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**UNIVERSITY DIDACTIC TECHNOLOGIES
FOR DEVELOPING THE PROFESSIONAL EMPATHY
IN MEDICAL STUDENTS**

Specialty 531.01 - General Theory of Education

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LIST OF ABBREVIATIONS:

In Romanian:

ESS - Engleza pentru scopuri specifice

JSE - Scala de empatie a lui Jefferson

EM - Empatie medicală

USMF - Universitatea de Stat de Medicină și Farmacie „N. Testemițanu”

GE - Grup experimental

GC - Grup de control

CD - Contact direct

SI - Studiu individual

In English:

WHO - World Health Organization

GMC - General Medical Council

JSPE - Jefferson Scale of Physician Empathy

EG - Experimental Group

CG - Control Group

THE CONCEPTUAL FRAMEWORK OF THE RESEARCH

The actuality and importance of the research topic are determined by the need to develop medical empathy in the context of ongoing transformations in education and healthcare systems, which increasingly require the formation of socio-emotional competencies in medical students. Medical empathy is recognized as a core professional competence, playing a decisive role in ensuring the quality of patient care and patient satisfaction with medical services. International and national educational policy documents, such as the Education Code of the Republic of Moldova [19], the University Curriculum for initial medical training [23], the European Qualifications Framework for Lifelong Learning [15], and the World Health Organization [62], emphasize the importance of developing social communication competencies, including ME, as a fundamental dimension of medical professionalism.

The importance of the research stems from a substantial gap identified in the literature between the theoretical recognition of medical empathy and its insufficient integration into initial professional training. On the one hand, empathy is universally acknowledged as a predictor of the quality of medical care; on the other hand, longitudinal studies [37], [48] indicate a significant decline in empathy levels during medical training. This concerning trend is further exacerbated by the absence of a coherent and systematic pedagogical framework for the development of ME within the university curriculum, resulting in a methodological gap with direct implications for the professional preparation of future physicians. Recent studies in medical education [7], [8], [43] demonstrate that empathy can be effectively developed through structured educational interventions [69], [75], [76], which enhances the scientific relevance and practical value of the present research in the context of improving the initial professional training of medical students [73], [77].

The description of the research field and identification of the research problem. In recent decades, the issue of developing medical empathy in medical students has remained a central concern for researchers at both national and international levels. The growing interest in the study of medical empathy is largely explained by persistent theoretical and methodological uncertainties regarding its development and assessment within the process of initial professional training. Significant contributions from researchers in psychology, pedagogy, and medical sciences have

advanced the scientific definition and interpretation of key concepts such as empathy, medical empathy, emotional culture, and university didactic technologies, highlighting their decisive role in the professional formation of medical students. At the same time, the insufficient conceptualization and practical integration of medical empathy within university education continue to generate a methodological gap, with direct implications for the quality of initial professional training in medicine.

At the international level, interdisciplinary studies reflect multiple approaches to the concept of empathy. S. Marcus examines empathy from the perspective of personality structure, emphasizing the interdependence between empathic capacity and individual traits [45]. Th. Lipps interprets empathy as aesthetic projection and affective identification with others [42], while C. Rogers conceptualizes it as a fundamental therapeutic condition for authentic interpersonal relationships [52]. M. H. Davis proposes a multidimensional model of empathy, structured around cognitive and affective components [25], whereas M. Hoffman and N. Eisenberg highlight its developmental origins and prosocial foundations in moral development and altruistic behavior [34]. J. Decety and P. L. Jackson describe the neurobiological architecture of empathy and its underlying functional mechanisms at the brain level [26].

The concept of medical empathy is examined by M. Hojat from the perspective of the physician-patient relationship [35] and operationalized through the Jefferson Scale of Empathy [38], while M. Neumann et al. document a decline in empathy during medical training [48]. The effectiveness of educational interventions aimed at fostering professional empathy has been investigated by S. A. Batt-Rawden et al. [8], R. F. Baugh et al. [9], and G. McNally et al. [43], whose findings demonstrate that empathy can be developed through structured educational programs focused on personal and professional growth. ***University didactic technologies for developing empathy*** have been addressed by K. A. Stepien and A. Baernstein, who provide a foundation for pedagogical interventions in this area [55]; R. Charon emphasizes the formative value of narrative medicine [17]; and H. Riess et al. demonstrate the effectiveness of clinical simulation in enhancing empathic skills [51]. More recent studies by K. C. Fragkos and P. E. S. Crampton [28], S. Ardenghi et al. [4], M. Baseer et al. [7], D. J. Sarkis et al. [54], H. L. Ngo et al. [49], and G. Li Pira et al. [50] identify and validate

contemporary university teaching approaches that support the development of medical empathy in higher education.

