

# APPLICATION OF TAEKWONDO PARALYMPIC RULES FOR SPARRING COMPETITION IN TERMS OF SPECIAL NEEDS PHYSICAL EDUCATION FOR REDUCTION OF CHALLENGING BEHAVIOUR

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**Abstract.** *Aim of the study: Para Taekwondo is divided into competition of sparring (kyorugi) and patterns of defense-and-attack motions (poomse). The first one is limited to orthopedic-like disabilities, while the other also include intellectual and visual impairments. The aim of this study is to analyze rules of sparring competitions to propose a pattern of sparring-like exercises for people with intellectual disability for the purpose of reducing aggressive like behaviors that often occurs in this group. Methods: Analysis of the competition rules were compared with existing intervention and knowledge about reducing aggressive behaviors in a group of intellectually disabled people. Results: Limited area of striking, which exclude head and punishment for disobeying rules serve as similar intervention as in behavioral therapy for reducing aggressiveness. Conclusions: Limiting striking zone during practice may induce subconscious restriction in aggressive behavior, improving social adjustment for people with intellectual disability.*

**Keywords:** *martial arts, intellectual disability, cognitive-behavioral therapy, Paralympic.*

## Introduction

In recent years para taekwondo were introduced to Paralympic Games. In the same time, Para Taekwondo rules were introduced and have to be implemented worldwide in order to call held competition with a name of para taekwondo. Strict rules were presented with exact classification of participant as well as rules of sparring competition. For now, for sparring competition there are only games for those with orthoepic like impairments, which limits participants mostly to upper limbs impairments or neurological impairments which affects ability to defend trunk from being targeted by opponent. For now, there is no sparring competition held specially for people with intellectual disability, only poomse competition which is composed of assessing one's performance in sequences of techniques presented without any opponent (World Taekwondo Federation Event Operations Rules, 2017). Among people with intellectual disabilities there are many subtypes and origins of this assessment. Most common is assessment of IQ score, which

value below 75 is considered as intellectual impairment (<http://www.worldtaekwondo.org/para/>). This is normal psychological evaluation and it is used for evaluation for participants, but causes of this scores may vary, as some people with disabilities like those from group of autism spectrum disorders may not be able to submit to normal criteria of assessment as incompatibility of their intellectual will with motor execution of desired behaviour. But the common part of this assessment is inability to perform normal (standard), logical reasoning, understandable for other people. But this category include also people with normally diagnosed intellectual impairment in childhood or with restricted reasoning due to genetic disorders such as Down's syndrome or many other disorders which is hard to describe fully here. Other reason for intellectual impairment may be also mental disorder or mental illness which occur because of some events in lifetime of a person and trigger mental illness (Cooper et al., 2007).

All those causes may be a factor to develop aggressive and inadequate behaviour in terms of normal social functioning. Aggressive behaviour includes both verbal and physical violence, understand as action, which cause suffering to a subject of this oppression. There could be many reasons of such behaviour, but common factor is lack of empathy and understanding of social norms of behaving, which may not be cleared by simply verbal explanation what is right and wrong (Matson et al., 2005).

For the purpose of regulating behaviour in many mental disorders, both behavioural and cognitive behavioural therapy were developed (Cob et al., 2006). It works pretty well in terms of disorders such as anxiety and depression, but there are a few proof of effectiveness and long-term lasting changes in aggressive behaviours (Taylor, 2002).

Polish scientist, Roman Maciej Kalina, proposed type of behavioural therapy by using fun forms of martial arts (Kalina, 1996). It is about using playful forms mixed with martial arts exercises in order to diagnose aggressive behaviours for certain individuals. In the same time, the same intervention was proposed as therapy for reducing such behaviour (Kalina & Jagiełło, 2000). Later, this component started to become part of innovative agonology as a science about struggle (Kalina, 2015). Reducing aggressiveness by a means of fun forms of martial arts became part of it (Kalina, 2016).

In cognitive-behavioural therapy it is limited possibility for people with intellectual disability to understand its cognitive part by simply verbal explanation of rules or trying to refer to their empathy towards others. But reward-punishment system, implemented during normal activity of a person should reach their subconscious level to do not cross certain borders and regulates behaviour to be more socially acceptable. This kind of therapy is proven to be effective, therefore there is assumption, that correctly directed playful forms is proper intervention

for people (especially children) with challenging behaviours (Brosnan & Healy, 2011).

