

# ASPECTS OF HUMAN CAPITAL MANAGEMENT OF HEALTHCARE WORKFORCE IN THE CONTEXT OF LIFELONG LEARNING: A RAPID REVIEW

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**Abstract.** *An individual's knowledge and skills, also known as human capital, shape its professional quality and become a valuable resource for the organization when entering an employment relationship. Investment in human capital, promoting the formal and non-formal lifelong learning of the workforce while implementing targeted capital monitoring, is essential to achieve the strategic goals of the organisation. In addition, in particularly critical areas such as healthcare, human capital management can play a crucial role in ensuring the quality of healthcare and patient safety. The study aims to analyse the research carried out on the aspects of human capital management of the healthcare workforce and its role in the health sector. To achieve the goal, a rapid review was performed by including articles indexed in the databases Scopus and Web of Science in the period 2017-2021, according to search strategy. The study shows - human capital is mostly analysed at the national or regional level as an indicator of a country's level of development (macro-dimension). At the same time, relatively little research has been conducted at the micro-dimension, where management of human capital of the healthcare workforce has been studied at the institutional or sectoral level. Research on human capital management in the healthcare sector at the institutional level only fragmentarily reflects its importance and does not provide a comprehensive picture of effective management methods or systems, as well as benefits or barriers to implementation. There is a significant lack of research on the interaction of human capital management with specific factors in the healthcare sector, such as the quality of health care and the safety of patients and healthcare professionals.*

**Keywords:** *healthcare workforce, human capital management, lifelong learning, skills monitoring.*

## Introduction

With the 4th Industrial Revolution, including rapid changes in globalization, technological development, production and social processes, the role and impact of lifelong learning on the development of individuals, organizations, and

countries has significantly increased. In a knowledge-based and service-oriented economy, lifelong learning is crucial in constructing the human capital of the organisation. An individual's knowledge and skills are a set of competencies, which, becoming an employee of the organisation, also becomes the human capital of the organisation, therefore the management of the organisation should support the lifelong learning of employees to promote the development of the organisation. The role of the employer in the lifelong learning of the workforce is emphasized in the “New European agenda for adult learning 2021-2030” – encouraging, where appropriate, the integration of financial incentives, tax incentives, and other social benefits or compensatory measures at employer level in the implementation of policies on adult learning should result in increased employer commitment to adult learning (European Commission (EC), 2021).

To support the lifelong learning of employees and invest in the development of human capital, the employer needs to develop and integrate a human capital management system to ensure continuous monitoring of the human capital components such as education and skills. The need for skills monitoring in the education and labour market is also supported by policy documents at the European level. In 2016, the European Commission's “New Skills Agenda for Europe” identified balancing skills acquisition, building skills systems, and strengthening lifelong learning as development priorities (European Commission (EC), 2016). As a follow-up to this initiative, the “European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience” was launched in 2020, setting out 12 directions for development over the next five years. And skilling for a job is a guiding principle, starting from mapping each individual's skill set, delivering targeted training that meets specific up- and reskilling needs, and helping the individual find a job in demand on the labour market (EC, 2020).

The skills development and lifelong learning course set by the European Commission is driving change in both the education and business sectors. Therefore, solutions need to be found to develop and manage the human capital of the workforce by promoting and supporting lifelong learning.

### **Knowledge and skills as components of human capital**

One of the original definitions states that human capital is the knowledge, skills, and abilities of an organization's employees (Shultz, 1961). Over time the definition was supplemented with employee health (Becker, 1993), intelligence, experience (Bontis, Dragonetti, Jacobsen, & Roos, 1999), and employee performance and potential (Thomas, Smith, & Diez, 2013). Despite differences in definitions, the role of human capital in managing human resources and achieving strategic results is becoming increasingly important. Human capital is a relatively new concept in management science and it is an important intangible asset of the organisation. Although human capital – knowledge and skills of employees,

belongs to the employees of the organisation, as an organisation's intangible asset, this capital can affect the productivity, profitability, competitiveness, quality of goods and services, as well as the reputation of the organisation. Previous studies have shown a positive link between the development of human capital in an organisation and performance at both the individual and organisational levels. In addition, this relationship can be analysed from two perspectives: how knowledge and skills of the workforce at the individual level affect organisational performance (Ployhart, Nyberg, Reilly, & Maltarich, 2014) or how organisational performance affects development at the individual level (Crocker & Eckardt, 2013). The knowledge and skills of the workforce can be improved by developing a lifelong learning approach in the organisation and thus promoting personal development through personal growth.

