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The impact of postgraduate education on career advancement in healthcare

Abstract. The study aimed to describe the mechanisms through which postgraduate education influences career advancement. The findings were synthesised to systematise the research outcomes and formulate conclusions, encompassing the components of postgraduate education, career advancement factors, and their interrelationships. The results underscored the role of postgraduate education in fostering the career development of healthcare professionals. Both formal educational programmes and informal learning opportunities that contribute to professional growth were analysed. The study identified the following conceptual models: human capital, social learning theory, signalling theory, and social capital theory. These models were examined in the context of existing theories explaining the impact of education on career progression. The advantages and disadvantages of each model were assessed, along with their applicability to the healthcare sector and potential limitations. A comparison of the models was conducted to identify common elements and integrate them into a unified conceptual framework. The results indicated that postgraduate education significantly enhances competence, job satisfaction, and opens additional opportunities for career advancement. It was found that specialists who have gained additional education in related fields are more effective when working in interdisciplinary teams to address complex medical issues. This makes them valuable team members and fosters career advancement. It was also identified that investments in education and professional development correlate with improvements in the quality of medical services. These findings emphasised the importance of supporting continuous education to maintain high standards in healthcare. The results of the study can be used by organisations responsible for licensing healthcare institutions to establish requirements and standards for continuous professional education

Keywords: continuous professional education; specialist opportunities; skills; healthcare sector; quality of medical services

INTRODUCTION

Postgraduate education plays a pivotal role in the career advancement of healthcare professionals. In an environment characterised by constant change and new challenges arising from technological innovations and increasing patient demands, medical workers must continuously develop their skills. Without successful postgraduate education, professional stagnation, a decline in the quality of healthcare services, and a loss of competitiveness in the job market may ensue. Conversely, continuous learning

fosters professional development, enhances qualifications, and improves career prospects. Therefore, it is crucial to investigate how postgraduate education influences career advancement in the healthcare sector.

Ukraine is implementing comprehensive and high-quality reforms focused on patient-centred care, aiming to provide medical services to all Ukrainian citizens at a level comparable to that of developed European countries. This primarily involves ensuring the sector is staffed

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with highly qualified leaders and implementing effective training for managerial personnel. The education system plays a vital role, in advocating for the principles of lifelong learning. A high level of competence among senior healthcare professionals is achieved through a combination of various forms of postgraduate study, as well as systematic self-education and ongoing practical experience for leaders who must operate in an innovative economy requiring new knowledge. There is a pressing need in Ukraine to train a new generation of managers and competent specialists capable of making effective decisions in new social conditions.

Several researchers have examined the significance of postgraduate education, particularly in healthcare. For instance, R. Akparibo *et al.* (2021) investigated the benefits and challenges of learning in postgraduate medical education. Students and faculty reported that flipped learning enhanced student engagement but required significant preparation from both lecturers and learners. O. Biliuk *et al.* (2023) focused on the organisation of the educational process under wartime conditions in Ukraine. The researchers analysed ways of adapting education, including distance learning and psychological and emotional support for students. O. Fast *et al.* (2022) proposed a structural model of an integrated knowledge and education system for managing the quality of higher and postgraduate education, emphasising the importance of a systemic approach to ensuring quality. They extensively analysed the challenges and practices of distance learning for postgraduate students during the pandemic, noting that technical difficulties and a lack of student motivation were the main issues.

Researchers N. Gavkalova *et al.* (2023) explored the role of education in a circular economy amid the global crisis. The researchers highlighted the importance of implementing educational programs that promote sustainable development and environmental awareness. They analysed models of using educational technologies in postgraduate education in Ukraine, emphasising the need for innovative approaches to improve the effectiveness of the educational process. S. Koshova *et al.* (2018) studied the psychological characteristics of motivation in the training of doctors in postgraduate education. The researchers noted that motivation is a crucial factor in successful learning and professional development. The studies revealed the level of stress resilience and adaptive skills of doctors during postgraduate education. The researchers emphasised the importance of developing stress-coping skills to enhance learning effectiveness.

The research of T.V. Lopukhina & O.O. Stiahunova (2021) focused on the professional development of educational institution leaders within the postgraduate education system. The researchers noted that effective management requires continuous professional development and upskilling. O. Loskutov & Y. Markov (2023), based on sociological data, analysed the formation of professional competence among anaesthesiology interns. The scientists emphasised the importance of practical training and mentorship for developing professional competence. K. Mahr-lamova *et al.* (2021) examined the need for reforming

higher medical education in Ukraine. The researchers noted that this reform would contribute to improving the quality of education and training of medical professionals. The implementation of educational technologies in the healthcare sector within the context of continuing education in Ukraine remains a crucial element. Researchers highlighted the need to use modern technologies to improve the effectiveness of educational management.

