UDC 378.046-021.68:61:159.9:37.013
DOI https://doi.org/10.11603/m.2414-5998.2026.1.16027

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A PSYCHOLOGICAL AND PEDAGOGICAL MODEL OF THE PROFESSIONAL TRAINING OF FUTURE PHYSICIANS IN HIGHER EDUCATION INSTITUTIONS

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ПСИХОЛОГО-ПЕДАГОГІЧНА МОДЕЛЬ ПРОФЕСІЙНОЇ ПІДГОТОВКИ МАЙБУТНІХ ЛІКАРІВ У ЗАКЛАДАХ ВИЩОЇ ОСВІТИ

Abstract. The article analyzes the theoretical foundations and practical mechanisms for implementing a comprehensive psychological and pedagogical model in the professional training of future physicians. The study contextualizes current transformations in medical education, characterized by a shift from a predominantly information-transmission paradigm toward a competence-based and personality-oriented approach aimed at shaping the professional identity, ethical responsibility, and psychological maturity of medical practitioners. The structural components of professional competence are systematized, encompassing cognitive, clinical-operational, communicative, ethical, and psychological dimensions, including resilience as an integral regulatory element. Innovative educational technologies are examined, particularly simulation-based learning, standardized patient methodology, digital platforms, and narrative medicine as tools for fostering reflective practice and empathetic communication. The stages of professional formation are outlined, from foundational theoretical preparation to supervised clinical practice and the consolidation of autonomous professional performance. Criteria and indicators for assessing the quality of medical training in higher education institutions are defined in alignment with competence-based standards. Special attention is devoted to the implementation of the proposed model under contemporary societal challenges, including socio-economic instability and the impact of military aggression, which intensify the need for psychological sustainability and ethical accountability in medical practice. The study substantiates the integration of advanced medical technologies with humanistic values, emphasizing dignity, compassion, and responsibility as essential components of twenty-first-century medical professionalism.

Key words: psychological and pedagogical model; training of future physicians; professional competence; simulation-based methods; standardized patient; innovative educational technologies; narrative medicine.

Анотація. У статті здійснено комплексний аналіз теоретичних засад та практичних аспектів реалізації психолого-педагогічної моделі у системі професійної підготовки майбутніх лікарів. Досліджено сучасні трансформації, які відбуваються в медичній освіті, що полягають у переході від переважно інформаційно-трансляційної парадигми до компетентнісно орієнтованої моделі, спрямованої на формування цілісної професійної ідентичності, клінічного мислення, етичної відповідальності та психологічної стійкості фахівця. Виокремлено й охарактеризовано структурні компоненти професійної компетентності, зокрема когнітивний, клініко-практичний, комунікативний, аксіологічний і рефлексивний складники. Проаналізовано інноваційні технології навчання, серед яких симуляційні методи, технологія стандартизованого пацієнта, цифрові освітні інструменти та наративна медицина як засіб розвитку емпатії й професійної рефлексії. Окреслено етапи професійного становлення майбутнього лікаря – від базової теоретичної підготовки до формування автономної професійної діяльності в умовах клінічної практики. Визначено критерії та показники оцінювання якості підготовки здобувачів вищої освіти відповідно до сучасних стандартів медичної освіти. Особливу увагу приділено специфіці впровадження моделі в освітній процес в умовах соціально-економічних трансформацій та наслідків воєнної агресії, що зумовлюють підвищені вимоги до психологічної витривалості та професійної відповідальності лікаря. Обґрунтовано необхідність поєднання високотехнологічних інструментів навчання з принципами гуманізму, людяності й гідності, що відповідає викликам і цінностям XXI століття.

Ключові слова: психолого-педагогічна модель; підготовка майбутніх лікарів; професійна компетентність; симуляційні методи; стандартизований пацієнт; інноваційні технології навчання; наративна медицина.

Introduction. The contemporary healthcare system is undergoing profound transformations that necessitate a fundamental reconsideration of approaches to the professional training of medical personnel. The traditional medical model, which focused exclusively on pathophysiology and disease treatment, is gradually being replaced by a bio-psycho-social paradigm. Within this context, higher medical education faces the challenge of forming not only clinically competent specialists but also well-rounded professionals capable of empathy, effective communication, self-regulation, and continuous self-development.

The relevance of implementing a comprehensive psychological and pedagogical model for the training of future physicians is determined by the need to bridge the gap between theoretical knowledge and real clinical practice, where physicians encounter not merely a biological object but a patient as a person experiencing illness (Kravtsova, 2013). As scholars have noted, a physician's mental health and psychological resilience constitute a core, relatively non-specific and dynamic foundation for the productivity of all aspects of professional activity (Syropiatov & Honcharenko, 2014, p. 432). We contend that the educational process in medical universities should be oriented towards the integration of medical knowledge with psychological competences, thereby ensuring the formation of a high level of professional competence and professionalism.

