiem gājēju celiņiem, kas nodrošināja pieejamību sabiedriskā transporta satiksmei uz pilsētas centru. Otrajā mikrorajonā saglabāja privātēkas, daļēji saudzējot dzīvojamās ēkas starp sliežu ceļiem un kanālu, bet ar mazstāvu dzīvojamām ēkām papildināja Tankistu, Skrudas un Durbes ielu apbūvi.



6. att. Rubauska Irēna. Dzīvojamā rajona “Zaļā Birze” sarkano līniju plāns, apbūves un transporta shēmas skice. 1973 (LPB-3, 1973: 57)

Fig. 6. Rubauska Irēna. Plan of residential area's “Green Grove” red lines, sketch of building and transport scheme:

Plānojumu ietekmēja 20. gs. sākumā radītās aizsargbūves un Cietokšņa kanāls, kuru ziemeļrietumos savienoja ar jūru, bet dienvidos – ar Ālandi un Liepājas ezeru. Ēku izvietojumā ņēma vērā vietējo ainavu un dabas apstākļus (LPB-3, 1973: 60). Lejpus Skrundas ielai atsevišķās grupās izkārtāja piecu līdz deviņu stāvu dzīvojamus namus, saudzējot privātēku pudurus. Būvniecību organizēja trīs etapos. Pirmajā etapā līdz 1980. gadam vajadzēja īstenot daudzstāvu un individuālo apbūvi, veikt pirmā un otrā mikrorajona rekonstrukciju. Arhitekte Maija Krastiņa izstrādāja projektu mazstāvu dzīvojamo ēku apbūvei Tankistu ielā. Pirmā mikrorajona apbūves akcentam izmantoja deviņstāvu dzīvojamās ēkas Grīzupes un Cīravas ielās. Dzīvojamā rajona ziemeļdaļa bija piemērota gaļaskombinātam un komunālās, rūpniecības un noliktavu zonai. Vistālāk uz ziemeļiem ierīkoja sašķidrinātās gāzes noliktavu. Pirmajā etapā būvējamie objekti radīja nepieciešamību risināt dzelzceļa mezglu.



7. att. Rubauska Irēna. Dzīvojamā rajona "Zaļās Birze" pirmā un otrā mikrorajona pirmās kārtas apbūves maketa foto. 1973 (LPB-3, 1973: 58)

Fig. 7. Rubauska Irēna. Photographs of the first stage planning and building model of residential area "Green Grove" first and second housing estate

8. att. Rubauska Irēna. Dzīvojamā rajona "Zaļās Birze" pirmā mikrorajona un otrā mikrorajona pirmās kārtas daudzstāvu un mazstāvu apbūves plānojuma rasējums Nr. 5. 1973 (LPB-3, 1973: 91)

Fig. 8. Rubauska Irēna. Technical drawing No 5 of the first stage multi-storey and low-rise building planning of residential area "Green Grove"

Otrajā etapā no 1980. līdz 1990. gadam dzīvojamā rajona centrālajā daļā trešā un ceturtnā mikrorajona apbūvei izmantoja piecu, deviņu un divpadsmit stāvu 104. sērijas ēkas, bet trešajā, ceturtnajā un piektnajā mikrorajonā izvietoja skolu 1070 skolēniem, bērnudārzu 280 bērniem un citus apkāpes objektus (LPB-3, 1973: 82). Paredzēja labiekārtot ozolu birzi, izkārtot Cietokšņa kanāla abos krastos ūdensbaseinus, skvērus gājējiem, kultūras, izglītības un sporta iestādes. Kanālā uz salas aizsargbūvju vietā uz reljefa paaugstinājuma iecerēja ierīkot estrādi koncertiem un kino lektoriju, izveidot memoriālu parku-muzeju, kā arī un radīt labai pieskaņotu dzīvojamā rajona sabiedrisko centru, kur attēlā (6. att.) redzamas projektētās 104. – 103. sērijas piecstāvu dzīvojamās ēkas, projektētās 104. sērijas deviņstāvu dzīvojamās ēkas, viena un divstāvu kotedžas tipa dzīvojamās ēkas, I mikrorajona sabiedriskais centrs, klubs-sarkanais stūrītis, veikali, ēdnīca, sadzīves pakalpojumu kombināts, veļas mazgātava (pašapkalpošanas), vispārējās izglītības skola, bērnudārzs-silīte, individuālo automašīnu garāžas 8 – blokveida automašīnu novietnes, 9 – segtas nojumes, 10 – daudzstāvu garāžas; II rajona nozīmes sabiedriskais centrs, 11 – kultūras-izglītības daudzstāvu ēkas, 12 – daudzstāvu sporta ēkas, 13 – sabiedriskās ēdināšanas uzņēmums, 14 – tirdzniecības uzņēmumi, 15 – sabiedriskās apkāpes uzņēmumi, 16 – administratīvi saimnieciskais uzņēmums, 17 – daudzstāvu garāžas, 18 – memoriālais parks, 19 – sadzīves objekts; III – ārstniecības iestādes, 20 – poliklīnika, 21 – pilsētas nozīmes slimnīca, 22 – veterinārās ārstniecības iestāde, 23 – profesionāli tehniskā mācību iestāde; IV – atpūtas zona, 24 –

atrakcijas, 25 – pludmale, 26 – sporta laukumi. Grīzupes ielas abās pusēs paredzēja apkalpes zonu ar vienu, divu un trīs stāvu tirdzniecības, administratīvajām un sadzīves pakalpojumu ēkām un transporta komunikāciju dalījumu līmeņos, lai nodrošinātu gājēju kustību, autostāvvietas un sabiedriskā transporta piebrauktuves, bet sabiedriskā centra apbūves kontrastam iecerēja uzcelt deviņu un divpadsmit stāvu dzīvojamus namus un maģistrāli arhitektoniski noslēgt ar sešpadsmitstāvu administratīvo ēku un pilsētas nozīmes slimnīcas augstceltni. Mežaparka nomali uzskatīja par piemērotu profesionāli tehniskai un veterinārai mācību iestādei.

Trešajā etapā ap 2000. gadu dzīvojamā kompleksa (7. att.) būvniecību bija jānoslēdz (LPB-3, 1973: 64). Ģenerālplānā rezervēja teritoriju dzīvojamā rajona “Zaļā Birze” (8. att.) apbūves attīstībai.

Liepājas perspektīvā rūpniecības mezgla un jauna ģenerālplāna izveide *Development of the new master plan and the prospective industrial hub in Liepāja*

Liepājā attīstīja piecus rūpniecības rajonus, un industriālās apbūves sakārtošanai projektēšanas institūts “Rūpnīcprojekts” (Latgiproproprom) izstrādāja projektu “*Предложения по упорядочению промышленной застройки и кооперированию вспомогательных хозяйств города Лиепая*”, priekšlikumiem, radot nepieciešamību veikt izmaiņas ģenerālplāna rūpniecības zonā un pilsētas transporta shēmā. Izstrādāja divus variantus: pirmajā variantā paredzēja jaunas ražotnes izvietot “Centrālajā” rūpniecības rajonā un pilsētas ziemeļaustrumu daļas jaunajā rūpniecības rajonā uz dienvidiem no Liepājas–Ventspils dzelzceļa un stacijas “Tosmare”, bet otrajā variantā paredzēja visus rūpniecības uzņēmumus izvietot “Centrālajā” rūpniecības rajonā starp Brīvības ielu un Liepājas ezeru, jo stacijas “Ālande” tuvumā nākotnē iecerēja izveidot šķirošanas un kravas dzelzceļa staciju, kas nodrošinātu saikni ar “Centrālo” rūpniecības rajonu. “Ziemeļu” rūpniecības rajona sastāvā veidoja perspektīvo rūpniecības mezglu ar gaļaskombinātu un naftas bāzi netālu no dzīvojamā rajona “Zaļā Birze”.

Liepājā 1980. gados spilgtāk nekā citās pilsētās izpaudās sabiedrībai aktuālās problēmas, nesamērīgi augstais rūpniecības potenciāls un ar to saistītais migrācijas process. Nepietiekamās celtniecības jaudas, materiālu trūkums un programma “Dzīvoklis 2000”, ar kuras palīdzību 1980. gadu otrajā pusē cerēja nodrošināt Rīgas un Latvijas iedzīvotājus ar dzīvojamo platību, ietekmēja daudzstāvu lielpanelu namu apbūves rajonu izveidi, taču apkalpes objektu un inženierkomunikāciju būve atpalika. Palielinājās neatrisinātu ekoloģisku problēmu loks bez prasmes tās saskatīt, prognozēt un risināt.

Latvijai sarežģītā attīstības laikā, kad sabiedrības ekonomiskajā un politiskajā dzīvē bija jaušamas pārmaiņas, atbilstoši spēkā esošajām instrukcijām un rekomendācijām Liepājai 1987.–1988. gadā izstrādāja jaunu ģenerālplānu laika periodam līdz 2005. gadam. Ģenerālplāna projektēšanai jaunu metodiku neizstrādāja un pilsēt būvniecības praksē nekādas revolucionāras idejas neienesā – tādu mērķi neizvirzīja, tomēr pastiprinātu uzmanību pievērsa vides veidošanai, vēsturiskiem un ekoloģiskiem aspektiem. Informācijas un metodikas trūkuma dēļ ekoloģiskos jautājumus galvenokārt risināja intuitīvi.

Ģenerālplānā nākotnes prognozes nevarēja būt objektīvas. Projektā norādīja pilsētas funkcionālā zonējuma un transporta maģistrāļu tīkla pamatvirzienus un priekšlikumus pilsētvides veidošanai. Liepājai aprēķināja perspektīvo iedzīvotāju skaitu, lai izstrādātu priekšlikumus inženierapgādei, noteiktu funkcionālo zonu lielumu, nepieciešamo dzīvojamo apbūvi un apkalpes objektus. Neprecīzo prognozi ietekmēja rūpniecībā strādājošo skaits, kas patiesībā bija mazāks nekā tika aprēķināts, izmantojot piedāvāto metodiku. Liepāja bija pēdējā no Latvijas lielajām pilsētām, kas saņēma jaunu, bet pēc aizgājušo gadu metodikas izstrādātu ģenerālplānu.

Secinājumi *Conclusions*

Pēckara gados pirmajā plānošanas dokumentā "Liepājas ģenerālplāna shēma būvniecībai no 1946. līdz 1950. gadam", kuru izstrādāja 1946. gadā, pirmo reizi Liepājas pilsētas vēsturē veidoja risinājumu rūpniecības uzņēmumu un dzīvojamās apbūves kompleksam, paredzot izvērst privātēku būvniecību, bet 1960. gados uzsāka daudzdzīvokļu ēku masveida būvniecību, un arhitekte Irēna Rubauska izstrādāja projektu Liepājā pirmā daudzstāvu dzīvojamo ēku rajona "Zaļā Birze" apbūvei, risinot arī sabiedriskā centra un apstādījumu izveidi. Makets palīdzēja radīt veiksmīgu arhitektoniski telpisko kompozīciju, kuru izvērtēja projektēšanas institūta vadošie speciālisti, arhitekti un eksperti. Rūpniecības uzņēmumi veicināja dzīvojamā fonda un infrastruktūras attīstību.