At the national level, the issue of developing medical empathy and socio-emotional competencies in higher education represents a significant area of interest for researchers in the field of pedagogy. S. Chițu [18] investigates the development of teachers' empathy as an essential pedagogical competence, providing conceptual benchmarks relevant to the present study. Vl. Guțu [32] offers a theoretical foundation for competency-based university curricula in higher education. M. Cojocaru-Borozan [20], [21] establishes the research direction of the Pedagogy of Emotional Culture by conceptualizing the notion of teachers' emotional culture and developing university didactic technologies aimed at fostering it. Al. Barbăneagră [5] contributes to the development of university-level didactic strategies for multilingual education in higher pedagogical education, while M. Șevciuc [56] addresses the theoretical foundations of professional competence development and university didactics. T. Bushnaq [14] highlights the role of communicative technologies in English language teaching, and A. Glavan [29] explores key dimensions of quality of life and professional development in the university context. D. Antoci [2] develops the theory and methodology of value orientation formation in young people, providing an axiological framework applicable to initial professional training. T. Kononova [39] contributes to foreign language didactics through the use of multimodal texts as tools for developing linguistic competencies. O. Golubovschi [31] examines didactic technologies for the development of professional competencies in university settings, while A. Betivu [10] conceptualizes a theoretical model of adolescents' existential style, operationalized through indicators, descriptors, and professional values. T. Șova [58] develops a theoretical and applied framework for managing professional stress, emphasizing the importance of emotional self-regulation, and L. Țurcan [60] promotes emotional culture and resilience in professional training. E. Bârsan [33] substantiates the paradigm of assertive communication in higher education, underlining the role of communication skills in professional development and interpersonal relationships. A. Afanas [1] conceptualizes a system of continuous professional development based on competency standards, indicators, and evaluation criteria, supporting the understanding of empathy as a developable dimension of professional identity.

Scientific studies on medical empathy reveal the diversity of its theoretical and methodological approaches within the context of initial professional training. The analysis of the positions advanced by C. Rogers [53], M. H. Davis [24], M. Hoffman [34], M. Hojat [35], S. A. Batt-Rawden [8], R. F. Baugh [9], and G. McNally [43] highlights the non-uniform use of the terms empathy, medical empathy, and professional empathy, which are variously interpreted as personality traits, skills, or professional competencies that can be developed. The synthesis of these studies allows the identification of common structural elements: cognitive, affective, and behavioral components, centered on the capacity to understand the perspective of others, yet insufficiently integrated into a unified Theoretical model applicable to university training. In the literature, medical empathy is interpreted both as (a) a process, *“understanding the patient’s experience and responding appropriately within the physician-patient relationship”* [35] and as (b) an outcome a *“multidimensional construct integrating cognitive and affective components expressed in professional behavior”* [24]. In the present study, medical empathy is approached from both perspectives, as a foundation for the development of professional competence.

Within the research framework, we employ the term *“professional empathy of medical students,”* which carries the same scientific meaning. The operational concept of the research *“the development of medical empathy”* refers to the process of forming professional competencies through education and training [22], [16], as well as the progressive internalization of empathic behaviors through learning within the *“zone of proximal development”* of professional identity [61]. This process is continuous and systemic, resulting from the convergence of formal, non-formal, and informal educational influences, and involves the coherent design and implementation of teaching methods, tools, and organizational forms aimed at developing empathic conduct in the physician-patient relationship [16].

The present research is guided by the following questions: *What is the scientific essence of medical empathy in the context of initial professional training of medical students? Which evaluation criteria, indicators, descriptors, and values can be applied to assess this dimension in higher education? What pedagogical approaches and didactic technologies are effective in fostering medical empathy?*

The central research problem is the insufficient conceptualization and integration of medical empathy into the curriculum of initial professional training of medical students.