The aim of the article isto analyze and substantiate a comprehensive psychological and pedagogical model for the professional training of future physicians, examining its theoretical foundations, structural components of professional competence, innovative educational technologies, and practical implementation within higher medical education institutions, with a view to enhancing clinical competence, psychological resilience, and the formation of a mature professional identity in response to contemporary societal and global challenges.

Theoretical framework. The central concept in this context is *professional competence*. Within academic discourse, there exists a plurality of approaches to defining its structure, reflecting the inherent complexity of medical practice. Professional competence is commonly interpreted as a specialist's capacity to effectively apply acquired knowledge, skills, and abilities in problem-solving, to seek new experience, and to act autonomously (Dubinin et al.).

An analysis of scholarly sources makes it possible to identify several key approaches to structuring professional competence that underpin the proposed model. L. Dudikova (2009) distinguishes the following components of competence: motivational, cognitive, activity-based, and reflective, with particular emphasis on the psychological structure in which reflection and motivation are regarded as equivalent in importance to knowledge and skills (Dudikova, 2009, p. 209). M. Mruha (2007) identifies conceptual, activity-based, and motivational components of competence (Mruha, 2007). I. Humenna highlights communicative and role-based components, focusing on professional communication and social interaction within the physician-patient system (Humenna, 2016; Nakhaieva et al., 2021, p. 94). A. Titova (2017) emphasizes a structural and functional model that foregrounds the integration of professional qualities as a basis for diagnosing readiness for professional activity (Titova, 2017).

Synthesizing the approaches outlined above, we argue that the psychological and pedagogical model is based on a four-component structure:

The motivational component, as the foundation of professional development, encompasses a system of value orientations, awareness of the social significance of medicine, a commitment to helping others, and a drive for self-improvement. We maintain that without sustained motivation, it is impossible to overcome the challenges of medical education and future professional practice.

The cognitive component comprises a system of theoretical knowledge derived from fundamental disciplines (such as anatomy and physiology) and clinical subjects. Crucially, the emphasis lies not merely on the volume of retained information but on the development of clinical thinking – the ability to analyze and synthesize information and to make decisions under conditions of uncertainty (Mruha, 2007).

The activity-based (operational) component includes mastery of practical skills and abilities through which knowledge is transformed into concrete action, ranging from basic manipulations to complex surgical interventions. Scholars distinguish between *abilities* (the capacity to perform an action when required) and *skills* (automated, habitual actions) (Kravtsova, 2013).

The reflective component refers to the capacity for self-analysis, self-evaluation, and self-regulation. Reflection enables physicians to analyze their own errors, manage emotional states, and prevent professional burnout. It functions as a feedback mechanism within the system of personal and professional development (Mruha, 2007).

In addition to core competencies, a number of specialized forms of competence may be distinguished, including self-competence (self-understanding), social competence (effective teamwork and interpersonal interaction), and extreme professional competence (the ability to act effectively under conditions of stress, disasters, or armed conflict) (Levko, 2023, p.110). The latter has acquired particular significance in the context of contemporary Ukraine, where physicians are required to work

under constant threat to life and manage a large influx of traumatized patients.

Professional development should not be understood as a linear process of knowledge accumulation but rather as a complex transformation of personality. Within the psychological and pedagogical model, this process is examined through the lens of the formation of the student's subjectivity and active agency. Research indicates that professional development involves the structuring and progressive enhancement of a constellation of professionally oriented personal characteristics. Key components include *personal orientation*, determined by motives for career choice, value orientations, and socio-professional status; and *professionally significant qualities*, encompassing communicative qualities (capacity for verbal and non-verbal communication), volitional qualities (decisiveness, self-control), moral and ethical qualities (honesty, responsibility), and organizational abilities (Levko, 2023, p. 112).

Mental health occupies a particularly important place as a resource for professional performance. Training programmes must therefore take into account the risks of maladaptation and stress. In this regard, the introduction of targeted interventions, such as training programmes focused on *maintaining the mental health of future physicians through art therapy*, constitutes a prerequisite for successful learning and enables the assessment of their effectiveness in supporting students' psychological well-being (Syropiatov & Honcharenko, 2014, p. 433).

The content-related and procedural dimensions of the structural and functional model are realized through the integration of target-oriented, content-based, organizational, and outcome-focused components. The process of physician training is long-term and multi-staged, with each stage characterized by specific objectives, content, pedagogical strategies, and psychological features.