According to the European Centre for the Development of Vocational Training (CEDEFOP) lifelong learning is all learning activity undertaken throughout life, which results in improving knowledge, know-how, skills, competencies and/or qualifications for personal, social, and/or professional reasons, covering related terms such as adult education and continuing education and training (CEDEFOP, 2008). In adult education learning outcomes – knowledge and skills, arise from the direct interaction between the individual and the education provider. But the work environment is an additional dimension where employers by direct or indirect investments can facilitate lifelong learning of the workforce and benefit from this interaction.

### **Human capital management**

Investment in human capital is relevant to achieve the strategic goals of the organisation, but for balanced management, decisions must be data-driven. So, an employer needs to develop an approach to how human capital can be managed and measured and a system where human capital data can be stored, planned, monitored and controlled. Human capital management can be viewed as an integrated effort to manage and develop human capabilities to achieve significantly higher levels of performance (Chatzkel, 2004). To improve the performance, metrics should be used to measure the value of human capital attributes (accumulated knowledge, skills, experience, creativity, and other relevant workforce attributes), and gained knowledge should be used to effectively manage the organisation (Nalbantian, Guzzo, Kieffer, & Doherty, 2004). Afiouni distinguishes 5 dimensions of human capital that, according to management activities, contribute to the organisational outcomes (Figure 1) (Afiouni, 2013).

HCM involves putting into place the metrics to measure the value of HC attributes (accumulated knowledge, skills, experience, creativity and other

relevant workforce attributes) and using that knowledge to effectively manage the organisation

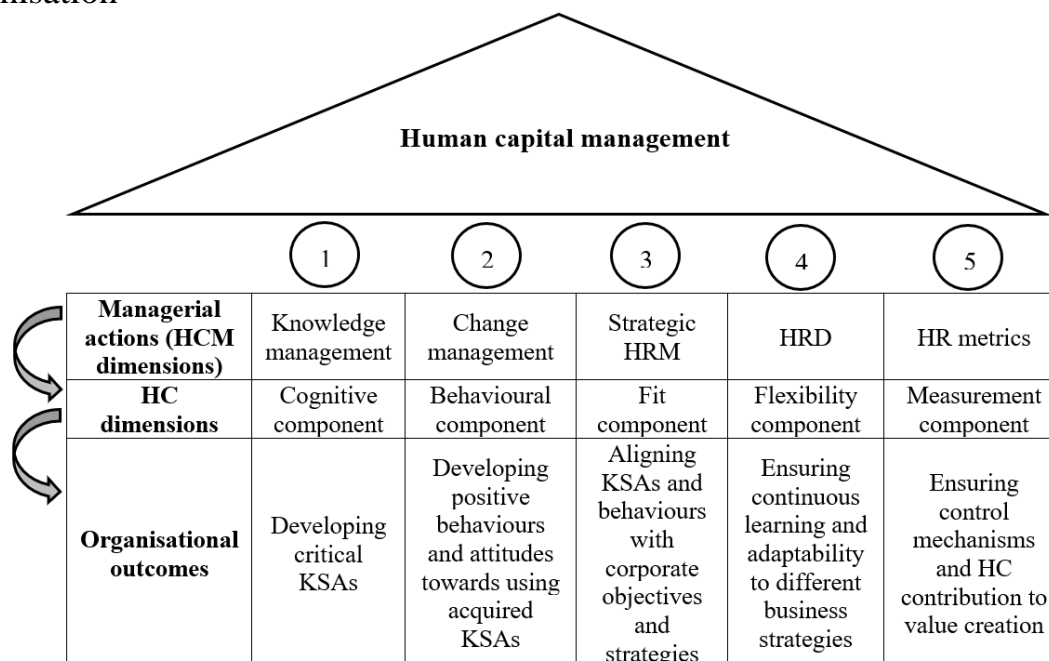


Figure 1 *Human capital management framework* (Afiouni, 2013)

According to the dimensions and managerial actions 5 organisational outcomes regarding human capital should be expected – development, understanding and acceptance, alignment with strategic goals, continuous learning and measurement. As the fifth dimension shows, it is significant to ensure measurement of human capital and implement control mechanisms to monitor contribution of human capital.