Pētījuma novitāte – ir veikta arhitektes, pilsētplānotājas Irēnas Rubauskas radošās darbības apzināšana, jo padomju laikā Liepājas pirmā daudzstāvu dzīvojamo namu rajona "Zaļā Birze" plānojums izpētei nebija pieejams. Projekta dokumentācijai tika uzlikts zīmogs "секретно" (latviski: slepeni). Mūsdienās projekta dokumentācijai slepenības statuss ir noņemts, tādēļ ar profesionāli izstrādātā projekta risinājumu iespējams iepazīties, lai nepieciešamības gadījumā arhitektes ideju varētu izmantot praktiski. Pētījumā ievietotie projekta attēli ir pirmpublicējums.

Summary

During the first post-war years in the cities of Latvia Soviet Socialistic Republic the damage of the war was eradicated, factories, community management and transport were restored and reconstructed. Liepaja became the regional centre and city of a republican significance with 84 000 inhabitants, and Architect Vitaly Ivanov (1909–1964) worked out sketches with proposals for Liepaja building development. Trade Port, industry and railway hub promoted the increase of population in the city, and in Tosmare, “New World,” northern and southern outskirts allocation of land for individual building was started in 1946.

In Liepaja the offered social-economic specialization, construction of a new marshalling yard behind the city borders in the neighbourhood of the railway station “Alande” and territorial placement for manufacturing, warehouse and residential building were approved, but industry and transport were accepted as the city-forming factor. Tosmare, the land on the outskirts in the northeast and western and northern side of the Lake Tosmare were envisaged for territorial development. Due to sanitary considerations the placement of the meat plant and veterinary clinic was planned to change. In the “Liepaja Building Complex Scheme for 1946–1950” construction of low-rise residential buildings is shown north-westwards from Alsunga Street, on both sides of the railway Liepaja–Riga, westwards from “New World” and north-west side of the Lake Liepaja.

Municipality of Liepaja made a decision and the city starting from 1950 was proclaimed as closed. The number of inhabitants was increased mechanically by the arrival of Soviet Army demobilized soldiers. In Grīzupe Street the reinforced concrete factory was built. It promoted industrialization of building, construction of manufactures and apartments. The silica brick manufacture started its work in 1959, thus round 1960 massive building work was launched.

Architect Irēna Rubauska (born 1930) developed a detailed plan for Liepaja City centre, which was extended, changing its borders, and reconstruction of residential blocks was envisaged. In 1966 the State Urban Building Design Institute worked out Liepaja Master Plan appropriate for building industrialization. Functional zones were stated, but the residential area “Green Grove” meant for 21 000 inhabitants on the eastern side of the industrial zone was considered as the element of perspective building in order to balance population in the city, develop evenly the service transport and promote development of Grobin. Around 1969 on the northern outskirts (till December 28, 1932 Velnciems) there were not any big, vacant areas for new construction projection, therefore opportunities were assessed to build multi-storey residential houses on the Northern outskirts and the residential area “Green Grove”, partly knocking down private houses. In 1970 the Design Institute of State Territorial Industrial Enterprise “*Latgiproprom*” developed proposals for the industrial building arrangement in Liepaja, so that due to the building of the residential area “Green Grove” there was no need to change the new industrial zone. Northwards Grīzupe Street construction industry enterprises were designed, but southwards – the residential zone. The recreation zone by the Lake Tosmare, forest massifs and railway Liepaja–Ventspils clung to the northwest side of the designable triangular territory, in the east there was the city border and suburban forests, in the south – the corridor of high voltage power line, railway Liepaja–Jelgava–Riga and highway Liepaja–Grobin–Riga. The complex railway hub and construction of the marshalling yard encumbered the highway formation. In the scenically featureless area of the Lake Tosmare and neighbourhood of the sea development of residential building from 1973 to 1990 was related to the development of the factory “*Sarkanais Matalurģis*” and construction of the integrated plant “*Lauma*” during 1976–1980. Irēna Rubauska in the detail plan of the residential area “Green Grove” (1973) created five multi-storey housing estates surrounded by deciduous trees

for 5000–7000 inhabitants in each of them, joining the social centres of housing estates into a united complex with multi-storey residential structures at the main streets. In the second housing estate private houses were preserved, partly protecting residential buildings between the railways and canal, but building of Tankistu, Skrunda and Durbe Streets was supplemented with the low-rise residential buildings. The planning was affected by protective structures and fortress canal, which was connected with the sea in the northwest, but in the south – with the Alande and the Lake Liepaja. Local weather conditions and landscape was taken into account in the building placement. Downwards Skrunda Street five to nine-storey houses were located in separate groups, protecting the clusters of private houses. Building was envisaged in three stages. In the first stage till 1980 the multi-storey and individual building and reconstruction of the first and second housing estates had to be implemented. The nine-storey residential buildings in Grīzupe and Cīrava Streets were used for the building accent of the first housing estate construction. The north part of the residential area was suitable for the meat plant and communal, industrial and warehouse zone, further northwards the warehouse of liquefied gas was made. The buildable objects in the first stage caused the need to solve the railway hub.

During the second stage from 1980 to 1990 in the central part of the residential area five, nine and twelve-storey buildings of Series 104 were applied for the third and fourth housing estate construction. In the third, fourth and fifth housing estate a school for 1070 pupils, kindergarten for 280 children and other service objects were located. It was planned to upgrade the oak-tree grove and develop a public centre of the residential area matching the nature, placing on both sides of the defensive canal of the fortress water basins, squares for pedestrians, culture, medicine and sports establishments. On the island of the canal instead of protection structures, where there is a distinct relief it was envisaged to make an open-air concert hall and cinema, create a memorial park-museum. The service zone with one, two and three-storey trade, administrative and consumer service buildings was planned to locate on both side of Grīzupe Street, where the division of transport communications into levels would provide the pedestrians' flow, car parks and access roads to the public transport. Nine and twelve-storey residential buildings were planned to be built to contrast the construction volume of the public centre and close architectonically the main street with the sixteen-storey administrative building and the high-rise hospital building of urban significance. On the outskirts of the forest-park it was planned to build the vocational technical and veterinary training institution.

In the third stage round the year 2000 building of the residential complex had to be completed. In the Master Plan the territory was earmarked for the residential area "Green Grove" building development.

Literatūra **References**

- Buka, O., & Volrāts, U. (1987). *Pilsētībūvniecība*. Rīga: Zvaigzne.
- LPB-1 – Liepājas pilsētas Būvvalde. Иванов В. (1946). *Лиеная. Опорный план по состоянию на 1 января 1946 года*. Рига: Управление по делам Архитектуры при Совете Министров Латвийской ССР, Архитектурно-планировочные мастерские.
- LPB-2 – Liepājas pilsētas Būvvalde. Иванов В. (1946). *Лиеная. Схема размещения строительства на 1946–1950 г.г.* Рига: Управление по делам Архитектуры при Совете Министров Латвийской ССР, Архитектурно-планировочные мастерские.
- LPB-3 – Liepājas pilsētas Būvvalde. Рубауска И. (1973). *Проект детальной планировки жилого района «Заля Бирзе» в городе Лиеная*. Рига: Латвийский государственный

институт проектирования городского строительства Госстроя Латвийской ССР (ЛАТГИПРОГОРСТРОЙ).

LPB-4 – Liepājas pilsētas Būvvalde. Рубауска И. (1969). *Проект детальной планировки района «Северное предместье» в городе Лиеная*. Рига: Латвийский государственный институт проектирования городского строительства Госстроя Латвийской ССР (ЛАТГИПРОГОРСТРОЙ).

Ozola, S. (2015). Liepājas pilsētas centra atjaunošanas koncepcija pēc Otrā pasaules kara. *Māksla un mūzika kultūras diskursā. IV starptautiskās zinātniski praktiskās konferences materiāli*, 157–173.

Ozola, S. (2012). Pilsētu ilgtspējīgas attīstības atšķirīgā izpratne: Varšava un Liepāja. *Rīgas Celtniecības koledžas IV zinātniski praktiskās konferences rakstu krājums “Ilgtspējīga būvniecība”*, 13.–43.

PUSAUDŽU MŪZIKAS KLAUSĪŠANĀS PRASMJU APGUVE UN PIELIETOJUMS

Acquisition and Application of Music Listening Skills for Teenagers

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Abstract. *Living in a society means there is a constant communication between its members. However, it is possible only when there is mutual understanding, because base principals of communication are the ability to communicate, emotional and physical readiness for communication, speaking and listening experience, as well as, mutual attitude between the talker and listener and vice versa. Listening to music is closely related to general ability to listen and perceive what has been heard. That is why the act of music listening under the guidance of a professional teacher is very important. Relevant requirement is the choice of qualitative learning content and diverse methods which are fit to teenager`s age that promote their intellectual and emotional growth. The results of the Research show that teenagers themselves believe to be very good listeners, but the answers to the test questions verify quite the opposite – teenagers are weak listeners.*

The aim of the research is to find out the possibilities of learning music listening skills for teenagers in school`s pedagogical process and its practical use in everyday life. The methods used: analysis of scientific literature, pedagogical observation, testing, questionnaire.

Keywords: *listening; listening to music; teenagers.*

Ievads

Introduction

Dzīvojot sabiedrībā, starp tās locekļiem notiek nepārtraukta komunikācija. Savstarpējās saprašanās pamatā ir komunikācijspēja: emocionālā un fiziskā gatavība uz saziņu, runāšanas un klausīšanās pieredze, kā arī savstarpējā attieksme – cieņa runātājam pret klausītāju un klausītājam pret runātāju. Klausīšanās ir svarīgs komponents skolas mācību procesā kopumā, tāpēc ikdienas darbā ar pusaudžiem, savstarpējā spēja sarunāties un klausīties ir nozīmīga. Mūzikas klausīšanās ir cieši saistīta ar vispārējo spēju klausīties un uztvert dzirdēto. Savā aizņemtībā un ikdienas steigā, cilvēki arvien mazāk atrod laiku sarunām. Pat vienas ģimenes locekļi savā starpā runā maz, jo tehnoloģiju attīstības rezultātā centrālo vietu ieņem telefons, televizors un/vai dators. Tāpēc liela nozīme ir arī mūzikas klausīšanās darbībai profesionāla pedagoga vadībā. Svarīgs nosacījums ir pusaudžu vecumam atbilstoša kvalitatīva mācību saturs un

daudzveidīgu mācību metožu izvēle, kas sekmē viņa intelektuālo un emocionālo izaugsmi.