Despite the extensive research on the impact of postgraduate education, further investigation is still required. Therefore, this study aimed to systematise and generalise existing knowledge, identifying the main factors influencing the career development of healthcare professionals. The research objectives were:

- ➔ to conduct a systematic review of scientific publications exploring postgraduate education in the healthcare sector;
- ➔ to examine and critically analyse existing models explaining the relationship between education and career advancement;
- ➔ to integrate the findings and develop a unified conceptual model that explains the mechanisms through which postgraduate education influences the career advancement of healthcare workers.

MATERIALS AND METHODS

This research was grounded in a review of current scholarly literature, an analysis of conceptual models, and the application of theoretical frameworks to investigate the impact of postgraduate education on the career advancement of future professionals. This approach allows for a deep understanding of existing knowledge, the identification of gaps, and the formulation of recommendations for further empirical research. The analysis of conceptual models involved examining existing theoretical models that explain the influence of education on career advancement, such as human capital theory and social learning theory. The strengths and weaknesses of each model, their applicability to the healthcare sector, and potential limitations were assessed. Models were compared to identify common elements and integrate them into a unified conceptual framework.

Conceptual models influencing the improvement of postgraduate education in healthcare in Ukraine were analysed. Several strategies were identified for further analysis, including: expanding specialisation programs, continuous education, integrating modern technologies, international cooperation, academic research, financial support, standardisation of education, partnerships with the private sector, and quality assurance of education. Based on the literature review and analysis of conceptual models, a foundation was established: the integration of the knowledge gained, which allows for the systematisation of research results and the drawing of conclusions. This includes:

1. Components of postgraduate education: a description of the types of postgraduate education, such as continuing professional development courses, certification programs, and master's and doctoral programs.

2. Factors influencing career advancement: the identification of key factors affecting the career advancement of healthcare professionals, such as professional skills, certifications, networks, and work experience. The interaction of these factors with the components of postgraduate education, such as deepening knowledge and implementing new technologies, is critical for the successful professional development of healthcare professionals.

3. The relationship between components, which includes a description of the mechanisms by which postgraduate education influences career advancement, such as enhancing qualifications, expanding professional networks, and improving opportunities for promotion.

The comparison and integration of conceptual models into a unified theoretical framework was a key step in formulating research conclusions. This allowed for the systematisation of the results obtained and the development of a more comprehensive understanding of the mechanisms by which postgraduate education contributes to the career advancement of healthcare professionals. An analysis was conducted of various key aspects that should be considered when developing and implementing programs, namely: assessing training needs, developing flexible curricula, utilising modern teaching technologies, engaging experienced faculty and experts, supporting an interdisciplinary approach, supporting continuous learning, implementing a motivation system, evaluating program effectiveness, collaborating with educational institutions and organisations, and ensuring access to modern learning materials.

RESULTS

With the introduction of high-tech diagnostic and treatment methods into medical practice, doctors are constantly finding themselves in a situation where they need to urgently and continuously upgrade their qualifications. Higher medical education, coupled with continuous professional development (participation in professional development programs, courses, and training), is the foundation for career advancement and a mandatory requirement for many positions. An existing postgraduate education system offers various forms of professional development, such as pre-exam cycles, subject improvement cycles, scientific-practical conferences, training seminars, and lecture courses. This situation necessitates the improvement of existing and the search for new forms of systematic knowledge enhancement for doctors.

Postgraduate education is a system designed to train and develop highly qualified professionals, aligning their expertise with European standards, contemporary needs, and the demands of scientific, technological, social, and economic progress, as well as personal and sectoral requirements (Honcharuk *et al.*, 2021). It also encompasses the enhancement of an individual's scientific and cultural capabilities, occurring within educational institutions and through self-directed learning. Postgraduate education in healthcare encompasses all forms of learning that medical professionals undertake after acquiring their initial

qualifications to enhance their knowledge, skills, and competencies. It is critical for maintaining high levels of professionalism and quality in healthcare delivery. Key forms of postgraduate education include residency and internship programs, which medical graduates undertake to specialise in a particular field. These programs provide practical experience under the supervision of experienced physicians and can last several years to a decade, depending on the chosen speciality. Certification and accreditation programs enable healthcare professionals to obtain certifications or accreditation in specific areas (e.g., cardiology, oncology, surgery), often involving both theoretical learning and practical experience. Short-term courses and training programs, covering new medical technologies, treatments, and diagnostic methods, constitute another form. These can be online courses, in-person seminars, or workshops. Professional conferences and symposia play a significant role in postgraduate education, providing platforms for healthcare professionals to discuss the latest achievements in their fields, and share experiences with colleagues from other institutions and countries, while mentorship and mentoring programs offer guidance and support to young medical professionals from experienced specialists.