In particularly critical areas such as healthcare, human capital management can be essential not only to ensure the productivity, profitability, and competitiveness. Monitoring the human capital of healthcare workforce can also improve the quality of healthcare and patient safety. The healthcare workforce can be defined as people who are engaged in actions whose primary intent is to enhance health, including clinical staff, as well as management and support staff (World Health Organisation (WHO), 2010). The results of the Organisation for Economic Co-operation and Development (OECD) Survey of Adult Skills (PIAAC) indicate significantly higher rates of skills mismatch among the healthcare workforce in comparison to other professional workers, pointing to the risk of skills gap (OECD, 2016). Skills mismatch can be caused by inadequacies in education and training systems and also by inadequacies in health systems and organization of the workplace, so there is a need to take a systems-approach to skills assessment. Besides, it is vital for the healthcare workforce not only to possess the needed skills, but also to be enabled to use these skills effectively (OECD, 2021). As the World Health Organisation (WHO) recommends - transformative, high-quality education and lifelong learning should be

implemented to ensure that all health workers have skills that match the health needs of populations and can work to their full potential; education and training must be focused on practice and tailored to health system needs (WHO, 2016). So efficient and targeted human capital management can serve not only personal growth and the achievement of strategic goals of healthcare organisations, but also the provision of the state healthcare system.

### **Aim**

The study aims to analyse the research carried out on the aspects of human capital management of the healthcare workforce and its role in the health sector. This goal was set based on the findings of the previous study by the authors, where integration of the skills monitoring system in higher education was evaluated (Slavinska et al., 2021). As the results indicated, skills management should also be implemented in the work environment to ensure monitoring of the workforce's lifelong learning, thus facilitating the development of the employer's human capital database.

### **Methodology**

To achieve the goal of the study, a rapid review was performed. This approach was chosen as a rapid review is a suitable approach to provide practical evidence for informed decisions, when time and resources are limited, especially in the field of health policy and systems (WHO, 2017). The search was conducted in two most important multidisciplinary databases containing citation information - Web of Science and Scopus. According to search strategy, studies including "human capital" or "skills management" or "skills monitoring" and "healthcare" or "health care" in title, abstract and keywords, were selected. Databases have been searched from 01/12/2021 to 31/12/2021. Only studies that met criteria - English language, open access, published and indexed 2017-2021 - have been included. The year 2017 has been chosen as the starting point, as in 2016, the European Commission defined skills systems and lifelong learning as development priorities by launching the program "New Skills Agenda for Europe".

The review has been carried out in an accordance with Cochrane rapid review guidance (Garritty et al., 2020). The titles and abstracts of extracted studies using the search strategy have been screened by two review authors independently for potential inclusion (in case of insufficient information, the full text was evaluated). A database has been created with the following information for each article found: author, title, journal, year, and objective. The full text of the potentially eligible studies has been assessed by two review authors independently, any disagreement resolved by consensus discussion. A form

developed by the authors has been used to extract relevant data from the included studies. A report has been made following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021).

## Results

According to the search strategy, 479 records were identified through 2 databases searching. 474 articles were identified by “human capital”, 4 articles by “skills management”, and 1 article by “skills monitoring”. After duplicate removal, 336 studies were selected for the first screening. Only studies examining human capital at the institutional level - respectively, as the intangible asset of a healthcare organisation (microeconomic dimension) were included. Studies examining human capital at a national level from a health sector perspective (macroeconomic dimension) have not been analysed. After applying the eligibility criteria to the abstracts, 21 full-text articles were deemed to fit for in-depth analysis. After the full-text screening, 10 studies were included in the qualitative synthesis (Figure 2).

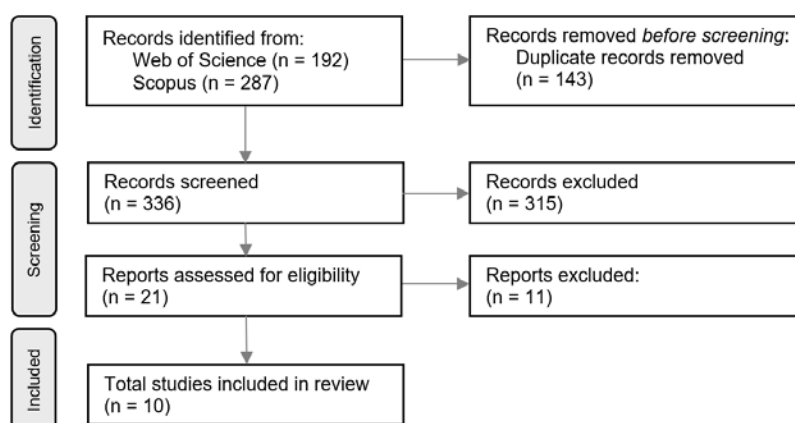


Figure 2 **PRISMA flowchart for the rapid review** (by authors)