Among many skill-related physical activities, which beneficial effects for health have been proven (Jeng et al., 2017), martial arts is prominent topic of scientific conferences (Ortenburger et al., 2015) are more and more frequently use as a form of kinesiotherapy with different goals (Fong et al., 2013) and psychological therapy (Lakes & Hoyt, 2004). This attractive form of physical activity is associated with psychological development, as almost every martial art have their own philosophy of and way of behaving in life, mostly composed of respect, being gentle, proper behaviour and self-development for both mental and physical sphere (King & Williams, 1997; Burke et al., 2007; Wąsik & Wójcik, 2017).

Among all martial arts, both judo and taekwon-do, which are included in Olympic games are used as a form of therapy for disabled children (Fong et al., 2013; Ion-Erne et al., 2014). As all martial arts, taekwondo is promising martial arts in terms of regulating mental sphere of human (Leite, 2014; Wąsik, 2014). Self-esteem (Ortenburger et al., 2016), social skills (Ortenburger et al., 2017), control over emotions (Wąsik et al., 2015), physical performance and overall perception of one's health is reported as aspects (Szerla et al., 2017; Tsos et al., 2017), which may be improved by practicing this martial art, which is continuously develop and brings more application value to knowledge about training methods (Wąsik, 2016; Wąsik & Ortenburger, 2016).

While rules are not yet implemented for formal competition for mentally disabled, there is no reason why to not perform sparring competition for willing participants with the exact rules that are for people without intellectual disorders and only orthopaedic one. During training session, there is lower pressure, winner gains nothing and everyone can talk about the performance of both sides afterwards. Taekwondo were proven to be effective intervention for dealing with anger for healthy individuals (Wąsik et al., 2015).

Starting with these assumptions, there was formulated hypothesis, that exercises such as spring for people with mental disorder, who eventually will only participate in poomse completion during championships, may be beneficial in terms of reducing socially challenging behaviours such as aggressiveness.

The aim of this study is to justify this hypothesis by comparative analysis of components of fun forms of martial arts in a context of behavioural therapy with official rules of Para Taekwon-do competition.

### **Comparative analysis methodology**

From the methodology of fun form of martial arts proposed in innovative agonology (Jagiello et al., 2015) following components were extracted and

formulated in a context of behavioural therapy: safety of participants, restricted area of action, restricted striking zones and determined punishments for disobeying rules, presence of judge (therapist) to control over play (sparring).

Each of component will be firstly described and then specific rules will be described accordingly to each of component.

### **Safety of participants**

The first rule of every therapy is to do not harm. Therefore, every behavioural therapy, especially for people with mental disorders, should take special measures to do not allow patients to harm themselves or others (Heyvaert, 2014). For this purpose in Para taekwondo rules there is specific description of equipment in part 4.2.3:

*“The contestant is responsible for supplying their own WT approved protective equipment. The groin, forearm and shin guards shall be worn beneath the Taekwondo uniform. Sensor socks, hand protector and mouth piece shall also be supplied by the athlete.”*

Also in terms of safety, special material of the floor should be provided, by rule 3.1, which states, that mat should be not-slippery and approved by competition supervisor. To sum up, most of vulnerable parts of the body is protected by equipment, so undesirable injuries is limited. Hand protectors are not only for providing safety of the striker, but also for opponent, reducing the impact of blow.

### **Restricted area of action**

In the behavioural therapy, there are limited area of action, where patients can move freely. This is to determine, that some areas are forbidden to go or in certain situations there is necessity to succumb to expectations of others and to do not act as one's please. It is especially significant with people form group of ADHD and autism spectrum disorder, where they tend to do not resist to their temptations to perform certain actions (Campbell, 2003). Following the rules of play, they are expected to remain in certain room or part of it in order to participate in such activity. Crossing this border is punished in a way determined by rules of play and executed by judge (therapist). In Para taekwondo this matter is regulated in point 3.1.1 and presented in figure 1:

*“The Competition Area is composed of a Contest Area and a Safety Area. The Competition Area shall be square shaped and the size shall be no smaller than 10mx10m and no larger than 12mx12m. At the centre of the Competition Area shall be the octagonal-shape Contest Area. The Contest Area shall measure approximately 8m in diameter, and each side of the octagon shall*

*have a length of approximately 3.3m. Between the outer line of the Competition Area and the boundary line of the Contest Area is the Safety Area. The Contest Area and the Safety Area shall be different colours, as specified in the relevant competition's Technical Manual.”*