The career advancement of healthcare professionals is influenced by a multitude of interconnected factors that contribute to overall professional development. A high level of professional skills is a key factor in career advancement for healthcare professionals. This encompasses clinical skills (the ability to accurately diagnose and treat patients), technical skills (knowledge and ability to operate medical equipment), interpersonal skills (the ability to effectively communicate with patients, colleagues, and other professionals), and leadership skills (the ability to organise teams, make decisions, and take responsibility). Certifications and licenses are also significant factors as they demonstrate a high level of qualification and adherence to professional standards. These may include continuing professional development certifications, which attest to ongoing knowledge and skill updates, and specialised certifications reflecting additional training in specific medical fields (cardiology, surgery, etc.). Professional networks also influence career growth, providing opportunities for growth and advancement. For example, participation in conferences, seminars, and other events facilitates the exchange of experiences and knowledge; support and advice from more experienced professionals, colleagues, and mentors can assist in resolving complex situations and making career choices. Building relationships with colleagues from other healthcare institutions or organisations can lead to new career opportunities.

Work experience is a crucial factor in professional development. This includes the duration of employment (the number of years in a particular position, indicating stability and reliability), diversity of experience (working in various healthcare settings or roles, contributing to a wellrounded skill set), and practical achievements (successful completion of complex tasks or involvement in significant projects

enhancing professional reputation). Equally important are the individual qualities and intrinsic motivation of the professional. High work capacity, enabling one to function in stressful environments and solve complex problems, is essential. Goal-orientedness, ensuring a clear vision of career goals and plans, and a willingness to adapt, including openness to new knowledge and methods, are also crucial. Understanding and developing these factors can significantly contribute to a successful career in healthcare.

Based on the aforementioned information, postgraduate education in healthcare aims to:

- ➔ support and update knowledge, as continuous education allows healthcare professionals to stay informed about the latest research, technologies, and treatment methods, which is critically important in the rapidly changing healthcare field;

- ➔ enhance professional qualifications, as educational programmes foster the development of specialised skills, enabling healthcare professionals to provide more effective and higher-quality care.

- ➔ promote career progression and professional development, offering opportunities to assume leadership positions, engage in scientific research, and teach at medical educational institutions;

- ➔ ensure compliance with standards, as postgraduate education helps healthcare professionals meet the requirements of professional standards and regulations that govern medical practice.

The impact of postgraduate education on career advancement in healthcare is multifaceted and significant. It equips healthcare professionals with the new knowledge and skills necessary to provide high-quality medical care. This includes learning about the latest medical technologies, diagnostic methods, and treatments. Healthcare professionals can also choose to specialise in a specific area, becoming experts in that field. For instance, doctors might pursue additional specialisation in cardiology, oncology, or surgery. Education offers professional prospects, opening up new career opportunities such as promotions, leadership roles, or starting one's own practice. Healthcare professionals with higher levels of education are more likely to secure better positions. Furthermore, increased qualifications and specialisation often correlate with higher salaries. Employers are willing to pay more for highly skilled professionals who can provide better quality care. Another aspect influencing career advancement is the support for continuous professional development. Such learning enables healthcare professionals to stay updated on the latest scientific achievements and innovations in medicine. This is crucial for maintaining a high level of competence throughout one's professional life. Healthcare professionals also have opportunities to exchange experiences with colleagues, discuss complex clinical cases, and acquire new ideas to improve medical practice.

It is also important to consider participation in postgraduate educational programs, which fosters professional connections and networks. This can include colleagues,

lecturers, experts, and other specialists with whom one can collaborate or consult. Postgraduate education often involves mentorship programs where experienced professionals guide junior healthcare workers. This promotes the development of professional skills and supports career advancement. Such education also helps healthcare professionals maintain high standards of medical practice, which directly impacts the quality of patient care. Thanks to postgraduate education, healthcare professionals can implement new treatment methods and technologies, improving treatment outcomes and increasing patient satisfaction.