Raksta mērķis ir noskaidrot pusaudžu mūzikas klausīšanās prasmju apguves iespējas skolas pedagoģiskajā procesā un to pielietojumu ikdienas dzīvē. Rakstā izmantotās pētījuma metodes: zinātniskās literatūras analīze, pedagoģiska, ilgstoša novērošana, testēšana, anketēšana, datu apstrāde. Pētījuma bāze – Brocēnu un Druvas vidusskolas, Gaiķu, Remtes, Blīdenes, Lutriņu un Striķu pamatskolu pusaudži vecumā no 11.-16. gadiem, kopā 288 respondenti.

Klausīšanās kā viens no verbālās saskarsmes veidiem *Listening as one of the oral communication types*

Klausīšanās ir svarīgākais un visbiežāk lietotais komunikāciju veids. Mēs gandrīz pusi no cilvēku komunikācijā pavadītā laika klausāmies, taču liela daļa laika tiek izlietota bezjēdzīgi paviršās attieksmes un neieinteresētības dēļ. Tāpēc svarīgi ir ievērot D. Kārnegija formulētos klausīšanās pamatprincipus: 1) klausīšanās vienmēr ir labākais mācīšanās veids, jo tā iespējams uzzināt daudz jauna; 2) cilvēki vienmēr ir atsaucīgi pret tiem, kas viņus uzklausā un izrāda interesi (Kārnegijs, 1997).

Klausīšanās process ir svarīgs gan pusaudzim, gan skolotājam, jo no prasmes labi klausīties sākas kontakts.

Dzirdēšana ir automātiska vai netīša sajūtu un nervu sistēmas reakcija, bet klausīšanās ir tīša uzmanības pievēršana runātājam, viņa sacītajam. Klausīšanās prasa īpašu koncentrēšanos un tiek vērtēta kā konstruktīva darbība, kuras laikā tiek analizēta dzirdētā informācija un veidojas sapratne par tās mērķi un pielietojumu, kā arī saskarsmes partnera vajadzību un interešu noteikšanu (Edeirs, 1999). Klausīšanās ir informācijas uztveres process, kura laikā informācija tiek saņemta, dekodēta, apjēgta un interpretēta.

Zinātniskajā literatūrā (Atwater, 1992; Kārnegijs, 1997; Edeirs, 1999) ir izdalīti četri klausīšanās veidi: aktīvā, empātiskā, kritiskā un pasīvā klausīšanās.

Aktīvā klausīšanās ir aktīva līdzdalība sarunā ar konkrēti izvirzītu mērķi, kur klausīšanās procesā piedalās visas cilvēka maņas un klausītājs reaģē uz dzirdēto informāciju. Tā ietver sevī koncentrēšanos, intensīvu piedalīšanos sarunā, prasmī uzdot jautājumus un sniegt atbildes reakciju (Kārnegijs, 1997). Aktīva klausīšanās pusaudžu vidē tiek novērota divos gadījumos: 1) savstarpējā komunikācijā ar vienaudžiem un citiem interesentiem par viņiem aktuālām tēmām; 2) ja mācību procesā apgūstamais saturs pusaudžiem ir personīgi nozīmīgs, saistošs un interesants.

Empātiskā jeb uzmanīgā klausīšanās ir prasme izjust otra cilvēka pašizjūtu, spēja sajust un uztvert sacīto tā, it kā tas notiktu ar pašu klausītāju. Par uzmanīgu klausītāju neviens nepiedzimst, šīs prasmes ir iespējams attīstīt visas dzīves

garumā (Atwater, 1992). Pusaudža klausīšanās prasme sāk veidoties bērnībā, kopīgās sarunās un rotaļās ar vecākiem, lasot grāmatas. Attīstība turpinās gan pirmskolas iestādē, gan sākumskolā, kā rezultātā tiek panākta pozitīva saskarsme un komunikācija. Uz runātāja sacīto reaģēt ar darbību, nozīmē, ka jebkura darbība no klausītāja puses izsaka vairāk par vārdiem. Ir novērots, ka pusaudži savu empātiju izrāda ļoti aktīvā veidā – apkampjoties visur un vienmēr.

Kritiskā klausīšanās nevar pastāvēt bez kritiskās domāšanas. Vecumā no 11 līdz 14 gadiem sāk veidoties formāli loģiskā domāšana. Tas nozīmē, ka pusaudzis ir spējīgs izdarīt secinājumus, piedāvāt interpretācijas, veidot hipotēzes, viņa doma ir kļuvusi elastīga un spēcīga (Šteinberga, 2013).

Pasīvā klausīšanās tiek raksturota kā informācijas uztveršana bez iedziļināšanās, ļaujot runātājam paust savas domas, uzskatus un idejas. To ir iespējams izmantot tad, ja runātājs ir ļoti uzbudināts un viņam ir nepieciešamība atbrīvoties no spriedzes, izteikt savu emocionālo stāvokli. Šādās situācijās klausītājam ir statiska nozīme un sarunā viņš piedalās ar neverbāliem saziņas līdzekļiem. Verbālie argumenti šādās situācijās nav iespējami, jo runātājs dzird tikai pats sevi (Kārnegijs, 1997).

Analizējot klausīšanās procesu, Dž. Edeirs klausītājus iedalījis vairākos līmeņos, izveidojis aprakstu un raksturojumu.

1. Slikts vai vājš klausītājs jau pašu klausīšanās procesu uztver ar nepatiku, jo uzskata, ka zina vairāk nekā runātājs. Bez jebkāda vērā ņemama iemesla sarunas laikā pārtrauc runātāju, aizrāda par viņa balsi, izskatu un runas manieri, domā par blakus lietām un viegli pakļaujas ārējiem traucējošiem apstākļiem, Šo klausītāju raksturo neuzmanība un garīgs kūtrums.
2. Labs klausītājs ir uzmanīgs, zinātkārs, bez aizspriedumiem, kurš cenšas pārvarēt ārējos traucējošos apstākļus. Lai cik neizdevusies būtu runas pasniegšanas maniere, viņš vienmēr spēj tai izsekot un izprast. Starp runātāju un klausītāju veidojas atgriezeniskā saite, kuru panāk ar kādu uzmundrinošu vārdu, galvas mājienu vai smaidu, tā parādot, ka runa ir uztverta.
3. Ļoti labs klausītājs ir ieinteresēts, klausās labprātīgi, precīzi uztver informāciju, skaidri sadzird sacīto un spēj saviem vārdiem dzirdēto atstāstīt. Ļoti labam klausītājam piemīt kritiskā domāšana, viņš spēj novērtēt dzirdētā saturu un vērtību, kā arī atbilstoši reaģēt.
4. Izcils klausītājs spēj saprast arī to, kas netiek skaidri pateikts, uztver zemtekstu, atklāj runātāja vārdu patieso nozīmi, ir gatavs ieraudzīt un attiecīgi interpretēt neverbālos saskarsmes izteiksmes līdzekļus. Šo klausītāju raksturo iejūtība, izturība, empātija, pacietība, zinātkāre, inteliģence, radošs gars, intuīcija un humors (Edeirs, 1999).

Klausīšanās procesu spēj ietekmēt dažādas barjeras: fiziskās, garīgās, faktiskās un semantiskās, kuras pārvarot, pusaudzis kļūst par ļoti labu vai izcilu klausītāju (Kārnegijs, 1997). Lai par tādu kļūtu, ir nepieciešams ievērot vairākas likumsakarības: klausies labprātīgi un ieklausies runātāja sacītajā, informāciju uztver precīzi; interpretē runātāja viedokli, atstāsti dzirdēto un vērtē uzmanīgi, lai idejas izmantotu saviem radošajiem mērķiem; reaģē atbilstoši situācijai, jo kā atbildes ir uztverami gan aplausi, gan klusēšana (Edeirs, 1999).

Raksta autore ir novērojusi, ka cilvēki savā aizņemtībā un ikdienas steigā, arvien retāk atrod laiku sarunām. Pat vienas ģimenes locekļi savā starpā runā maz, jo katrs ir aizņemts ar sev vien zināmu svarīgu nodarbošanos. Tehnoloģiju attīstības rezultātā centrālo vietu ģimenē ieņem telefons, televizors un/vai dators, dažās ģimenēs pat vairāki. Arī skolā, teritorijā, kur starpbrīžos uzturas pusaudži, valda klusums, jo gandrīz katra skolēna skatiens ir vērsts telefona ekrānā. Klusumu pārtrauc smiekli, daži iestarpināti vārdi par redzēto vai dzirdēto. Tāpēc rodas pamatots jautājums: vai pusaudži, kas nav apguvuši prasmi klausīties un sarunāties, būs spējīgi saklausīt mūzikas izteiksmes līdzekļu dažādību un muzikālo tēlu bagātību?

Mūzikas klausīšanās būtība *The guidelines of listening music*

Cilvēki ir apveltīti ar fizioloģisku spēju dzirdēt un atšķirt trokšņus no melodijas. Izkopt muzikālās spējas, iedziļināties un izprast mūzikas saturu, sajūst emocionālo lādiņu, attīstīt mūzikas uztveri – tas ir sistemātisks un ilgstošs mūzikas pedagoga darbs. Tas nozīmē iesaistīt pusaudzi aktīvā radīšanas procesā, pārdzīvot komponista jūtas un noskaņojumu, radīt apstākļus līdzpārdzīvojumam. Zinātnieki (Готсдинер, 1993; Иванченко, 2001; Выготский, 2005) akcentē darbības nozīmi skolēnu muzikālajā izglītošanā, jo daudzveidīga muzikālā darbība dod iespējas attīstīt muzikālās spējas, pašapliecināties un sekmēt viņu muzikāli estētisko mērķu sasniegšanu. Mūzikas klausīšanās ir viens no darbības veidiem, kas sekmē uztveres attīstību, savukārt uztvere ir muzikālo darbību pamats. Ar mūzikas klausīšanās darbību saistītā mūzikas uztvere balstās teorijās, kas pēta, kā kognitīvie procesi un iepriekš gūtās zināšanas ietekmē cilvēka uztveri. Ir pierādīts, ka visi psihiskie procesi ir savstarpēji saistīti un notiek mijiedarbībā, savukārt mūzikas klausīšanās ir cieši saistīta ar kognitīvajiem procesiem: uztveri, uzmanību, atmiņu, domāšanu un iztēli (Анисимов, 2004; Выготский, 2005; Sternberg, 2012). Analizējot iepriekš minēto zinātnieku atziņas var secināt, ka mūzikas klausīšanās procesā visi psihiskie procesi ir savstarpēji saistīti un notiek mijiedarbībā: *uztvere – izpratne – domāšana – uzmanība – atmiņa – anticipācija – iztēle - emocionalitāte.*