The purpose of the investigation is to conceptualize, scientifically substantiate, and operationalize a theoretical-practical framework for the professional development of medical empathy in medical students.

Research objectives:

1. To determine the scientific foundations of medical empathy;
2. To examine educational policies relevant to the promotion of ME in the initial professional training of medical students;
3. To develop a Theoretical model of medical empathy in terms of values, indicators, and descriptors;
4. To conduct an experimental diagnosis of the levels and specific features of medical empathy in medical students at the beginning of their professional training;
5. To design, implement, and experimentally validate a University didactic technology for the development of professional empathy in medical students;
6. To generate new scientific knowledge related to the development of medical empathy.

Research hypothesis: the development of medical empathy in medical students can become effective if it is grounded in: the definition and conceptualization of medical empathy within the context of initial professional training, in line with the requirements of contemporary medical higher education; the identification of the structure and specific features of its development in the university context; the design of a Theoretical model of medical empathy structured around axiological, cognitive, affective, and medical leadership components, operationalized through indicators, descriptors, values, and specific evaluation criteria; the identification of mechanisms supporting the development of empathy in educational and clinical interactions; the integration of medical empathy into the English language curriculum; and the design, implementation, and experimental validation of a University didactic technology for the development of professional empathy.

The methodology of the Ph.D. research: is grounded in key educational policy documents, including the Education Code of the Republic of Moldova [19] and the European Qualifications Framework [15], which provide the normative and conceptual framework for the research approach.

The theoretical foundations of the study are supported by: the constructivist paradigm (L. Vygotsky [61], A. Bandura [5]) and the dimension of pedagogical communication and didactic discourse [12], which explain the development of socio-emotional competencies through learning and interaction; the humanistic paradigm (C. Rogers [52], D. Goleman [30]), which positions empathy as a central dimension of interpersonal relationships and personality development; cognitive and socio-cognitive approaches (M. H. Davis [25], M. Hoffman [34]), which substantiate the multidimensional structure of empathy; neuropsychological approaches (J. Decety, P. L. Jackson [26]), which explain the neurobiological mechanisms underlying empathic processes; models of medical empathy (M. Hojat [35], N. Mead, P. Bower [46]), which define the role of empathy in the physician-patient relationship; and studies on the dynamics of empathy in medical education (M. Neumann et al. [48]), which inform the diagnostic dimension of the research. The theoretical framework further integrates the theory of emotional culture (M. Cojocaru-Borozan [20], [21]), the model of initial professional training (C. Cucuș [22]), competency-based curriculum design (Vi. Guțu [32]), university didactic technologies (T. Bushnaq [14], O. Golubovschi [31]), and research on the effectiveness of pedagogical interventions in medical education (S. A. Batt-Rawden et al. [8], R. F. Baugh et al. [9], G. McNally et al. [43]), which support the integration of empathy as a professional competence within higher medical education.

The synthesis and justification of the research methodology: *theoretical methods*-scientific documentation, analysis, and pedagogical modeling; *analytical-synthetic methods*-interpretation of concepts and models of medical empathy; *experimental methods*-pedagogical experiment, observation, questionnaire, and testing through psychometric instruments (Jefferson Scale of Empathy - JSE), as well as mathematical processing of experimental data.

The scientific novelty and originality of the research consist in: identifying the theoretical foundations of medical empathy within the context of initial professional training; conceptualizing medical empathy as an integrative system of axiological, cognitive, affective, and medical leadership capacities, aligned with the requirements of the medical profession and contemporary higher education; describing the specific features of medical empathy development in medical students; developing and substantiating *the Theoretical model of medical empathy* in the context of patient-centered clinical practice; establishing indicators, descriptors, values, and evaluation

criteria structured according to the components of medical empathy; designing and experimentally validating the *University didactic technology for the development of professional empathy*, integrated into the *English for Specific Purposes Curriculum*; and formulating scientific conclusions and recommendations regarding the development of medical empathy in the process of initial professional training of medical students.