According to the aforementioned information, postgraduate education plays a pivotal role in the professional development of healthcare workers. It enhances qualifications, opens up new career opportunities, supports continuous professional development, fosters social capital, and improves the quality of healthcare services. Investing in postgraduate education is a crucial element of a healthcare system development strategy, contributing to an overall improvement in the level of medical care and public health. Several key principles should be adhered to in the postgraduate training of healthcare professionals to ensure the effectiveness of the learning process and high-quality medical services. These include continuity of education, practical orientation, individual approach, relevance of material, interactive learning methods, multimodality, interdisciplinary approach, assessment and feedback, ethics and professionalism, and motivation for self-development.

Postgraduate training should be an ongoing process, enabling healthcare professionals to continually update their knowledge and skills in line with the latest medical advances. Training should focus on practical skills that directly impact the quality of patient care. Practical sessions, simulations, and clinical placements are essential components. Postgraduate programs should consider the individual needs and interests of healthcare professionals, offering opportunities to choose specialisations and areas of study. Training programs should incorporate the most recent scientific research and recommendations from international medical organisations. It is crucial to continually update teaching materials. The use of interactive methods such as group discussions, case studies, and simulations promotes better learning and the development of critical thinking. Combining various forms of learning (online courses, lectures, seminars, practical sessions) allows for a comprehensive approach to training and provides flexibility in the learning process. Interaction with experts from various medical and scientific fields promotes a holistic approach to treatment and enhances the quality of healthcare services. Regular assessment of knowledge and skills, as well as receiving feedback from tutors and colleagues, allows for timely identification and correction of any training deficiencies.

Particular attention should be paid to the ethical aspects of medical practice and the development of professional qualities such as responsibility, communication skills, and empathy. It is important to encourage

healthcare professionals to engage in self-directed learning and professional development, providing them with access to resources and opportunities for upskilling. Adherence to these principles will help ensure high-quality postgraduate training and contribute to the professional advancement

of healthcare workers. The application of conceptual models of the impact of education on career advancement in healthcare has its specific characteristics. Table 1 below presents their application in this context, along with their strengths and weaknesses.

Table 1. Characteristics of conceptual models of education's impact on career advancement

Model name	Application	Strengths	Weaknesses
Human capital model	In healthcare, investments in the education of medical professionals (physicians, nurses, pharmacists) lead to enhanced qualifications, which directly impact the quality of medical services. Education includes not only basic medical education but also continuous professional development and specialisation	→ improved quality of medical services (higher qualifications lead to better diagnosis and treatment); → increased earnings (more educated professionals typically receive higher salaries and better working conditions); → empirical support (investments in education improve treatment outcomes)	→ high costs (medical education is expensive, which may act as a barrier for some individuals); → unequal access (different countries and regions have unequal access to quality medical education); → determinism (the model does not account for all individual and systemic factors influencing healthcare careers)
Social learning theory	In healthcare, social learning occurs through mentoring, workplace learning, participation in professional associations, and conferences. Medical professionals learn by observing colleagues, exchanging experiences, and discussing clinical cases	→ enhanced practical skills (social learning helps healthcare professionals adapt quickly to realworld working conditions); → development of professional networks (interaction with colleagues helps form professional connections that can support career advancement); → adaptability (on-the-job learning allows quick adaptation to changes in medical practice and technology)	→ heterogeneity (the quality of social learning can vary significantly depending on the environment); → difficulty in measurement (it is challenging to quantitatively assess the impact of social learning on professional advancement); → context-dependence (the effectiveness of social learning depends on the culture and structure of healthcare institutions)
Signalling theory	Educational diplomas and certificates in healthcare act as signals to employers and patients about the qualifications of healthcare professionals. This is particularly important in systems with high competition for positions	→ ensuring quality (certifications and diplomas act as signals to maintain high standards in medical practice); → ease of selection (employers can quickly assess candidates based on their educational achievements); → recognition of professional achievements (diplomas and certificates help acknowledge and reward the professional achievements of healthcare workers)	→ risk of falsification (certificates and diplomas may be forged or obtained dishonestly); → irrelevance of real skills (educational achievements may not always reflect actual professional skills and knowledge); → inequality of opportunity (the signalling system may exacerbate inequality due to limited access to quality education)
Social capital theory	In healthcare, social networks and professional connections are vital for career advancement. Interaction with colleagues, participation in professional associations, and conferences help medical professionals gain new knowledge, exchange experiences and discover new opportunities for career advancement	→ support for career advancement (social networks foster professional development and career advancement); → knowledge exchange (social capital helps healthcare workers stay up-to-date with new developments in medical science and practice); → mutual support (social ties promote mutual assistance and collaboration among healthcare professionals)	→ context-dependence (the effectiveness of social capital is highly dependent on the specific social and professional environment); → difficulty in measurement (it is hard to quantitatively assess the impact of social capital on career advancement); → risk of isolation (excessive reliance on specific social groups can lead to professional isolation)