Pusaudžu mūzikas uztveres veidošanās ir pakāpenisks attīstības process, ģenētiski nosacīts un sekmējams muzikālajā darbībā. Ļ. Vigotska koncepcijā mūzikas klausīšanās ir cieši saistīta ar mūzikas uztveri kā polimotivētu darbību, kas balstoties uz iegūto muzikālo pieredzi, paredz klausīšanās, skaņdarba tēla pārdzīvojuma un vērtēšanas spēju veidošanos. Līdz ar to tā satura izpratni, personiskās attieksmes veidošanos un selektīvas gaumes izpausmi attiecībā pret iegūstamo mūzikas informāciju (Выготский, 2005). Izpratne ir cieši saistīta ar domāšanu, kuras funkcija ir: arvien pilnīgāka un daudzpusīgāka objekta atveidošana domāšanā, attiecībā pret uztveramo skaņdarbu, kas saistīta ar estētisko vērtējumu, mūzikas satura izpratni, ideju un pārdzīvojumu raksturu, ar visiem izteiksmes līdzekļiem, kas veido muzikālo tēlu (Myer, 2003; Анисимов, 2004). Ar uzmanību un ar tās palīdzību indivīds aktīvi atlasa ierobežotu informācijas apjomu, ko iegūst no izjūtām, atmiņām un citiem kognitīvajiem procesiem. Svarīgi ir zināt pusaudža uzmanības apjoma ierobežotās iespējas, kas nosaka objektu daudzumu, ko var uztvert noteiktā laika posmā. Spēcīgāk veidojas tie priekšstati, kam pievienojas pozitīvas atmiņas par līdzīgu darbības pieredzi (Sternberg, 2012).

Anticipācija balstās uz iepriekš dzirdētiem skaņdarbiem, jo pusaudzis spēj paredzēt tikai to, ko pazīst. Šī iemesla dēļ atmiņai ir izšķiroša loma mūzikas uztverē un emocionalitātes veicināšanā. Raksturojot pusaudžu iztēli, kas ir subjektīva un nepastāvīga, to var nodēvēt kā tiltu uz tēlu, attēlu un valodu – uz visu to, kas saistīts ar mākslas izteiksmes līdzekļiem. Mūzika ir jūtu valoda, kuras saturs var ietekmēt pusaudžu individuālās izpausmes, rosinot attiecīgo jūtu rašanos. Mūzikas izraisīto pārdzīvojumu fonā ir personīgajā dzīvē izjustais, jo tikai tad pusaudzis spēs saklausīt, izprast, iedziļināties un uztvert dzirdēto (Холопова, 2000). Lai varētu spriest par māksliniecisku muzikālā tēla uztveri, ir nepieciešama pusaudžu estētiski emocionāla reakcija, kuras pamatā ir aktīvs domāšanas darbības process, kas savukārt balstās uz zināšanām, prasmēm un atmiņu. Ja plašāk un daudzveidīgāk mūzikas stundā tiek izskaidrota mūzikas saikne ar dzīvi un pusaudzis pamatīgāk iedziļinās autora iecerē, jo lielāka ir varbūtība, ka viņam radīsies personificētas, loģiskas, ar dzīvi saistītas asociācijas (Marčenko, 2012).

Mūzikas metodikā ir izstrādāts klausīšanās process, kuru ievērojot, ir iespējams veicināt pusaudžu mūzikas klausīšanās prasmes. *Ievads* ir uzmanības fiksēšana, emocionālās atmosfēras un koncertsituācijas radīšana, skolotāja īsa un emocionāla ievadrūna, iepazīstināšana ar skaņdarba galveno tēmu. *Ekspozīcijas* galvenais nosacījums ir mūzikas uztveres veselums, nepauzēt, neizteikt piezīmes, nenovirzīt klausītāju uzmanību ar liekām kustībām. Skolotājs ir vislabākais mūzikas klausītājs, kurš spēj iegremdēties mūzikā, radīt emocionālo tēlu un būt par paraugu pusaudžiem. Par mūzikas uztveres kvalitāti mūzikas stundās var spriest pēc: klusuma klausīšanās laikā; pozas, mīmikas un skatiena; kustībām un

emocionālās reakcijas skaņdarbam beidzoties. *Skaņdarba analizēšanas* galvenais uzdevums ir atklāt tā raksturu un muzikālo tēlu, ar mūzikas izteiksmes līdzekļu un mūzikas valodas elementu palīdzību. Šo procesu dēvē par mākslinieciski pedagoģisko, jo pusaudzis mācās klausīties un izprast mūziku, bet skolotājs procesu vada. *Reprīze* ir svarīgs moments klausīšanās procesā, jo pēc analizēšanas noteikti jāseko skaņdarba atkārtojumam, lai jautājumu un atbilžu rezultātā uzzinātais tiktu saklausīts. Pēdējais klausīšanās procesa solis ir *koda*, tas nozīmē, ka katru skaņdarbu atkārti 3.-4. mācību stundas pēc kārtas. Lai skaņdarbs nostiprinās ilglaicīgā atmiņā, to pēc laika atkārti vēl un vēl (Рачина, 2007; Ильина, 2008).

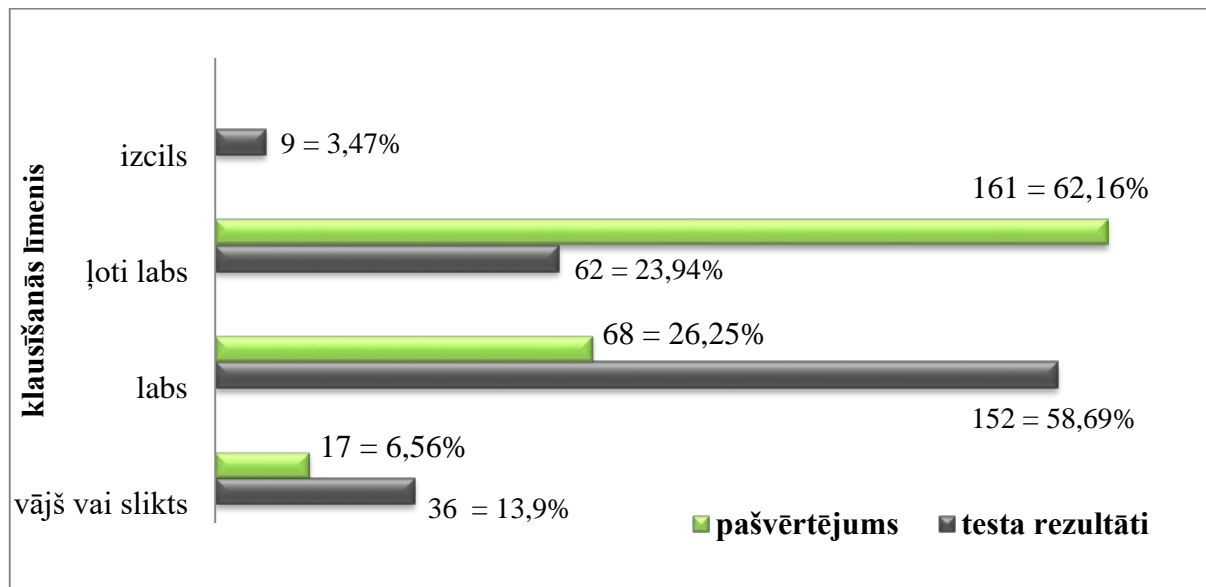
Mūzikas uztveres pilnveide ir viens no galvenajiem mūzikas pedagoģijas uzdevumiem. Analizējot iepriekš minēto zinātnieku teorijas un mūzikas metodiku, var secināt, ka no visām muzikālajām darbībām, mūzikas klausīšanās ir pati svarīgākā, jo dziedāšana un instrumentu spēle nav iespējama bez klausīšanās procesa. Klausīties uzmanīgi, apzināti un emocionāli, klausoties arī dzirdēt – šīs prasmes veidojamas pirmskolas vecumā un jāturpina pilnveidot skolā. Kvalitatīvai mūzikas uztveres procesa nodrošināšanai ir nepieciešama pedagoģiskā procesa mērķtiecīga organizācija, veidojot vidi, kurā pusaudži jūtas brīvi savā izziņas darbībā. A. Špona uzsver, ka šādu vidi nodrošina humāns pedagoģiskais darbības stils un „tā galvenā īpatnība ir skolēna un skolotāja mērķu tuvināšanās, skolēna vajadzību apmierināšana” (Špona, 2004: 77). Profesionāla mūzikas skolotāja, regulāra un metodiski pareizi vadīta procesa rezultātā, ir iespējama pusaudžu mūzikas klausīšanās prasmju apguve un to pielietojums ikdienas dzīvē.

Pētījuma metodes un rezultāti ***Methods and Results of Research***

2017. gada pavasarī tika veikts pētījums, kura mērķis bija noskaidrot, pusaudžu skolas pedagoģiskajā procesā apgūto mūzikas klausīšanās prasmju pielietojumu ikdienas dzīvē. Pētījuma metodes: pedagoģiskā novērošana, testēšana, anketēšana, datu apstrāde. Pētījuma bāze – Brocēnu un Druvas vidusskolas, Gaiķu, Remtes, Blīdenes, Lutriņu un Striķu pamatskolu pusaudži vecumā no 11.-16. gadiem, kopā 288 respondenti. Pētījuma ietvaros tika izpildīti divi uzdevumi.

1. uzdevums: tests. Testu „Vai tu proti klausīties?” brīvprātīgi izvēlējās pildīt 259 pusaudži un ar tā palīdzību tika noskaidrots katra klausīšanās līmenis, kuram detalizētu skaidrojumu devis Dž. Edeirs un tā apraksts ir atrodamas teorētiskajā daļā „*Klausīšanās kā viens no verbālās saskarsmes veidiem*”. Testa rezultāti apstiprina autores novērojumus mācību stundās, ka apmēram ceturtdaļa jeb 27,41 % no visiem pusaudžiem ir ļoti labi vai izcili klausītāji. Tas nozīmē, ka

viņiem ir motivācija klausīties, spēja precīzi uztvert informāciju, izdarīt secinājumus, atlasīt un paturēt atmiņā sev svarīgāko (sk. 1. att.).