At the initial adaptation stage, which encompasses the first two years of study, students of higher medical education develop a scientific worldview through the study of fundamental disciplines such as anatomy, histology, and physics, alongside humanities subjects including the native language, foreign languages, philosophy, and psychology. The subsequent pre-clinical stage, corresponding to the third year of study, marks students' first contact with patients in clinical settings. This stage facilitates the overcoming of the "theory–practice" gap and supports the formation of initial clinical skills through courses in propaedeutics and pathophysiology. The next phase is the clinical stage, which covers the fourth to sixth years of medical education. During this period, a modular system of instruction in surgery, internal medicine, paediatrics, and related disciplines, combined with bedside clinical training and patient management, contributes to the development of professional responsibility and clinical reasoning skills. The final stage, depending on the medical specialty and typically lasting from one to three years, is internship training, during which the definitive formation of professional skills takes place. This staged structure allows for a gradual increase in task complexity and professional responsibility, thereby ensuring a smooth transition to independent clinical practice. The implementation of this model is inconceivable without the use of contemporary pedagogical technologies that transform passive information reception into active learning. One such technology is simulation-based training.

Simulation technologies are widely recognized as the "gold standard" of modern medical education. Their primary purpose is to facilitate the development and assessment of practical clinical skills. Simulation-based training relies on realistic modelling of clinical situations using biological, mechanical, electronic, and virtual models and offers several advantages, i.e.*safety* (clinical experience is acquired without risk to patients, thereby reducing learners' fear of making mistakes); *reproducibility* (the possibility of unlimited repetition of procedures until automatization is achieved) (Kudria et al., 2020); *exposureto rare pathologies* (training responses to conditions that occur infrequently in practice but require immediate intervention); and *objective assessment* (the opportunity for detailed educational evaluation supported by video recording and analysis).

At the same time, an essential component of simulation-based training is *debriefing*, defined as a structured analysis of actions performed following the completion of a scenario. Debriefing activates reflective thinking, provides constructive feedback, and enables the transformation of lived experience into stable and transferable knowledge.

Simulation-based education specifically employs the *Standardized Patient Methodology*, which reproduces both the symptoms and psychological reactions of a real patient, thereby enabling the following: assessment of communicative skills (including the ability to take a medical history, establish rapport, and demonstrate empathy); modelling of complex clinical situations (such as delivering a terminal diagnosis, managing an aggressive patient, and ensuring confidentiality); and the opportunity to receive feedback directly from the "patient," who can describe how they felt during the consultation (e.g., whether the interaction was comfortable, comprehensible, or anxiety-provoking) (Dushyk et al., 2021).

Studies conducted at I. Horbachevsky Ternopil National Medical University confirm the effectiveness of the Standardized Patient Method in the acquisition of clinical competence. Student performance is evaluated by instructors using a point-based grading system, followed by joint discussion of errors after the training session and

the opportunity to engage in additional simulation-based activities, particularly role-playing exercises. The psychological impact of this educational model lies in a shift of perspective, i.e. when students assume the role of the patient, they begin to better understand patient vulnerability, fears, and the need for emotional support. This process contributes to the development of empathy and deontological culture, understood as the ability to analyze patient behaviour from an ethical standpoint and to master strategies of appropriate interaction (Nakhaieva et al., 2021, p. 94). The key psychological and pedagogical conditions for such interaction include respect for the patient as a person, consideration of age-related and individual characteristics, creation of positive motivation for recovery, and conscious control of verbal and non-verbal communication (a supportive tone and clear instructions). In this context, the communicative culture of the future physician is assessed and developed through specialized training programmes and courses aimed at mastering active listening, persuasion, and conflict resolution skills (Trehub, 2016).

The contemporary psychological and pedagogical model of training medical students integrates psychotherapeutic methods and narrative practice into the educational process. A significant component of this training is a specific form of group work focused on developing practical "doctor–patient" interaction skills. Unlike clinical manuals, which primarily detail diagnostic and treatment protocols, this approach analyses the physician's subjective experience, emotional responses, and communicative difficulties encountered during interactions with patients (Khomenko, 2015, p. 326). The objectives of this model are, first, to identify "blind spots" by uncovering unconscious psychological defence mechanisms and biases that hinder effective patient contact; second, to enhance communicative competence in future professional practice by identifying latent motives underlying patient behaviour (e.g., reasons for non-adherence to medical recommendations or aggressive conduct); third, to implement psychoprophylaxis aimed at reducing anxiety levels, providing emotional support from peers, and preventing emotional burnout; and fourth, to broaden understanding of the therapeutic process by recognizing that the physician's personality itself constitutes a therapeutic factor. This experience demonstrates that participation in such groups helps medical students and interns to recognize their own limitations, distinguish professional roles from personal involvement, and maintain psychological resilience.