Source: compiled by the author based on research by M. Banerjee *et al.* (2021) and S. Yekimov *et al.* (2023)

The application of conceptual models of education's impact on career advancement in healthcare helps to understand and improve the professional development of medical practitioners. A combination of these theories can provide a more comprehensive understanding of how education, social interactions, and professional connections

influence healthcare careers, ultimately contributing to the improvement of medical services and the overall health of the population. Conceptual models directly impact the development of postgraduate education in healthcare in Ukraine, which can be enhanced through several strategies, including:

1. Expansion of specialisation programmes. It is important to introduce more specialised programmes for healthcare workers, allowing them to gain in-depth knowledge in specific areas of medicine;

2. Continuous education. Ensuring access to ongoing educational courses and seminars so that healthcare professionals can regularly update their knowledge and skills;

3. Integration of modern technologies. Utilising telemedicine, online courses, and simulation training to enhance the learning process;

4. International collaboration. Introducing exchange programmes with foreign medical institutions to facilitate the exchange of experiences and knowledge;

5. Academic research. Encouraging healthcare workers to engage in scientific research and academic conferences to foster critical thinking and innovation;

6. Financial support. Providing government support for healthcare professionals who wish to enhance their qualifications;

7. Standardisation of education. Developing and implementing unified standards for postgraduate medical education to ensure high-quality training for medical professionals;

8. Partnership with the private sector. Collaborating with private healthcare institutions and pharmaceutical companies to organise training programmes and internships;

9. Evaluation of education quality. Regularly assessing the quality of postgraduate medical education to ensure continuous improvement of programmes.

Enhancing postgraduate medical education will contribute to improving the professional level of healthcare workers and the quality of medical services in Ukraine. To effectively understand and utilise the aforementioned models that explain the impact of education on career advancement, it is necessary to compare their common elements and attempt to integrate them into a unified conceptual framework (Table 2).

Table 2. Comparison and definition of common elements of conceptual models

Analysis elements	Conceptual models			
	Human capital	Social learning	Signal	Social capital
Role of education	Education as an investment in productivity	Education as a process of acquiring knowledge through observation and interaction	Education as a signal to employers about an employee's abilities	Education as a means of forming social connections
Increase in productivity	Direct improvement of qualifications and skills	Skill enhancement through practical training and mentoring	Education as an indicator of potential productivity	Improvement in efficiency through access to resources and support
Career advancement	Greater opportunities for higher salaries and career progression	Opportunities for career advancement through professional contacts and knowledge exchange	Competitive advantage in the job market due to educational achievements	Career opportunities through support from the professional community
Information asymmetry	Reduction of asymmetry through improved knowledge and skills	Reduction of asymmetry through information exchange in social networks	Reduction of asymmetry by providing employers with information on qualifications	Reduction of asymmetry through access to informational resources

Source: compiled by the author based on research by H. Romanova *et al.* (2022), Z. Sharlovych *et al.* (2023) and A. Biloshchytskyi *et al.* (2024)

It is essential to integrate these theories into a unified conceptual model, taking into account the following aspects:

1. Education as an investment and signal – education should be viewed as an investment in human capital, enhancing productivity and employee qualifications. At the same time, educational achievements serve as a signal to employers, facilitating the recruitment process;

2. Social learning and social capital – these concepts are interconnected, as it is important to incorporate mechanisms of social learning, such as mentoring, knowledge exchange, and professional contacts, which complement formal education. The formation of social capital through professional networks and associations also contributes to career advancement;

3. Information transparency – providing access to information regarding qualifications and skills helps reduce

information asymmetry in the labour market. It is crucial to support certification and accreditation systems that ensure the reliability of educational signals;

4. Comprehensive approach to learning – education should encompass both formal educational programmes and informal workplace learning. This includes professional training, seminars, conferences, and other forms of continuous learning.

Based on the information gathered, an integrated conceptual model of the impact of education on career advancement in healthcare has been developed:

➡ education as a comprehensive investment and tool for social learning – education is considered as the integration of formal learning that enhances human capital and informal social learning through professional networks;

➡ information transparency and signal – educational achievements act as signals for employers, but it is

important to ensure the transparency and authenticity of these signals through certification and accreditation;

→ social capital as support for career advancement – social connections and networks provide assistance, knowledge exchange, and access to resources, which foster career advancement and increased productivity.