The final sample consisted of – 3 cross-sectional studies; 3 qualitative research studies; 2 mixed research studies, 1 literature review, and 1 invited commentary. The countries of origin of the studies were the United States ( $n = 2$ ) Italy ( $n=2$ ) and one study from each country – Israel, Jordan, the Netherlands, Malaysia, the United Kingdom and Poland. Journal types were management ( $n = 7$ ), covering accounting and governance, labour economics, intellectual capital, health organization and management, additional – and healthcare ( $n=3$ ), covering medicine, epidemiology and nursing. Articles included in the study covered various topics (Table 1).

Table 1 *Topics covered, 2017-2021*( by authors)

Title	Topic	Year
Intellectual Capital Management Practices in Malaysian Private Hospitals	intellectual capital management	2017
Strategic human resource management practices and human capital development: The role of employee commitment	employee commitment	2021
Organizing professionals and their impact on performance: the case of public health doctors in the Italian SSN	hybrid professional managers, performance	2019
Investing in human capital: exploring causes, consequences and solutions to nurses' dissatisfaction	job dissatisfaction	2018
The Leadership Case for Investing in Continuing Professional Development	continuing professional development	2017
Understanding self-managing teams in Dutch healthcare: empirical evidence to non-sequential team development processes	team development	2020
Diagnosing Expertise: Human Capital, Decision Making, and Performance among Physicians	doctor's performance, individual expertise	2017
Managing intellectual capital in healthcare organizations. A conceptual proposal to promote innovation	innovation process	2021
Inhibitory effect of the environment for the management of human capital of public hospitals in the opinion of Polish managers	barriers to human capital development	2018
What distinguishes positive deviance (PD) health professionals from their peers and what impact does a PD intervention have on behavior change: A cross-sectional study of infection control and prevention in three Israeli hospitals	positive deviance approach	2020

In 8 studies topics were discovered from a human capital perspective, in 2 studies topics were discovered from an intellectual capital perspective, where human capital was one of the research dimensions.

### Discussion

The purpose of this review is to gather and analyse collected evidence on the aspects of human capital management of the healthcare workforce and its role in the health sector by evaluating studies conducted since the program “A New Skills Agenda for Europe” was launched in 2016.

It was discovered, most research is dedicated to studying human capital at the national level and its impact on national wealth from a health sector perspective. There is much less research at the institutional level and even less research is available on human capital aspects in healthcare organisations.

The rapid review covers various aspects influenced by the development of human capital, as well as factors and areas that can affect human capital. As mapped evidence shows, results can be categorized as inputs – factors and areas that can affect human capital development, and outputs – aspects influenced by the development of human capital (Figure 3).