Particular emphasis in the training of future physicians is placed on narrative medicine, understood as the patient's narrative account of illness and the physician's ability to recognize, absorb, and interpret this narrative (Filonenko, 2015). An important stage of training is the initial phase, which encompasses the first two years of study, during which a scientific worldview is formed through the study of humanities disciplines (native tongue and foreign languages, philosophy, psychology). At this stage, medical students, through processes of externalization and reconstruction, analyze illness not as a mere collection of symptoms but as a life situation that affects patient identity. In this regard, special attention is given to reflective writing, whereby future physicians produce essays or "illness narratives" that focus not on medical facts but on personal experiences, reflections about the patient, and the social context of the patient's life, thereby fostering empathy and a deeper understanding of human nature. The implementation of narrative practices enables students to develop listening skills, appreciate the uniqueness of each patient's experience, and establish trusting relationships. This approach counteracts the dehumanization of medicine by transforming the physician from a "technician of the body" into a healer. The effectiveness of the psychological and pedagogical model is determined through a system of criteria and indicators of professional competence formation, which assess the development of professional motivation, readiness for self-improvement, the presence of stable moral convictions, the scope and quality of knowledge and the ability to activate it in practice, as well as communicative effectiveness and the capacity to achieve positive treatment outcomes (Filonenko, 2015).

The implementation of the psychological and pedagogical model for the professional training of future physiciansin Ukraine occurs against the backdrop of unique challenges and needs, as the globalization of science and medicine demands proficiency in foreign languages from contemporary physicians. Approximately 90% of all medical information worldwide is published in English. Consequently, the study of a foreign language in medical higher education institutions has ceased to be a general educational discipline and has become an essential tool for professional development. This enables future physicians to access evidence-based medicine, adhere to international protocols, and participate in the global scientific discourse. The integration of language training with specialized medical disciplines fosters cognitive flexibility and broadens professional horizons.

Equally significant is the role of digital technologies and informatization, which have become integral to medical education. Health information systems, digital learning platforms, virtual simulators, and patient-monitoring applications are increasingly embedded in the educational process. This necessitates the development of digital competence among students – that is, the ability to work with electronic data, analyze large datasets, and utilize telemedicine technologies effectively.

The Russian aggression and the imposition of martial law in Ukraine have created unprecedented challenges for medical education. The profound transformation of societal institutions requires physicians to be prepared to operate under extreme conditions, provide care for combat-related injuries, and contribute to the psychological rehabilitation of affected populations (Levko, 2023). Consequently, the psychological and pedagogical model assumes particular importance, emphasizing the development of extreme professional competence (stress resilience, the ability to make decisions under time and resource constraints), patriotic education and civic responsibility (understanding the physician's role in safeguarding the nation), and psychological self-care (skills for preventing post-traumatic stress disorder and secondary traumatization among healthcare workers).

Conclusions and research prospects. The analysis conducted indicates that the psychological and pedagogical model for the professional training of future physicians constitutes a complex, multidimensional system that meets contemporary societal demands and aligns with global trends in medical education. The model encompasses integrative elements, successfully combining clinical training with psychological development and recognizing that a physician's professionalism is founded upon the harmonious integration of knowledge-based competencies (*hard skills*) and personal qualities (*soft skills*); technological orientation, whereby the use of simulation-based methods, standardized patients, and digital tools enables the safe and effective development of practical skills while minimizing risks to patients; psychological emphasis, with the incorporation of narrative medicine and personal growth training being critically important for preventing professional burnout and fostering the formation of a mature professional identity; and outcome focus, in which clearly defined competency criteria and levels allow for the objective evaluation of training quality and the implementation of refinements within the educational process.

The successful implementation of this model within higher education institutions requires systematic efforts, including the enhancement of material and technical infrastructure (e.g., establishment of simulation centres), the professional development of academic staff in psychological and pedagogical methods, and the creation of a supportive educational environment that assists students throughout the challenging process of professional formation. Such an approach ensures the preparation of physicians capable not only of treating diseases but also of healing patients, guided by the principles of humanism, professionalism, and ethical responsibility.

Funding. None.

Conflict of Interest. Author Nataliia Yelahina is the Executive Editor of the journal. Nataliia Yelahina had no involvement in the peer-review process or in the editorial decision-making regarding this manuscript. The manuscript was handled by an independent editor in accordance with the journal's standard peer-review procedures.

Author Contributions. Nataliia Yelahina – Conceptualization, Methodology, Writing – Original Draft, Project Administration.

Thomas Schröder – Data Curation, Writing – Review & Editing, Supervision.

Authors approved the final version of the manuscript.

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Дата першого надходження статті до видання: 15.12.2025
Дата прийняття статті до друку після рецензування: 29.01.2026
Дата публікації (оприлюднення) статті: 26.03.2026