Therefore, integrating various models of the impact of education on career advancement in healthcare allows for the creation of a comprehensive conceptual framework. This framework considers the role of education as an investment in human capital, its significance as a signal to employers, and the importance of social learning and the formation of social capital.

Postgraduate training significantly impacts future career success. Acquiring necessary additional knowledge in specialised medical fields enhances a specialist's qualifications and makes them more competitive in the job market. Furthermore, possessing a postgraduate education opens up opportunities for higher-level positions, such as leadership roles, administrative positions, or specialised medical roles. Postgraduate courses in medical management and administration prepare specialists for executive functions, contributing to their career advancement. Developing research skills allows healthcare professionals to participate in scientific research, enhancing their reputation and opening up new career prospects. Obtaining additional education in related fields enables specialists to work more effectively in interdisciplinary teams, making them valuable members of healthcare institutions. Additional education, including participation in conferences, seminars, and training, allows specialists to stay up-to-date with the latest medical advances, thereby improving the quality of healthcare services provided. It is crucial to highlight recommendations for healthcare institutions regarding the implementation of effective postgraduate education programs, which are essential for ensuring high-quality medical services and career advancement for healthcare professionals. Here are some key aspects to consider when developing and implementing such programs:

Assessment of training needs. Before implementing a postgraduate education programme, it is necessary to conduct a thorough assessment of training needs. This can be done through surveys of healthcare professionals, analysing their work performance, and reviewing recent trends in the medical field. Identifying specific knowledge and skills that need improvement will help create a targeted training programme.

Development of flexible curricula. The curricula should be flexible and tailored to the different levels of expertise of healthcare professionals. It is important to consider the specific requirements of various medical specialities and provide opportunities for individualised learning. For instance, courses on the latest diagnostic methods could be designed for general practitioners, while training on new surgical instruments could be developed for surgeons.

Use of modern learning technologies. The incorporation of modern technologies, such as online courses, webinars,

simulation-based training, and mobile apps, can make learning more accessible and effective. Online learning is particularly important for healthcare professionals who often have limited time for traditional classes.

Involvement of experienced lecturers and experts. Lecturers and experts with significant practical experience in their field can greatly enhance the quality of postgraduate education. They can share their knowledge, practical advice, and the latest achievements in medical science. Inviting international experts can also be beneficial for exchanging global expertise.

Support for an interdisciplinary approach. Interdisciplinary courses and training that bring together various medical specialities promote effective teamwork and a comprehensive approach to patient care. For instance, courses that cover both medical and administrative aspects of healthcare can improve the overall effectiveness of healthcare institutions.

Support for continuous learning. Postgraduate education should be an ongoing process rather than a one-time event. Healthcare institutions should encourage their staff to engage in continuous learning and self-development by providing opportunities for regular professional development courses, as well as participation in conferences and seminars.

Implementation of a motivation system. Healthcare institutions should create motivational incentives for employees participating in postgraduate education programmes. These may include financial bonuses, career advancement opportunities, salary increases, or additional vacation days. Employees must recognise tangible benefits from their involvement in training programmes.

Evaluation of programme effectiveness. Regular assessment of the effectiveness of postgraduate education programmes is essential for their continuous improvement. This can be achieved by gathering feedback from programme participants, analysing their career achievements post-course, and evaluating the changes in the quality of healthcare services.

Collaboration with educational institutions and organisations. Collaboration with universities, medical colleges, and professional associations can assist in developing high-quality training programmes. Such partnerships allow for the use of academic expertise and resources, enhancing the overall quality of education.

Ensuring access to modern learning materials. Healthcare institutions should provide their staff with access to up-to-date learning resources, such as academic journals, books, video lectures, and other materials. This ensures that medical professionals can continually refresh their knowledge and stay informed about the latest developments in their field.

Effective postgraduate education programs are an essential tool for enhancing the qualifications of healthcare professionals and their career advancement. Healthcare institutions that invest in such programs acquire qualified and motivated staff, which contributes to improving the quality of healthcare services and the overall development of the healthcare system. It is important that postgraduate

education programs are flexible, modern, and focused on the needs of healthcare professionals, providing them with opportunities for continuous professional development.