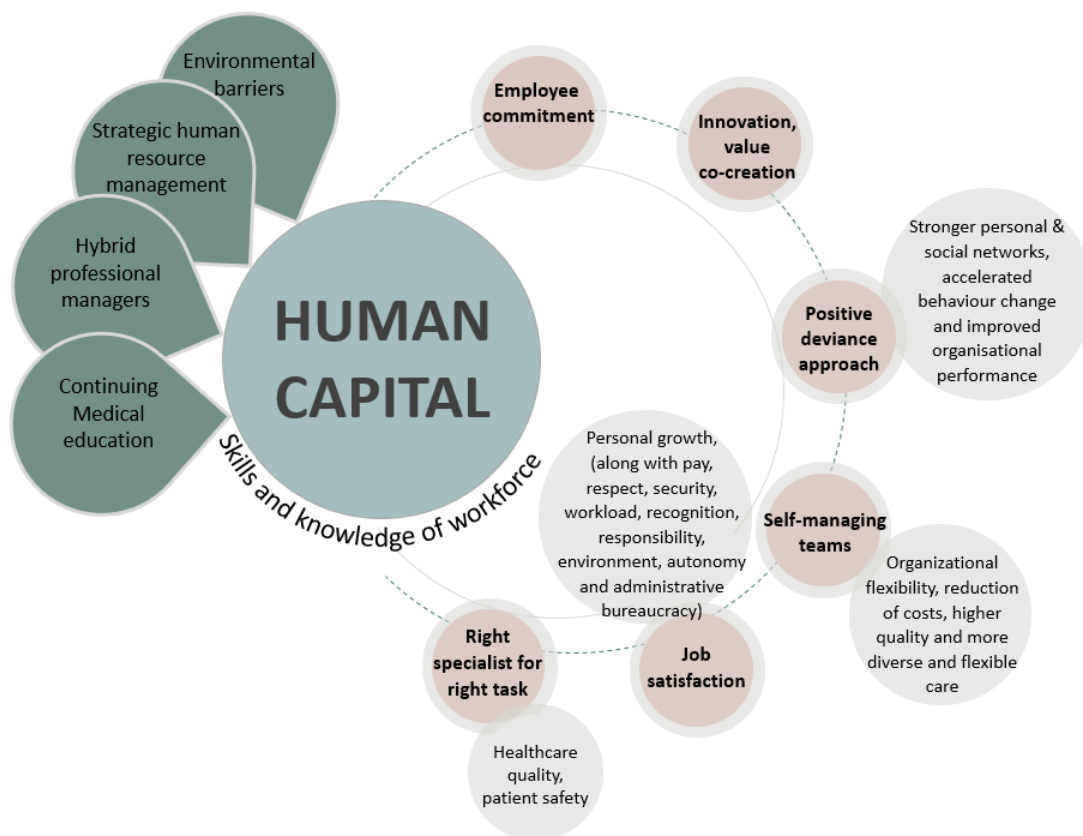


Figure 3 Mapped evidence in the healthcare sector, 2017-2021 (by authors)

Human capital is the most valuable intangible asset that covers various areas of management of healthcare organisations. Inputs identified by the study are related to the role of the management of the healthcare organisations and the impact of decisions on the development of human capital. First, management of healthcare organisations has to assess whether necessary human resources, capabilities, and processes are in place for the successful development and implementation of strategy and should invest more in the knowledge and skill development of the employees (Hamzah, Hassan, Saleh, & Kamaluddin, 2017). Authors emphasize that it is important for the health care workforce not only to develop individual knowledge, but also the internalization of tacit knowledge should be practiced. Human capital should be managed through the practice of strategic human resource management, by investing more in human capital through formal education and training (Alolayyan, Alyahya, & Omari, 2021). Second, a combination of skills appropriate to the specifics of the job is important not only for clinicians, but also for managers. Healthcare managers with balanced skills, combining both sector-specific competencies and organizational competencies and managerial skills (hybrid professional managers), are able to ensure both service quality and financial efficiency (Sarto, Veronesi & Kirkpatrick, 2019). Third, healthcare leaders who recognize the strategic value of



education and engage their people in education can expect a meaningful return on their investment (McMahon, 2017).

According to the study, the evidence shows the impact of lifelong learning on human capital and its impact on other human resource and management processes. McMahon offers continuing medical education as the professional development vehicle to drive change and achieve goals, in accordance with quality improvement efforts, patient safety projects, and other systems changes (McMahon, 2017).

Outputs can be expressed not only in terms of the quality and safety of clinicians' work but also in the spirit and cohesiveness of the employees (McMahon, 2017) as well as improved workforce commitment (Alolayyan et al., 2021). The more healthcare managers invest in meaningful formal training and organizational programs to enhance employees' skills and competencies related to organizational strategic goals, the less likely employees will leave their organizations or look for another opportunity. And as a result - satisfied and committed employees will be more engaged in training and show more interest in development opportunities (Alolayyan et al., 2021). Employees will develop not only greater devotion towards the organization relating to long-term loyalty, but also their sense of professional mission will improve. That raises the significance of employers' and employees' awareness of the cruciality of skills mastery in healthcare.

In addition to employee's commitment, another factor to explore related to human capital is job satisfaction. To measure human capital, a combination of quantifiable indicators (employee turnover, recruitment and retention rates, training costs per employee, average years of service, etc.) and qualitative indicators such as job satisfaction should be used (Halder, 2018). Regarding education, authors point out, that personal growth is one of the key factors affecting job satisfaction alongside pay, respect, security, workload, recognition, responsibility, environment, autonomy, and administrative bureaucracy (Halder, 2018).