1. att. Pusaudžu klausīšanās līmeņi

Fig. 1. Teenagers` listening levels

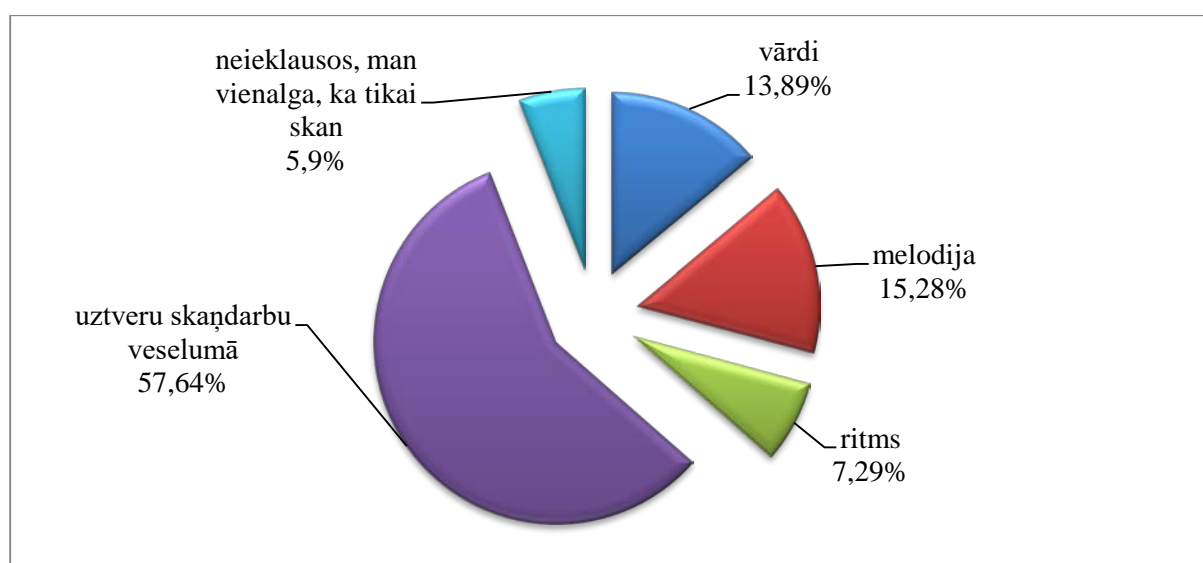
Diemžēl jāsecina, ka katrā klasē ir viens vai vairāki pusaudži, kuriem ir grūtības koncentrēties noteiktai darbībai un noturēt uzmanību. Viņi ir tie, kas traucē mācību procesu. Savukārt iepriecina fakts, ka 58,69 % no visiem pusaudžiem ir tie, ar kuriem ir iespējams pilnvērtīgs darbs, izmantojot daudzveidīgas metodes, modernās tehnoloģijas, radot motivāciju un savstarpēji sadarbojoties (skolotājs – skolēni; skolēni – skolēni). Interesanti ir salīdzināt testa rezultātus ar pusaudžu pašvērtējumu. Kā redzams 1. attēlā, tad jaunajai paaudzei ir ļoti augsts pašvērtējums – 88,41 % sevi uzskata par ļoti labiem un labiem klausītājiem. Kritiski sevi vērtē tikai 6,56 % pusaudžu. Starp visiem pusaudžiem 5,02 % bija tādi, kas nevarēja noteikt savu piederību, kādai no klausītāju grupām.

2. uzdevums: anketa. Anketas jautājumi tika sagrupēti divos blokos: 1) mūzikas klausīšanās paradumi un 2) skolas pedagoģiskajā procesā iegūto mūzikas klausīšanās prasmju pielietojums ikdienas dzīvē.

Atbildes liecina, ka 59,38 % pusaudžu mūziku klausās katru dienu, bet 29,86 % - gandrīz katru dienu. Dažādu iemeslu dēļ 10,7 % jeb 29 pusaudži mūziku klausās reti. Autores un citu skolu aptaujā iesaistīto mūzikas skolotāju novērojumi liecina, ka tie ir pusaudži, kuriem lietošanā ir mobilie telefoni bez tehniskām iespējām klausīties mūziku un mājās nav datora. Populārākais klausīšanās veids ir klausīšanās telefonā ar *austiņu* palīdzību. Vidējais ilgums, ko pusaudzis patērē

klausoties mūziku ir 3 stundas dienā. Laika nogrieznī tas būtu šādi: sākot no 10-20 minūtēm līdz 14 stundām.

Mūzika ir ļoti krāsaina un daudzveidīga, tāpēc pusaudžiem ir iespējas izvēlēties tādus mūzikas žanus, kas patīk vislabāk, kas atbilst viņa noskaņojumam un muzikālajai gaumei. Pusaudžu mūzikas uztveri ietekmē vairāki faktori, kurus var iedalīt trīs grupās: fizioloģiskie, pedagoģiskie un sociālie, kā arī mūzikas klausīšanās laikā darbojas psiholoģiskais uztveres mehānisms: muzikālā dzirde, atmiņa, domāšana un emocionālā atsaucība. Lai noskaidrotu mijsakarību starp mūzikas uztveres spēju un klausīšanās uztveres kvalitatīvo līmeni, svarīgi uzzināt, ko klausīšanās laikā pusaudzis uztver. (sk. 2. att.)



2. att. Mūzikas uztveres komponenti
Fig. 2. Music comprehension components

No atbildēm var secināt, ka 57,64 % pusaudžu, klausoties mūziku, uztver to veselumā. Ja vārdi saskan ar melodisko līniju un ritma zīmējums ar iekšējo, tā brīža pulsāciju, tad muzikālais tēls rada patīkamas un pozitīvas izjūtas. Kā saka paši pusaudži: „forša mūzika!”. Vārdi, melodija un ritms ir izdalīti atsevišķi vērtējamās pozīcijās, lai konstatētu, ka pusaudzis ne tikai klausās mūziku, bet arī uztver un vērtē dzirdēto. Autores pedagoģiskā pieredze un ilgstoša novērošana ļauj secināt, ka klausoties muzikālo kompozīciju, tiek konstatēti vairāki mūzikas uztveres līmeņi:

1. mūziku klausās, uztver un vērtē;
2. mūziku uztver veselumā;
3. mūzikas saturs nav svarīgs, mūzika ir nepieciešama kā fons citām darbībām.

Pusaudži ir ļoti dažādi un tikpat dažādas ir viņu intereses un vaļasprieki, tāpēc vienmēr būs tādi, kuriem mūzika ir nepieciešama kā fons un saturs nav svarīgs.

Salīdzinot testa rezultātus ar anketas atbildēm, var konstatēt, ka klausīšanās līmenis atspoguļojas pusaudžu atbildēs par mūzikas uztveri.

1. tab. **Klausīšanās un mūzika uztveres līmeņu salīdzinājums**
Table 1 Comparison between listening to music and its comprehension

Klausīšanās līmeņi	%	Mūzikas uztveres līmeņi	%
ļoti labs, izcils	29,72	mūziku klausos, uztveru, vērtēju	36,46
labs	58,69	uztver veselumā	57,64
slikts vai vājš	13,9	mūzika kā fons	5,9

Ļoti labs un izcils klausītājs ir tas, kurš mūziku ne tikai klausās, bet arī dzird un uztver dzirdētā skaņdarba nianšes, ieklausās vārdos, melodijā, izjūt ritmisko vibrāciju. Vārdi, melodija vai ritms, kurš no šiem komponentiem mūzikas klausīšanās laikā izvirzās priekšplānā, ir atkarīgs gan no iekšējiem, gan ārējiem konkrēto mirkli ietekmējošiem faktoriem. Starp šiem klausītājiem ir pusaudži, kas mācās vai kādreiz ir mācījušies mūzikas skolā, guvuši padziļinātu izglītību mūzikā un tie, kuriem mūzika ir sirdslieta.

Labs klausītājs mūziku necenšas analizēt, bet uztver to veselumā. Pusaudža vērtējums ir „patīk” vai „nepatīk”, viņš izvēlas klausīties sev saprotamus un interesējošus mūzikas žanus. Atbildes uz jautājumiem liecina, ka 34,38 % pusaudžu tuvs ir Hip-hops un 23,61 % - elektroniskā mūzika. Rok un popmūzikā vairāk vai mazāk, vienkāršāka vai sarežģītāka, tomēr dominē melodiskā līnija, un šo mūziku izvēlas klausīties 30,91 % pusaudžu.

Pusaudzis, kuram ir slikts vai vājš klausīšanās līmenis, mūziku uztver kā fonu, kā papildinājumu citai darbībai. Viņu atbildes liecina par to, ka „nav svarīgi kas skan, lai tikai skan”.

Analizējot iegūtos datus var secināt, ka klausīšanās uztveres kvalitatīvais līmenis ir mījsakarībā ar mūzikas uztveres spēju. Ja attīstīta klausīšanās uztveres kvalitāte pusaudzim ir augstāka, tad arī mūzikas uztveres spēja ir lielāka. Savukārt, ja attīstīta klausīšanās uztveres kvalitāte pusaudzim ir zemāka, tad arī mūzikas uztveres spēja ir mazāka.

Secinājumi **Conclusions**

Klausīšanās ir vissvarīgākais un visbiežāk lietotais komunikāciju veids. Zinātniskajā literatūrā ir izdalīti četri klausīšanās veidi: aktīvā, empātiskā, kritiskā un pasīvā klausīšanās. Aktīva klausīšanās pusaudžu vidū tiek novērota divos gadījumos: 1) savstarpējā komunikācijā ar vienaudžiem un citiem interesentiem, par viņiem aktuālām tēmām; 2) ja mācību procesā apgūstamais saturs pusaudžiem ir personīgi nozīmīgs, saistošs un interesants.

Mūzikas uztveres pilnveide ir viens no galvenajiem mūzikas pedagoģijas uzdevumiem. No visām muzikālajām darbībām, mūzikas klausīšanās ir pati svarīgākā, jo dziedāšana un instrumentu spēle arī nav iespējama bez klausīšanās procesa.

Pilnvērtīgs mācību process mūzikas stundā ir iespējams, ja skolotājs savā darbībā izmanto daudzveidīgas metodes un modernās tehnoloģijas, rada motivāciju un notiek savstarpēja sadarbība: skolotājs – skolēni; skolēni – skolēni.

Klausoties muzikālo kompozīciju, tiek konstatēti vairāki mūzikas uztveres līmeņi: 1) mūziku klausās, uztver un vērtē; 2) mūziku uztver veselumā; 3) mūzikas saturs nav svarīgs, mūzika ir nepieciešama kā fons citām darbībām.

Empīriskais pētījums apliecina, ka klausīšanās uztveres kvalitatīvais līmenis ir mījsakarībā ar mūzikas uztveres spēju. Ja attīstīta klausīšanās uztveres kvalitāte pusaudzim ir augstāka, tad arī mūzikas uztveres spēja ir lielāka. Savukārt, ja attīstīta klausīšanās uztveres kvalitāte pusaudzim ir zemāka, tad arī mūzikas uztveres spēja ir mazāka.