The research results that contribute to the solution of an important scientific problem relate to: the interdisciplinary definition of medical empathy; the development of a theoretical model of medical empathy; the system of indicators, descriptors, values, and evaluation criteria; and the university didactic technology for developing medical empathy in medical students. These theoretical and practical contributions have supported the optimization of initial professional training in medical education.

The theoretical significance of the research derives from the interdisciplinary conceptualization of medical empathy and the clarification of its scientific content at both structural and functional levels; the interpretation of the components of the Theoretical model of medical empathy, structured around medical axiology, cognitive, affective, and leadership dimensions; the theoretical substantiation and description of its indicators, descriptors, and values; and the formulation of evaluation criteria for medical empathy in the context of initial professional training.

The praxiological value of the research consists in establishing a research methodology for medical empathy in medical students; diagnosing the levels and specific features of medical empathy in the university context; applying indicators, descriptors, values, and evaluation criteria within the university teaching process; implementing the university didactic technology through the integration of the “Medical Empathy” module into the English for Specific Purposes course; and formulating methodological conclusions and recommendations for integrating medical empathy into patient-centered education and the development of socio-emotional competencies in higher medical education.

The implementation of scientific results was carried out through both theoretical and experimental research conducted at the “Nicolae Testemițanu” State University of Medicine and Pharmacy, with the participation of first-year medical students.

The validation of the results was achieved through presentations at national and international scientific conferences, publications in peer-

reviewed journals, and the dissemination of findings within the scientific seminars of the Department of Modern Languages.

Ph.D. - related publications: 16 scientific works, including: one university textbook [63], four articles published in scientific journals [64; 65; 66; 67], nine papers presented in international conference proceedings [68; 69; 70; 71; 72; 73; 74; 75; 76], and two articles published in international conference proceedings in the Republic of Moldova [77; 78].

The volume and structure of the thesis includes annotations in Romanian and English, list of abbreviations, introduction, 3 chapters, general conclusions and recommendations, 157 pages of basic text, 307 bibliographic sources, 17 tables, 21 figures, and 11 annexes

Keywords: empathy, medical empathy, emotional culture, university didactic technologies, medical students, initial professional training, higher medical education.

THESIS CONTENT

The Introduction presents the scientific arguments regarding the relevance of the topic and the significance of the research problem; describes the state of the art in the research field by highlighting the most significant studies and reference authors; elucidates the social conditions that generate the research problem; outlines the aim and objectives of the study, the research methodology, the implementation and validation of the research results, as well as the volume and structure of the thesis.

Chapter 1. "Theoretical Foundations of Professional Empathy in Medical Students" presents a wide range of definitions of the fundamental and related concepts, drawing on various theoretical perspectives approached from philosophical, psychological, sociological, and pedagogical viewpoints. It develops an analysis of the evolution of the concept of empathy, from classical approaches (Th. Lipps [42], E. Titchener [59]) to contemporary conceptualizations of empathy as a multidimensional structure and a professional competence (M. H. Davis [25], M. Hojat [35;36]).

The chapter highlights the structural contents and defining characteristics of professional empathy in the context of initial professional training; reflects scholars' positions on the scientific essence of empathy within humanistic, cognitivist, socio-cognitive, and neuropsychological approaches; and examines the issue of professional empathy through conceptual positions stipulated in educational policy documents, reflected at the normative level but still insufficiently implemented in educational

practice. This constitutes a methodological problem for university curriculum design, where the socio-emotional dimension remains insufficiently integrated into training activities [19]. From this perspective, the major purpose of medical education is brought into focus, understood both as an objective one ensuring the development of the professional competencies of future specialists and as a subjective one, aimed at cultivating their capacity to understand and value the human dimension of the physician-patient relationship.

The synthesis of the scholarly literature from a philosophical perspective (E. Stein [apud 65]) interprets empathy as a foundation of human relationships; from a sociological perspective (N. Mead [46]), as a mechanism of social interaction; from a psychological perspective (C. Rogers [53], M. H. Davis [24], M. Hoffman [34], N. Eisenberg [27], J. Decety, P. L. Jackson [26], A. Bandura [5], A. Glavan [29], L. Vygotsky [61], etc.), it highlights the cognitive and affective mechanisms of empathy and its role in personality development; and from the perspective of medical education (M. Hojat [35], M. Neumann et al. [48], S. A. Batt-Rawden et al. [8], R. F. Baugh et al. [9], G. McNally et al. [43], S. W. Mercer, W. J. Reynolds [47]), professional empathy is approached as a dimension of the physician-patient relationship and as a competence amenable to development.