DISCUSSION

The research has determined that postgraduate education significantly impacts career advancement in healthcare. Continuous learning helps professionals to deepen their knowledge and skills, making them more competent in their professional activities. Thanks to additional education, healthcare professionals can aspire to higher positions, take on more responsibilities, and have more opportunities for professional development. Specifically, I.L. Kuchyn *et al.* (2024) argue that professionals with postgraduate education often receive higher salaries, as they possess a broader range of knowledge and skills. Postgraduate education promotes continuous professional development, which is essential in the rapidly changing medical environment, where new technologies and treatment methods are constantly emerging. During their studies, professionals have the opportunity to build professional networks, which can be beneficial for their future careers. Postgraduate education is a crucial factor that contributes to career advancement and the improvement of healthcare professionals' professional level.

Researchers express various opinions regarding the significant impact of postgraduate education on career advancement in healthcare, but they generally agree that this impact is substantial and positive, as proven by the authors in their research. Primarily, research and opinions show that postgraduate education contributes to a significant increase in the knowledge and skills of healthcare professionals. This allows them to perform their duties more effectively and implement the latest treatment methods and patient care.

According to research by V. Yekhalov *et al.* (2023) and V. Rudichenko *et al.* (2023), healthcare professionals with postgraduate qualifications are more likely to receive promotions, hold leadership positions, and have greater opportunities for professional development. This is a reasonable assertion, as it aligns with the fact that employers value highly skilled individuals. Studies indicate that postgraduate education often leads to higher salaries. Professionals with additional qualifications can apply for higher-paying positions and receive additional financial bonuses. This position is highlighted in the scientific research of T.S. Lasytsia *et al.* (2022), who indicate that postgraduate education provides an opportunity to establish new professional contacts and expand cooperation networks. This facilitates the exchange of experiences and knowledge, which is essential for professional development. Researchers add that postgraduate education contributes to the personal development of healthcare professionals, increasing their self-confidence and job satisfaction. Scientists L. Makarenko *et al.* (2021) agree that postgraduate education has a significant positive impact on career advancement and professional development in healthcare. This study examined the impact of postgraduate education on career advancement

in public health. The research showed that graduates who had completed postgraduate studies had more opportunities for career advancement, including higher positions and greater responsibility in the workplace. The authors emphasise that postgraduate education contributes to the development of key competencies necessary for a successful career in medicine, such as clinical skills, managerial abilities, and research. At the same time, this study focuses on how postgraduate education affects employment and career success in various fields, including healthcare. The authors conclude that postgraduate education significantly increases the chances of a successful career, particularly in the medical field.

On the one hand, most authors, such as S. Yagelo *et al.* (2022), have determined that postgraduate education influences the career advancement of nurses. Results have shown that nurses with postgraduate qualifications had a higher likelihood of promotions, obtaining leadership positions, and receiving salary increases. On the other hand, this work examines global changes in healthcare education and their impact on career advancement. They emphasise the importance of innovative approaches to postgraduate education to ensure effective career development in the healthcare sector. These studies underscore the significance of postgraduate education for professional advancement in healthcare and demonstrate that it is a key component of achieving career success.

Discussions have revealed that healthcare is becoming increasingly complex and specialised in the modern world. The introduction of new technologies, treatment methods, and research demands that healthcare professionals continually update their qualifications. Postgraduate education allows them to remain current and competent in their professional activities. Postgraduate education contributes to improving the quality of healthcare delivery. Highly qualified healthcare professionals are able to more effectively diagnose and treat patients, applying the latest techniques and technologies, which directly impact public health. Healthcare professionals with postgraduate qualifications have a higher chance of successful employment and career advancement. Employers prefer specialists with additional knowledge and skills, as they can take on more responsibility and perform more complex tasks. S.H. Ubohov *et al.* (2021) highlight that postgraduate education opens up new opportunities for career development. Healthcare professionals can obtain higher positions, participate in research, teach at higher education institutions, and become leaders in their field.

However, research highlights the increasing globalisation, which demands that healthcare professionals meet international standards and requirements. Postgraduate education enables them to acquire the knowledge and skills necessary to work in international healthcare institutions and projects, as well as to participate in global scientific research. I. Pinchuk *et al.* (2021) found that the healthcare sector is constantly changing, and healthcare professionals must be prepared for new challenges such

as pandemics, new diseases, and changes in legislation. Postgraduate education helps them adapt quickly to these changes and respond effectively. The importance and ongoing discussions about the impact of postgraduate education on career advancement in healthcare are driven by the need for continuous professional development of healthcare professionals, the improvement of healthcare quality, increasing labour market demands, and globalisation. It is a key element in ensuring the effective functioning of the healthcare system and improving population health.