Summary

Listening is the most important and the most used type of communication. Scientific literature distinguishes four types of listening: active, emphatic, critical, and passive listening. Active listening among teenagers has been observed in two cases: 1) mutual communication with peers and other interested about topics that are important to them; 2) if the learning process content is significant personally to them, if it is fascinating, and interesting. Teenagers, who have not acquired listening and communication skills, will not be able to listen and recognize music's various means of expression and the richness of musical characters.

The perfection of music comprehension is one of the most important objectives of music pedagogy. From all the musical actions, music listening is the most important because singing and playing an instrument is not possible without the process of listening.

Profound learning process during music lesson is possible if the teacher uses various methods and modern technology, creates motivation and mutual cooperation occurs (teacher-students; students-students).

While listening to musical composition several music perception levels are recognized: 1) music has been listened to, perceived, and evaluated; 2) music is being perceived as a whole; 3) the content of music is not important, music is needed as a background.

While analyzing the acquired data it can be concluded that the qualitative listening perception level is in interconnection with the ability to perceive music. If the level of teenager`s listening quality is higher then also their ability to perceive music is greater. However, if the level of teenager`s listening quality is lower then their ability to perceive music is smaller.

Literatūra References

- Atwater, E. (1992). *I Hear You: a listening skills handbook*. Walker&Co; Rev Sub edition, 122 p. Retrieved from: <https://www.amazon.com/Hear-You-Listening-Skills-Handbook/dp/0802773621>
- Edeirs, Dž. (1999). *Efektīva komunikācija. Vissvarīgākā vadības mākslas metode*. Rīga: SIA „Asja”.
- Kārnegijs, D. (1997). *Līderis tevī*. Rīga: Jumava.
- Marčēnoka, M. (2012). *Mūzikas uztveres un muzikālās gaumes mijiedarbības dialektika*. Rēzekne: Rēzeknes Augstskola.
- Myers, D. G. (2003). *Psychology, 7.Edition*. New York: Worth Publishers.
- Sternberg, R. J. (2012). *Cognitive Psychology*. Retrieved from: <https://www.amazon.com/Cognitive-Psychology-Robert-J-Sternberg/dp/1133313914>
- Špona, A. (2004). *Audzināšanas teorija un prakse*. Rīga: RaKa.
- Šteinberga, A. (2013). *Pedagoģiskā psiholoģija*. Rīga: RaKa. katedra, 126-138. lpp.
- Анисимов, В. П. (2004). *Диагностика музыкальных способностей детей*. Москва: Владос.
- Выготский, Л. С. (2005). *Психология развития человека*. Москва: «Смысл».
- Готсдинер, А. (1993). *Музыкальная психология*. Москва: Магистр.
- Иванченко, Г. В. (2001). *Психология восприятия музыки*. Москва: Смысл.
- Ильина, Е. Р. (2008). *Музыкально – педагогический практикум*. Москва: Академический Проект.
- Рачина, Б. С. (2007). *Технологии и методика обучения музыке в общеобразовательной школе*. Санкт – Петербург: Композитор.
- Холопова, В. Н. (2000). *Музыка как вид искусства*. Санкт – Петербург: Лань.

ART DECO STILA IEZĪMES 20. GS. DIZAINERU SONJAS DELANĪ UN POLA PUARĒ TEKSTILDARBOS

Art Deco Style's Features in the Textile Works of Designers Sonia Delaunay and Paul Poiret

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Abstract. *Art Deco is an artistic term that stands for an elegant eclectic design style dating back to the 1920s. Style has affected virtually all industries, including architecture, fine arts, applied arts, interior design, industrial design, fashion and jewellery, as well as painting, graphics and cinema. Art Deco architecture and arts expanded on other movements - Constructivism, Cubism, Modernism, Bauhaus, and Futurism. Principles of Constructivism and Cubism are also used in contemporary textile patchwork and quilt. The aim of the paper: exploration of the features of Art Deco style in the textile works of 20th century designers - Sonia Delaunay and Paul Poiret. The methods of the research: exploration of theoretical literature and Internet resources, the experience of reflection.*

The research emphasizes Sonja Delaunay's particular importance of textile works in the development of contemporary quilt in the 21st century.

Keywords: *20st century, Art Deco, contemporary quilt, designers, patchwork and quilt, Paul Poiret, Sonia Delaunay, textile works.*

Ievads

Introduction

Art Deco ir mākslas termins, kas apzīmē elegantu eklektisku dizaina stilu 20. gs. 20.-tajos gados (Werle, 2010). Stils ietekmēja praktiski visas nozares, ieskaitot arhitektūru, tēlotāja mākslu, lietišķo mākslu, interjera dizainu, rūpniecisko dizainu, modes un juvelierizstrādājumus, kā arī glezniecību, grafiku un kino.

Art Deco perioda dizaineri Delanī (*Delaunay*), Rūlmans (*Ruhlmann*), Henri (*Henry*), Marots (*Marrot*), Difrēns (*Dufrene*), Benediktus (*Benedictus*) un daudzi citi radīja jaunu dekoratīvo audumu dizainu. Art Deco tekstila izteiksmīgums - ar minimālismu un dekoru bagātību, ar grezniem ziedu vijumiem un smalkām ģeometriskās krāsu un faktūru niansēm – turpina dzīvot arī mūsdienīgā tekstilmozaikā. Art Deco tekstils piesaista mūsdienu mākslinieku uzmanību ar savdabību, sarežģītību un ģeometriskām kompozīcijām.

Pētījuma mērķis - Art Deco stila raksturīgo iezīmju izpēte 20. gs. Dizaineru - Sonjas Delanī (*Sonia Delaunay*) un Pola Puarē (*Paul Poiret*) darbos.

Pētījumā izmantota teorētiskā pētīšanas metode – literatūras un internetresursu analīze, kā arī personīgās pieredzes refleksija.

Pētījumā uzsvērtā Sonjas Delanī tekstildarbu īpašā nozīme mūsdienu tekstilmozaikas attīstībā. Rakstā analizētas dizaineru veidotās ģeometriskās kompozīcijas.

Art Deco stila estētika kā fons 20. gs. tekstila dizaineru radošajai darbībai *Art Deco style aesthetics as a background for 20th century's textile designers' creative works*

Art Deco termins kļuva populārs no izstādes *Exposition Internationale des Arts Décoratifs et Industriels Modernes*, kas bija Parīzes modernā stila (*style moderne*) kulminācija 1925. gadā (Fogg, 2013). To rīkoja Franču mākslinieku asociācija, pazīstama ar nosaukumu *La Societe des Artistes Decorateurs* (angļu val. - *society of decorator artists*). Tās dibinātāji bija: Hektors Gimards (*Hector Guimard*), Eižens Grasē (*Eugene Grasset*), Rauls Lahenāls (*Raoul Lachenal*), Pols Folo (*Paul Follot*) Moriss Difrēns (*Maurice Dufrene*) un Emīls Dekūrs (*Emile Decour*). (Chandler, 1988.).

Art Deco estētika atspoguļojās arī ēku apjomu veidolā, arhitektonisko elementu kārtojumā kombinējot kontrastējošas ģeometriskas formas. Daudzu celtnu iekštelpās Art Deco ģeometriskā ornamentālā valoda skan kāpņu margu rakstos, zvaigžņveidīgās vai starveidīgās griestu rozetēs vai lielākos reljefos veidojumos, būvapkalmos, kā arī mēbelēs, gaismas ķermeņos un citos telpu iekārtas priekšmetos (Krastiņš, b.g.).

Vētrainā starpkaru laika dzīves izrāde prasīja atbilstošas dekorācijas, adekvātu stilu. Ārišķīgs, ekstravagants, izaicinošs un pretrunu pārpilns kā pati dzīve, Art Deco pirmām kārtām tiek uzskatīts par modes virzienu dekoratīvajās mākslās. Tai pašā laikā tas ir aptvēris visdažādākās sfēras – mākslu, arhitektūru, interjeru, apģērbu modi, rūpniecisko dizainu, reklāmu, ietekmes zonai sniedzoties no debesskrāpja līdz smaržu pudelei. Art Deco stils veidojies stihiski, uzsūcot sevī mākslas avangarda virzienu sasniegumus (fovisma krāsas, kubisma formas un abstrakcijas, ekspresionisma izteiksmīgās deformācijas, futūrisma dinamiku), brīvi aizņemoties Bauhaus estētikas un funkcionālisma idejas, sajūsminoties par visa veida eksotiku un pirmatnējām kultūrām, neaizmirstot arī erotiku un sievietes jauno vietu sabiedrībā (Martinsone, 1998).

Radikālie jaunievedumi Art Deco stilā un iekšējā apdare ietekmēja arvien jaunus tekstilizstrādājumus, un laika gaitā apģērbu, polsterējumu, tapetes un grīdsegas, audumi un tērpi arvien vairāk atspoguļoja kustības modernismu, eleganci un kustību. Kā tēlaini izteicies izcilais auduma dizainers, franču

mākslinieks Rauls Dafijs (*Raoul Dufy*) - gleznas ir izlijušas no to rāmjiem un iekrāsojušas kleitas un sienas (Casparowiak, 2008). Art Deco stila laika periods tiek dalīts posmos: Agrīnais Art Deco no 1911.gada līdz 1929. gadam un Vēlīnais Art Deco 1930. gada līdz 1946. gadam (Jirousek, 1995). Art Deco stils arhitektūrā un mēbeļu dizainā kalpoja kā iedvesmas avots tekstila izstrādājumu radīšanai. Tālaika estētiskie risinājumi atspoguļojas 20. gs.20.-to gadu modes zīmējumā un ilustrācijās - taisnas, konkrētas līnijas un ģeometriski laukumi, kas harmoniski papildināti ar liektām, plūstošām līnijām. Šis stila novirziens padarīja sievietes par dievietēm, tā šarms, tā pievilcība paceļas kopā ar debesskrāpjiem (Pavasaris, 2011).

Art Deco iezīmes savos darbos izmantoja vairāki tekstila dizaineri un modes mākslinieki: Gerda Vegener (*Gerda Wegener*), Leons Bonote (*Leon Bonnotte*), Armands Valē (*Armand Vallée*), Pols Merā (*Paul Méras*), Eduards Holūzs (*Edouard Halouze*), Moriss Takū (*Maurice Taquoy*), Umberto Bruneski (*Umberto Brunelleschi*), Alfons Muča (*Alphonse Mucha*), Rauls Dafijs (*Raoul Dufy*) Pols Iribe (*Paul Iribe*), Džordžs Lapaps (*Georges LaPape*), Džordžs Barbjē, (*George Barbier*), Erte jeb Romāns de Tirtofs (*Romain de Tiroff*), Čārlzs Martins (*Charles Martin*).