Identification of skills and purposeful planning can promote both the formation of self-managed teams and a more balanced distribution of tasks among professionals. Geerts et al. study examine how the workforce is organized into smaller groups as self-managed teams can contribute to organizational flexibility, reduction of costs, and promote higher quality and more diverse and flexible care. Authors conclude that there are eight factors categorized by the individual, team, organizational or environmental level, that influence team management, task management and boundary management, and improvement development process to ensure the effectiveness of self-management teams. Research proves that individual human capital positively influences the development of all three processes (Geerts, Bierbooms, & Cloudt, 2021). At the same time, in human capital management, it is important not only to monitor the knowledge and skills

of employees, but also to be able to apply them purposefully. Healthcare professionals should be able to operate on both dimensions – technical skills and diagnostic decision-making. As specialists often are very strong in one of these dimensions, there is a possibility to improve healthcare outcomes by assigning the right specialist to the right task (Currie & MacLeod, 2017).

Furthermore, knowledge and effective use of human capital can also serve to implement a positive deviance approach. The positive deviance approach assumes that there are individuals or groups in teams whose uncommon behaviour and strategies enable them to find better solutions to problems than their peers, while facing worse challenges and having access to the same resources (Cohen, Gesser-Edelsburg, Singhal, Benenson, & Moses, 2020). Thus, “health systems must act to identify, adopt and nurture their human capital by paying attention to building stronger personal and social networks within health systems, and identifying the most prominent people (leaders) through their multitude of connections on the social map to accelerate behavior change and improve organisational performance over the long run” (Cohen et al., 2020).

At the institutional level, human capital as a part of intellectual capital has a significant role in the innovation process. Human capital may increasingly be a determinant if a healthcare system is ready to adopt a value co-creation approach (Huang, Leone, Caporuscio, & Kraus, 2021). The exploitation of human capital provides a valuable strategy for managing knowledge resources. It plays a crucial role in triggering a value creation process and boosts innovation within healthcare organizations (Huang et al., 2021).

In the picture of evidence must be acknowledged human capital development and its management approach can be influenced not only by management's understanding of the importance of the concept and its ability to develop it, but also by different environmental components. Environmental components, which create barriers for human capital management mostly are systemic conditions, public payers and local politicians of various levels and groups of interest (Lenik, 2018). By successfully removing barriers and providing targeted support for the lifelong learning of the workforce, employers have the opportunity not only to improve their human capital but also to promote employee commitment and job satisfaction, to foster innovation, value co-creation and self-managing teams, to encourage positive deviance approach, to find better solutions to problems and task division and also to improve organizational flexibility, reduction of costs, healthcare quality, patient safety and organizational performance.

## **Conclusions**

This rapid review is a synopsis of evidence and synthesis of knowledge on human capital management and various aspects influenced by the development of human capital, as well as factors and areas that can affect human capital development in the healthcare sector.

Successful human capital management at the individual level can strengthen an individual's personal growth, at the institutional level can contribute to the achievement of the goals of the healthcare organisation, and at the national health level can promote the performance of the health care system and the quality of health care and patient safety. Therefore, it's important to analyse how human capital management, including skills management system can be implemented in a practical work environment.

The study shows - since the publication of "A New Skills Agenda for Europe" in 2016, human capital is mostly studied at the national or regional level as an indicator of a country's level of development. At this macro-dimension, health is one of the hallmarks of human capital alongside education. Another very wide field of research is the impact of various specific health issues on a country's human capital. At the same time, relatively few researches have been conducted at the micro-dimension, where management of human capital of the healthcare workforce has been studied at the institutional or sectoral level.

Although the EC, WHO, and OECD point to the importance of skills balance and the need for skills monitoring and lifelong learning, there is little evidence in practice of attempts to implement such a management approach and systems in the healthcare sector.

There have been surprisingly few studies in the healthcare sector that highlight human capital management approaches and practical solutions. Some studies regarding human capital management only fragmentarily reflect its importance and do not provide a comprehensive picture of effective management methods as well as benefits or barriers to implementation.

There is a significant lack of research on the interaction of human capital management with specific factors in the healthcare sector, such as the quality of healthcare and the safety of patients and healthcare professionals. A novel model should be developed to fully reflect aspects of human capital management in such a specific sector as healthcare.

This study outlines human capital in the healthcare sector from two perspectives – the impact of human capital on other human resource elements (such as commitment, job satisfaction, etc.) and management processes (problem-solving, innovation, and others), and the impact of management of healthcare organisation on lifelong learning and human capital development.

Still further research should be carried on various related aspects as interactions with other forms of the capital of the organisation, integration with education providers in the healthcare sector, correlation with the value and efficiency of the organisation and the effect on financial performance, skills intelligence and healthcare performance as well.

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