It is important to highlight that postgraduate education is an integral part of a healthcare professional's career, ensuring the continuous updating of their knowledge and skills. This not only contributes to their professional development but also improves the quality of care provided to patients. Investment in postgraduate education is a key element in maintaining high standards in healthcare and ensuring population health. L. Teheux *et al.* (2021) and M. Poplavskyi (2021) have identified that postgraduate education for healthcare professionals provides continuous updates to the knowledge and skills required for high-quality healthcare delivery. It encompasses continuous learning, practical orientation, individualised approaches, and up-to-date materials. Interactive learning methods, interdisciplinary approaches, and regular assessments contribute to professional advancement. Ethics, professionalism, and motivation for self-development are essential and enhance the quality of medical care.

Overall, these challenges and limitations must be considered when implementing new technologies in postgraduate healthcare education. This requires concerted efforts from institutions, government, and other stakeholders to ensure the accessibility, support, and development of postgraduate education. This issue needs further research and development to identify clear strategies for the positive impact of postgraduate education on career advancement in healthcare.

CONCLUSIONS

Therefore, postgraduate education plays a crucial role in the career advancement of healthcare professionals. In an environment of constant change and development in medical knowledge, technologies, and standards, healthcare

professionals must continually update their knowledge and skills. Postgraduate education provides this opportunity, equipping healthcare workers with new knowledge, competencies, and qualifications that enhance their professional competitiveness and contribute to career advancement.

Research findings indicate that postgraduate education promotes an interdisciplinary approach in healthcare. Professionals who have received additional education in related fields, such as bioinformatics, medical ethics, or public health, can work more effectively in interdisciplinary teams, addressing complex medical problems. This makes them valuable team members and contributes to career growth. Additionally, postgraduate education allows healthcare professionals to stay abreast of the latest medical advancements and technologies. Participation in conferences, seminars, and training sessions enables them to familiarise themselves with the newest treatment and diagnostic methods, improving the quality of healthcare services and making them more competitive in the job market. Postgraduate education is a significant factor in career advancement in healthcare, providing professionals with opportunities for professional development, specialisation, qualification enhancement, and the acquisition of new competencies.

This research confirms the information that postgraduate education enhances qualifications, develops leadership skills, promotes specialisation, opens up research opportunities, and ensures the competitiveness of healthcare professionals, thereby contributing to their career advancement. Limitations of the study include potential subjectivity in the presented research and the lack of longterm observations of the career advancement of healthcare professionals in the context of modern challenges, including global ones. Future research could focus on comparing different postgraduate education programs, their impact on various specialities, and the long-term career outcomes of healthcare professionals.

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CONFLICT OF INTEREST

None.

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Вплив післядипломної освіти на кар'єрне зростання у сфері охорони здоров'я

Анотація. Метою дослідження був опис механізмів, через які післядипломна освіта впливає на кар'єрне зростання. Здійснено інтеграцію отриманих знань, що дозволило систематизувати результати дослідження та зробити висновки, що включало компоненти післядипломної освіти, фактори кар'єрного зростання та взаємозв'язок між компонентами. Отримані результати визначили роль післядипломної освіти у розвитку кар'єри професіоналів сфери охорони здоров'я. В рамках дослідження проаналізовано як формальні навчальні програми, так і неформальні можливості навчання, що впливають на професійний ріст. Визначено наступні концептуальні моделі: людського капіталу, теорія соціального навчання, теорія сигналу та теорія соціального капіталу. Здійснено їх аналіз, що включав розгляд існуючих теорій, які пояснюють вплив освіти на кар'єрний ріст. Оцінено переваги та недоліки кожної моделі, їх застосовність до сфери охорони здоров'я та можливі обмеження. Здійснено порівняння моделей з метою визначення спільних елементів та об'єднання їх у єдину концептуальну основу. Результати свідчили про те, що післядипломна освіта значно підвищує компетентність, рівень задоволеності роботою та відкриває додаткові можливості для кар'єрного зростання. Визначено, що спеціалісти, які отримали додаткову освіту в суміжних галузях, мають можливість ефективніше працювати в міждисциплінарних командах, вирішуючи складні медичні проблеми. Це робить їх цінними членами команди та сприяє кар'єрному зростанню. Виявлено, що інвестиції в навчання та професійний розвиток корелюють з покращенням якості медичних послуг. Ці висновки підкреслюють важливість підтримки безперервної освіти для забезпечення високих стандартів у сфері охорони здоров'я. Результати дослідження можуть бути використані організаціями, які займаються ліцензуванням медичних закладів для встановлення вимог та стандартів щодо безперервної професійної освіти

Ключові слова: безперервна професійна освіта; можливості фахівця; навички; медична сфера; якість медичних послуг