Dizaineres Sonjas Delanī krāsu simbolisms

Colour symbolism in the designer's Sonia Delaunay textile works

Raksta autore pētīja vairāku mākslinieku radošo veikumu Art Deco stila periodā. Tikai daži dizaineri Art Deco laika periodā pievērsās īpaši tekstila tehnikai - tekstilmozaīkai, kur tekstildarbs tiek veidots pēc mozaīkas principa, kombinējot neliela izmēra auduma gabalus un tos sašujot atbilstoši izvēlētajai kompozīcijai. Viena no pazīstamākajām Art Deco perioda māksliniecēm - Sonja Delanī (*Sonia Delaunay*), kas veidojusi dizainu apģērbiem, audumiem, kā arī gleznojusi, izstrādājusi abstraktas kompozīcijas (Kruse, 2012). Viņa bija viena no retajām māksliniecēm, kas strādājusi arī tekstilmozaīkas tehnikā, pietuvinot tekstila izstrādājumu mākslas darbam. Delanī radīja tekstilmozaīkas ar dziļāku nozīmi, ja salīdzina ar tradicionālajiem tekstilizstrādājumiem, kas attīstījušies no vēsturiskajām „lupatiņu” segām.

Dizainere Sonja Delanī (*Sonia Delaunay*) jeb Sāra Iljinična Šterna, dzimusi 1885. gada 14. novembrī Hradiskā (Hradyzk), Ukrainā, toreizējā Krievijas impērijas teritorijā (šodien- Poltavas apgabals Ukrainā) (Jamie, 2015). Piecu gadu vecumā Sonju adoptēja Terku ģimene, viņai bija nodrošināta privilēģēta audzināšana, Sonja tika iepazīstināta ar mākslas muzejiem un galerijām. Sešpadsmit gadu vecumā Sonjas zīmētprasmi atzinīgi novērtēja skolotāji. Kad Sonjai palika 18 gadu, viņa tika nosūtīta mācīties uz mākslas skolu Vācijā, kur pabeidza arī Karlsrūes Mākslas akadēmiju, vēlāk viņa nolēma pārcelties uz Parīzi

un iestājās Mākslas akadēmijā - *Académie de La palette Montparnasse*. Neapmierināta ar mācībām - viņa tās uzskatīja par pārāk radošumu slāpējošām un kritizēja tās, viņa pavadīja mazāk laika akadēmijā, bet vairāk galerijās visā Parīzē. Viņas darbos šajā periodā jūtama spēcīga impresionistu ietekme, fovisma vēsmas, tostarp Anrī Matisa un Derēna mākslas ietekme (Jamie, 2015).

Sonja ieguva atzinību mākslinieku aprindās, veidojot izstādes UHDE galerijā, apprecējās ar galerijas īpašnieku Vilhelmu Uhdi, vēlāk - ar Robertu Delanī (Stern, 2005). 1911.gadā Sonja Delanī izveidoja tekstilmozaīkas segu dēla gultiņai, sega tika izveidota spontāni un tajā izmantoti dažādu krāsu un ģeometriskas formu laukumi (tagad atrodas National d'Art Moderne muzeja kolekcijā, Parīzē).

1911.-1912. gads Eiropā iezīmēja abstraktās mākslas sākumu un šajā laikā Sonja Delanī savos radošajos darbos uzsāka eksperimentus ar krāsu paleti. Iepzinusi Blaise Cendrars dzeju, Sonja iedvesmojās no tās, dzejas tēlainība un ritms izpaudās arī Delanī mākslā (Carelli, 2016).

Laikmetīgās mākslas kritiķi atzīst šo laiku ka lūzuma periodu, kad Sonja attālinājās no perspektīvas un naturālisma viņas mākslā. Apmēram tajā pašā laikā, kad pirmie kubistu darbi tika izstādīti Parīzē, Sonja un Roberts Delanī uzsāka radošus eksperimentus mākslā, nosaucot tos par krāsu mākslas un dizaina simultānismu (franču val. - *simultanéisme*) (Salter, 2011). Simultānais dizains rodas, ja blakus novietotie raksti ietekmē viens otru (skat. 1. att.), tas ir līdzīgs pointilisma krāsu teorijai (franču val. - *pointillism*).



1. att. **Simultānās kleitas. Trīs sievietes. 1925**

Fig. 1. Simultaneous Dresses. The three women. 1925 (<http://www.tate.org.uk/whats-on/tate-modern/exhibition/ey-exhibition-sonia-delaunay>)

Delanī gleznojot izmantoja krāsu savstarpējo ietekmi, kas radīja kustības ilūziju. Šis efekts redzams Delanī dizainētajos audumos, tērpos, skatuves kostīmos, sienas dekoros u.c. (skat. 2. att.).



2. att. Sonjas Delanī māksla un mode

Fig. 2. Art and Fashion by Sonia Delaunay (<http://www.dwell.com/event-spotlight/slideshow/art-and-fashion-sonia-delaunay?slide=4&c=y&paused=true#4>)

Sonjas Delanī veidotajās kompozīcijās dominē ģeometriskie laukumi. Izmantotās krāsas ir spilgtas, nereti kombinēti pamatkrāsu laukumi (sarkans, dzeltens, zils), bet līdzsvaram tiek izmantots pelēkzaļais krāsu tonis. Dizaineres kompozīcijās izmantotas arī ahromatiskās krāsas. Mākslinieces veidotās kleitas it kā dzīvo patstāvīgu dzīvi, sievietes figūra tajā attēlota kā kubiski „izcirsta” no krāšņa materiāla, no lieliem krāsu laukumiem, Delanī pievērsa uzmanību rotājumam, atrodot jaunas iespējas tērpa dekorēšanai (skat. 3. att).



3. att. Sonja Delanī. Tērpu projekti. 1924-1925
Fig. 3. *Projects for dresses by Sonia Delaunay 1924-1925*
(<http://garmentozine.com/tag/celine/>)

Sonja Delanī savā mākslā virzījās pret tā laika Franču modes straumi, attīstot savu ideju par kleitu kā māksliniecisku vērtību. Delanī, apzināti izvairoties no konvencijas un modes cikla, kas diktē sabiedrības tērpa izskatu, kas uzspiests masām, paturēja savu skatījumu un vizuālo kodu, kas tika nodots caur tērpu (skat. 4. att.).



4. att. Delanī pašas dizainētajos tērpos

Fig. 4. Delaunay in her own designs

(<http://garmentozine.com/tag/celine/>; http://www.abitare.it/en/archive/2011/03/03/color-moves-art-and-fashion-by-sonia-delaunay-2/?refresh_ce-cp)

Delanī māksla un mode ir nozīmīgas ne tikai tāpēc, ka apvienoja filozofisku domu ar telpisko dimensiju, bet pārvietoja mākslas zināšanu izpausmi no gleznas uz ķermeni, it kā ietērpjot to mākslas darbā (Slevin, 2015).

Delanī tekstilmozaikas 20. gs. 20.-tajos gados pārsteidza sabiedrību ar abstraktām, dinamiskām kompozīcijām, kas bija tam laikam modernas krāsu un līniju ritmu kombinācijas. Delanī kā māksliniece veidoja savu krāsu un realitātes filozofiju mūsdienu modernajā, dinamisma pilnajā pasaulē. Tādā veidā Delanī veidotās tekstilmozaikas bija soli priekšā tradicionālajai tekstilmozaikai, un Delanī var uzskatīt par *Art Quilt* jeb Mākslinieciskā kvilta aizsācēju.

Ekstravagantās 20. gadsimta sākuma modes radītājs - tērpu dizainers Pols Puarē

Extravagant fashion designer from the beginning of the 20th century - costume designer Paul Poiret

Dizainers Pols Puarē (*Paul Poiret*) dzimis 1879. gadā, parīziešu ģimenē, viņa tēvam piederēja neliels tekstila uzņēmums. Puarē radošo ideju uzplaukums notika laikā, kad Eiropas kultūrā dominēja tādi ģēniji kā Sergejs Djaģiļevs (*Sergei Diaghilev*) un Marsels Dišāns (*Marcel Duchamp*). Tas bija kultūras mikslis, kas sekmēja tik pārliecinošu Eiropas kultūras pieteikumu, ka tā noteica 20. gs. 20. gadu kultūras vēsmas visai pasaulei. Puarē bija izcils spēlētājs uz šīs pēckara

modes skatuves - viņa māksliniecisko stilu raksturo izšķērdība, modernisms, krāšņums un ekstravagance (Machuco, 2013).

Modē Puarē ieviesa satriecošu jaunumu – 18. gadsimta ampīra stila iedvesmotu maigi krītošu tērpa siluetu. Līdz ar to žņaudzoša korsete vairs nebija vajadzīga. Puarē krītošie tērpi atšķīrās no Viktorijas laikmeta zīda čaboņas un šalkoņas. Jauno stilu atbalstīja arī citi modelētāji, tostarp Madlēna Vionē un Žannas Pakēnas Modes nams (Vorslija, 2013).

Korsešu nomaiņa, ko jau 20. gadsimta sākumā pareģoja Puarē, ievērojami izmainīja ierasto, pieguļošo sievietes figūras konfigurāciju, kas noveda pie taisna silueta parādīšanās un bija modē 20. gs. 20.-tajos gados (Werle, 2010).

Puarē izveidoja Modes namu 1903. gadā, kļūstot slavens ar savu kimono mēteli. Puarē attīstīja mēteļu dizainu arī vēlākā periodā (skat. 5. att.).



5. att. **P. Puarē dizainētie mēteļi**

Fig. 5. Puaré designed coats (<http://www.metmuseum.org/toah/works-of-art/2005.199>)

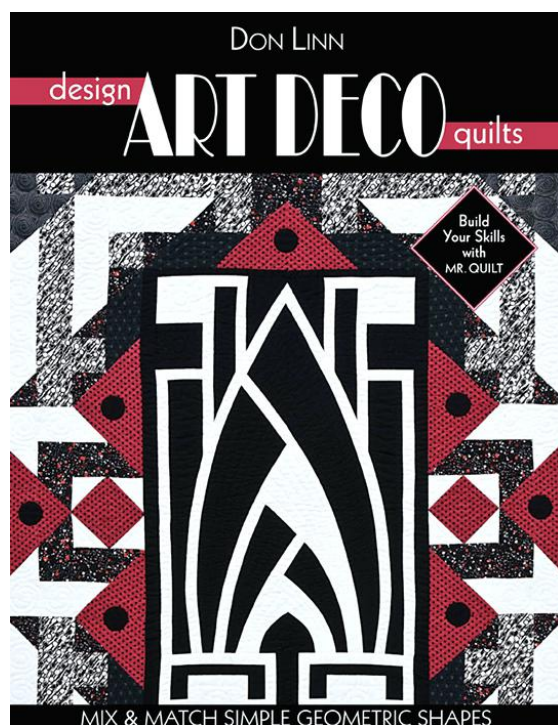
Puarē radīja arī mēbeles un smaržas, tādējādi kļūstot par vienu no pirmajiem dizaineriem modes impērijā, kur tiek paplašinātas ar modi saistītās jomas – smaržu līnija u.c. (Queens of Vintage, b.g.).