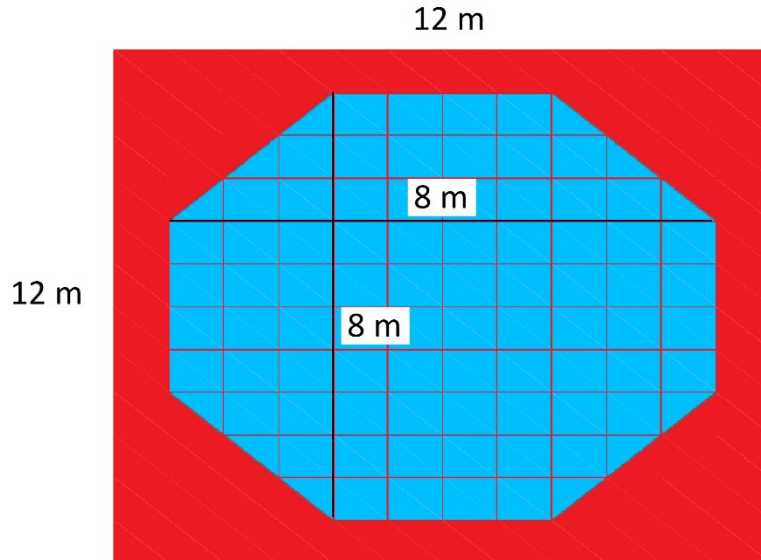


Figure 1. Scheme of area of competition according to Para Taekwondo rules

Such restriction as well as existence of safety area, where fighting is forbidden may play important role in regulating behaviour. As in certain places, people is expected to behave more proper (religious places, schools, governmental institutions), existence of area, where participant needs to stop their attack serve as an exercise of controlling themselves.

### **Restricted striking zones and determined punishments for disobeying rules**

Among aggressive behaviour, the most dangerous is physical violence, as it may leave permanent injuries for victim. During plays in behavioural therapy, certain action are permitted and may results in reward, and some others are forbidden (Taylor, 2005). In martial arts, also in a manner of fun form of martial arts proposed as innovative agonology, limited striking zones are described before play or sparring. This serves as most important behaviour regulating component from all of described in this paper. Is detailed description will be presented alongside with comments:

#### *“12.2 Permitted areas*

*12.2.1 Trunk: Attack by fist and foot techniques on the areas covered by the trunk protector are permitted. However, such attacks shall not be made on the spine.*

*12.3 Prohibited areas 12.3.1 Head: the area above the collar bone is a prohibited area.”*

*“13.1 Scoring Areas 13.1.1 Trunk: The blue or red coloured area of the trunk protector.*

*13.2 Criteria for valid point(s):*

*13.2.1 Point(s) shall be awarded when a scoring technique is delivered to the scoring areas of the trunk with power and accuracy.*

*13.3 The valid point(s) are as follows:*

*13.3.1 Two (2) points for a valid foot technique to the trunk protector*

*13.3.2 Three (3) points for a valid turning foot technique to the trunk protector 13.3.3 Four (4) points awarded for a valid spinning technique to the trunk protector*

*13.3.4 One (1) point awarded for every one Gam-jeom (-1 point punishment) (given to the opponent)”*

Only allowed body part for striking is the trunk. Moreover, there need to be properly executed foot technique. Hand strikes do not count for that, so randomly expressed anger will not be considered proper way of fighting. During practice, it is expected to serve as subconscious modulation of delivering blows, where especially head should stay beyond imagination of striking.

Moreover, there are set of foul play action or improper behaviour, which will be punished:

*“15.2 Prohibited acts which are described in article 15.4 shall be penalized with: 15.2.1 “Gam-jeom” (deduction penalty).*

*15.3 A “Gam-jeom” shall be counted as one (1) additional point for the opposing contestant. All “Gam-jeom” shall be counted in the total score of the contest.*

*15.4 Prohibited acts The following acts shall be classified as prohibited acts and “Gam-jeom” shall be declared;*

*15.4.1 Crossing the Boundary Line 15.4.2; Falling down; 15.4.3 Avoiding or delaying the contest; 15.4.4 Grabbing or pushing the opponent; 15.4.5 Lifting the leg; 15.4.6 Hitting below the waist 15.4.7; Attacking the opponent after “Kal-yeo” (stop); 15.4.8 Dangerous play; 15.4.6 Hitting below the waist 15.4.7 Attacking the opponent after “Kal-yeo”; 15.4.8 Dangerous play; 15.4.9; Unsafe play; 15.4.10 Butting or hitting with the knee; 15.4.11 Attacking the fallen opponent; 15.4.12 Misconduct of contestant or coach”*

Most of prohibited actions refers to using improper way of striking and use of forbidden parts of the body. The proper explanation should be cited for the dangerous play and unsafe play:

*“15.4.8 Dangerous play Dangerous play includes hitting the opponent's head with the hand (fist), arm, elbow or any part of the body including the permitted techniques listed in Article 12.1. Unintentional Dangerous play shall be penalized by “Gam-jeom”.*

*Dangerous play due to unsafe play from the opponent cannot be penalized by this article. In the case of a hit to the head the Referee shall immediately suspend the contest in accordance with article 21.*

*In the case an athlete intentionally commits Dangerous play resulting in a hit to the head a yellow card shall be given to the athlete who committed intentional Dangerous play.*

*15.4.9 Unsafe play Unsafe play occurs when an athlete intentionally or unintentionally takes a stance or plays with a game tactic where the head becomes a target and increases the risk for Dangerous play. When there is a hit to the head the Referee shall ask for IVR to determine if the situation concerns unsafe or dangerous play.”*

As this explanation of rules states, not only hitting to a head should be considered as dangerous, but also intentional behaviour of putting himself to a risk to get points by given penalty to opponent also will be recognized and punished.

### **Presence of referee (therapist) to control over play (sparring)**

Last key factor of behavioural therapy is active coordination of all play forms. He needs to control over situation, detect potential threats and act accordingly with proper reaction time, to do not allow expression of anger to reach dangerous level (Brosnan, 2011). Therapist serves the same role as referee, rewarding what is allowed and punishing what is wrong. He is responsible for effects of therapy by explanation of wrong deeds and acting without any exceptions, which might eventually emphasize negative behaviours. Following rules provide explanation for that statement:

*“11.4.3 The referee shall start the contest by commanding “Joon-bi (ready)” and “Shi-jak (start)”.*

*11.4.4 The contest in each round shall begin with the declaration of “Shi-jak (start)” by the referee and shall end with the declaration of “Keu-man (stop)” by the referee. Even if the referee has not declared “Keu-man”, the contest shall be regarded as having ended when the contest clock expires.*

*11.4.5 The referee shall declare the winner by raising his/her own hand to the winner’s side.”*

*“15.5 When a coach or contestant commits excessive misconduct and does not follow the referee’s command the referee may declare a sanction request by raising a yellow card. In this case the Competition Supervisory Board shall investigate the coach’s and/or athlete’s behaviour and determine whether a sanction is appropriate*

*15.6 If a contestant intentionally and repeatedly refuses to comply with the Competition Rules or the referee’s orders, the referee may end the contest and declare the opposing contestant the winner.*

*If the referee at the Inspection desk or officials in the Field of Play determines, in consultation with the PSS technician, that a contestant or coach has attempted to manipulate the sensitivity of PSS sensor(s) and/or inappropriately alter the PSS so as to effect its performance, the contestant shall be disqualified.*

*15.8 When a contestant receives ten (10) “Gam-jeom”, the referee shall declare the contestant loser by Referee's Punitive Declaration (PUN).”*

As the rules states, referee have complete control over scoring system and decision of winner. He decides when competition starts and ends. His decisions are final and he needs to be respected by contestants.

## **Conclusions**

Provided description with rules in the context of behavioural therapy proves its compatibility with all assumptions of behavioural therapy by a means of fun forms of martial arts. Expressing overload of emotion is not the proper way of regulating one's behaviour. In contrary, control over emotions and obedience to the rules is prime aim of behavioural therapy. In terms of reducing aggressive behaviour, it is reported that taekwondo may serve as a mean for coping with emotions. But it was not analysed in context of mentally challenged people with tendency to aggressive actions. There are none studies to be found through science databases (in English) that could confirm empirically correctness of assumptions, which were presented in this work. However, it is reported, that taekwon-do coaches are not prepared well enough for training practitioners with disabilities (Patatas et al., 2016). This theoretical concept should bring more insight to practical application of existing rules and help coaches to form proper training methodology, accordingly to cognitive-behavioural therapy directives. After this theoretical concept, there should be series of experimental studies, which will verify its usability in training/therapy process. It may seem counterintuitive to teach aggressive person how to fight. But without that knowledge, they still act dangerously on daily basis, only in wild way, when even eyes are the target of their actions, which is individual experience of author of this paper. Regulation of that behaviour through controlled action towards other person seems to be promising intervention, as strict rules and provided equipment for protections with experienced referee is safe way to conduct therapy. Induction of proper behaviour by repeated sparring session and strict punishing system may lead to subconscious patterns of behaving during confrontation with others. In this case it is only a kick to a chest, which is much less severe than other possible action that one's can perform during rampage.



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