Arābu, persiešu u.c. orientālās ietekmes caustrāvoja Puarē dizainu, viņš izprata šarmu un eksotikas burvību. Puarē mudināja sievietes tērpties drosmīgāk, konsekventi attīstīja savu stilu, tajā atbalsojās ekspresionisms un kubisms. Puarē izmantoja taisnas līnijas un ģeometriskus laukumus, spilgtas krāsas savā īpašā veidā, kas tā laika sabiedrībai, pieradušai pie pasteltoņu gammas, šķita

uzdrīkstēšanās. Puarē pievērsies arī aksesuāru dizainam, ieviesa 20. gs. Eiropas modē dizainētus turbānus, kūliju (*kūliji* - Indijas, Ķīnas, Āzijas valstu pamatiedzīvotāji) stila cepures, saulesargus, izrotātus apavus, kažokādas apdari u.c. (Werle, 2010). Puarē dizainētajos svētku tērpu modeļos dominēja sievišķīgs, nedaudz noapaļots, H veida siluets, kas pasvītīro maigumu un sievišķību tērpā. Brīvi krītošs tērps vidukļa daļā, netika piedāvātas korsetes, kas stingri akcentētu vidukli, bet vidukļa līnija nedaudz pazemināta, veidots savilkums.

Sonja Delanī un Pols Puarē kā dizaineri katrs savādāk saskatīja Art Deco stilam raksturīgo iezīmju pielietojuma iespējas tekstilā, katrs savādāk interpretēja savus uzskatus, pārlicību un vērtības mākslā, dodot pienesumu 20. gs. mākslas virzībā, taču kopīgais ir uzdrīkstēšanās, radošums, enerģija, krāsainība, ģeometrisko laukumu un līniju bagātība, ekstravagance un dekoratīvitate. Puarē un Delanī dizaina sasniegumi atstāj paliekošu, apbrīnas vērtu atspiedumu 20. gs. dizainā un sublimē Art Deco stila eleganci un estētiku.

Mūsdienās tekstilmozaikas tehnikā strādājoši mākslinieki savos darbos daudz izmanto ģeometriskās kompozīcijas, taču tikai nedaudzi dizaineri pievērsušies Art Deco estētikas radošajām izpausmēm tekstildarbos. Viens no plašāk pazīstamiem šajā jomā - dizainers D. Linns, kurš veido tekstilmozaikas pēc savām oriģinālajām kompozīcijām, balstoties uz Art Deco principiem (skat. 6. att.).



6. att. Dizainera D.Linna veidotā Art Deco stila tekstilmozaika

Fig. 6. Designer D.Linn's Art Deco style patchwork

(<http://boltonphoenixtheatre.com/art-deco-quilts/>)

Izstrādājot tekstilmozaikas ideju Art Deco stilā, nozīmē dizainparaugā izmantot matemātiskus aprēķinus un šūšanas izaicinājumus, kompozīcija balstīta vienkāršu ģeometrisko formu saskaņošanā un radošā interpretācijā (Linn, 2010). Tekstilmozaikām Art Deco stilā raksturīgs ārkārtīgi augsts precizitātes līmenis auduma piegriešanā un sašūšanā. Art Deco estētiskos risinājumus un tērpu apdares paņēmienus mākslinieki var radoši interpretēt arī mūsdienās.

Secinājumi *Conclusions*

1. Art Deco bija īpašs stils - grezns, elegants un dramatisks. Tīri dekoratīvs, jauns, moderns, laikmetīgs stils.
2. Art Deco stils kopumā balstījās uz funkcionālisma un modernisma eleganci un šarmu. Dizaineru darbos lineārā simetrija, ģeometrija un leņķi skaidri norobežojās no plūstošās asimetriskās organiskās formas, kas dominēja iepriekšējā - Jugendstila periodā.
3. Sonja Delanī un Pauls Puarē kā dizaineri katrs savādāk saskatīja Art Deco stilam raksturīgas iezīmes, katrs savādāk interpretēja savus uzskatus, pārliecību un vērtības mākslā, dodot pienesumu 20. gs. mākslas virzībā. Kopīgais viņu darbos ir uzdrīkstēšanās, radošums, enerģija, krāsainība, ģeometrisko laukumu un līniju bagātība, ekstravagance un dekoratīvitate.
4. Sonja Delanī – viena no nedaudzajām 20. gs. dizainerēm, kas veidoja tekstilmozaikas Art deco stilā un attīstīja māksliniecisko kviltu.
5. Mūsdienās tekstilmozaikas tehnikā strādājoši mākslinieki savos darbos daudz izmanto ģeometriskās kompozīcijas, taču tikai nedaudzi dizaineri pievērsušies Art Deco estētikas radošajām izpausmēm tekstildarbos. Viens no plašāk pazīstamiem šajā jomā - dizainers D. Linns, kurš veido tekstilmozaikas pēc savām oriģinālajām kompozīcijām, balstoties uz Art Deco principiem.
6. Mākslinieciskais kvilts – tā ir jauna pieeja tekstilmozaikas tehnikā, kas atspoguļo katra meistara personību un personīgo stilu mūsdienās, tajā sava paliekoša vieta ir arī Art Deco stila elementiem – kubismam, konstruktīvismam, modernismam. Mūsdienu kvilta veidotāji savos darbos balstās uz funkcionalitātes, vienkāršības un minimālisma principiem, izmanto asimetriskā dizaina pieeju.

Summary

Art Deco was a gorgeous style – luxurious, elegant, and dramatic. Purely decorative, thoroughly modern, it had very distinct characteristics: repeating or overlapping images – chevrons, zigzags, and lightning bolts – arranged in geometric patterns.

Common design elements of Art Deco style highly stylised details such as sunbursts, vertical lines and repeated geometric patterns streamlining and cubist forms ancient and exotic influences flora and fauna ornamentation art deco typography.

Sonja Delaunay and Paul Poiret, as designers, each and everywhere, saw the characteristics of the Art Deco style, each one interpreting their views, beliefs and values in different ways, giving a contribution to the 20th century in the direction of art. Common in their work is daring, creativity, energy, colour, abundance of geometric squares and lines, extravagance and decorativeness.

Sonja Delaunay is one of the few designers of the 20th century who created a patchwork in Art Deco style.

Recent artists working in textile use geometric compositions in their work, but only a few designers have focused on the creative manifestations of Art Deco aesthetics features. Nowadays, artists use in a lot of geometric compositions in their patchwork, quilt and other textiles, but only a few designers have focused on the creative manifestations of Art Deco aesthetics in textile works. As one of the most well-known in the designs field, textile designer D. Linn who creates his original compositions and quilt, has his roots in the principles of Art Deco.

The Art quilt is a new approach that reflects the personality and personal style of each master today, with its remaining place in the elements of Art Deco style - Cubism, Constructivism, Modernism. Contemporary quilt makers include functionality, simplicity and minimalism in their work and use an asymmetrical design approach.

Literatūra References

- Carelli, F. (2016). Sonia Delaunay: a life in the avant-garde. *London Journal of Primary Care*, 8:4, 72-74. <https://doi.org/10.1080/17571472.2016.1204009>
- Casparowiak, K. R. (2008). *Fashioning the Woodcut: Raoul Dufy and the Avant-Garde*. A THESIS. Pieejams: https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/7479/thesis_MA_spring2008_Casparowiak_Katrina_Rose.pdf
- Chandler, A. (1988). The Art Deco Exposition. *World's Fair*, 8:3, 46-49. Pieejams: <http://www.arthurchandler.com/1925-art-deco-exposition/>
- Fogg, M. (2013). *Fashion: The Whole Story*. London: Thames & Hudson.
- Hardy, A. R. (2003). *Art Deco Textiles: The French Designers*. London: Thames & Hudson.
- Jamie, K. (2015). *Sonia Delaunay: the avant-garde queen of loud, wearable art*. Pieejams: <https://www.theguardian.com/artanddesign/2015/mar/27/sonia-delaunay-avant-garde-queen-art-fashion-vibrant-tate-modern>
- Jirousek, C. (1995). *Art, Design and visual Thinking*. Pieejams: <http://char.txa.cornell.edu/art/dress/historic/earlyart/earlyart.htm>
- Krastiņš, J. (b.g.). *Arhitektūras stili Latvijā*. Pieejams: http://mantojums.lv/media/uploads/dokumenti/petijumi/arhitekturas_stili_latvija.pdf
- Kruse, S. (2012). *A Poetics of Fashion: Sonja Delaunay's Vision of Color*. Pieejams: <http://www.propellermag.com/Spring2012/KruseSpring12.html>

- Linn, D. (2010). *Design Art Deco Quilts: Mix & Match Simple Geometric Shapes*. C&T Publishing.
- Machuco, A. R. (2013). The evolution and democratization of modern fashion: from Frederick Worth to Karl Lagerfeld's fast fashion. *Comunicação e Sociedade*, 24, 79 – 94. Pieejams: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1012.3095&rep=rep1&type=pdf>
- Martinsone, I. (1998). Art Deco stilīgais vilinājums. *Studija*, 3 (5), 17-18. Pieejams: <http://www.studija.lv/?parent=2204>
- Pavasaris, M. (2011). *Art Deco stils – starpkaru mode*. Pieejams: <http://www.irlv.lv/blogi/kultura/art-deco-stils-starpkaru-mode>
- Queens of Vintage*. (n.d.). Pieejams: <http://www.queensofvintage.com/the-man-who-broke-the-rules-fashion-designer-paul-poiret/>
- Salter, K. (2011). *Sonia Delaunay: a life of contrasts*. Pieejams: <http://www.telegraph.co.uk/culture/art/art-features/8668887/Sonia-Delaunay-a-life-of-contrasts.html>
- Slevin, T. (2015). Sonia Delaunay's Robe Simultanée: Modernity, Fashion, and Transmediality. *Fashion Theory*, 17 (1), 27-54. <https://doi.org/10.2752/175174113X13502904240695>.
- Sonia Delaunay and Art Deco Design*. (n.d.). Pieejams: <http://roxana-signs.blogspot.com/2012/07/sonia-delaunay-and-art-deco-design.html>
- Stern, R. (2005). *Against Fashion: Clothing as Art 1850 – 1930*. The MIT Press.
- Vorslija, H.(2013). *Mode: 100 būtiskas idejas*. Rīga: Jāņa Rozes apgāds.
- Werle, S. (2010). *50 Fashion Designer die man kennen sollte*. Muenchen: Prestel Verlag.