From a pedagogical perspective, authors of particular relevance to the present field of research (M. Cojocaru-Borozan [12], [20], [21], C. Cucos [22], Vl. Guțu [32], Al. Barbăneagră [6], M. Șevciuc [57], T. Bushnaq [14], T. Kononova [39], S. Chițu [18], O. Golubovschi [31], D. Antoci [2], V. Buzenco [13], etc.) examine the development of empathy as an outcome of educational action directed toward the formation of socio-emotional and professional competencies integrated into the university curriculum.

The analysis of these scholarly positions highlights the multidimensional nature of professional empathy and the diversity of its interpretations-as a process, a trait, a competence, or a form of behavior-structured through the interaction of cognitive, affective, and behavioral components, and reveals its role in the physician-patient relationship and in medical professionalism. Related concepts are clearly delineated, and the risks associated with the manifestation of empathy in medical practice are brought into focus (M. Neumann et al. [48]). Within the framework of the pedagogy of emotional culture, “*empathy is interpreted as a dimension of socio-emotional development and affective self-regulation*” [20]. Against the background of national and international scholarship, theoretical

uncertainties, fragmented approaches to empathy, and its insufficient pedagogical conceptualization and educational use in the initial professional training of medical students have been identified.

Chapter 2. "The University Context of Developing Medical Empathy" presents a systemic analysis of the factors determining the development of medical empathy in medical students, in correlation with the theoretical benchmarks outlined in Chapter 1 and the specific features of initial professional training in higher medical education. It highlights the convergent influence of *social and educational policy factors* [15; 62], *pedagogical factors* (M. Cojocaru-Borozan [20]), *psychological factors* (M. Hojat [37], M. Neumann et al. [48], T. Şova [58]), and *experiential factors* (D. Kolb [40], Lin et al. [41]) on the development of empathic competencies. The chapter examines the role of both the formal curriculum and the hidden curriculum in shaping professional attitudes and empathic behaviors, and explains the mechanisms underlying the development of empathy within educational interactions and experiential learning contexts.

The analysis of scholarly positions and contextual conditions of initial professional training reveals the complex, dynamic, and insufficiently harnessed nature of medical empathy development in the university environment, shaped by fragmented approaches and the limited integration of the socio-emotional dimension into the educational process. The study of university-level didactic strategies for multilingual education (Al. Barbăneagră [6]) and of approaches to developing language competencies through multimodal texts (T. Kononova [39]) provides valuable methodological reference points for designing the educational process aimed at integrating medical empathy into language-related disciplines. From the perspective of university-level professional training, research on the theory of professional competencies (M. Şevciuc [57]) and on the psychological dimensions of quality of life and academic development (A. Glavan [29]) contributes to understanding the context in which empathic behavior in medical students is formed, highlighting the interaction of personal, educational, and contextual factors. The professional attitudes of medical students and the conditions for their development are examined, emphasizing the need for a systemic approach to medical empathy, aligned with contemporary trends in educational innovation [70].

Therefore, *we define the professional empathy of medical students*, also referred to as medical empathy, as a competence that reflects medical professionalism, manifested through the capacities associated with medical

ethics: the ability to be aware of and understand ethical norms, to comprehend patients while demonstrating tolerance and adaptability (cognitive component); the ability to show compassion, demonstrate resilience to stress, provide emotional support, and appropriately resonate with patients' emotional experiences through sensitivity (affective component); the ability to act in accordance with the core values of medical practice-respect for values, dignity, autonomy, and professional integrity (axiological component); and the capacity to collaborate and responsibly prioritize patients' needs in making clinical and innovative decisions that positively influence patients' emotional well-being and ensure the quality of medical care (medical leadership component), within a context shaped by organizational culture.

Based on the theoretical analysis and experimental research, a *Theoretical model of medical empathy* was developed and substantiated, structured around four components: medical axiology, cognitive, affective, and medical leadership which reflect the integrative nature of empathic competence and its relationship with the requirements of the medical profession (Fig. 1).

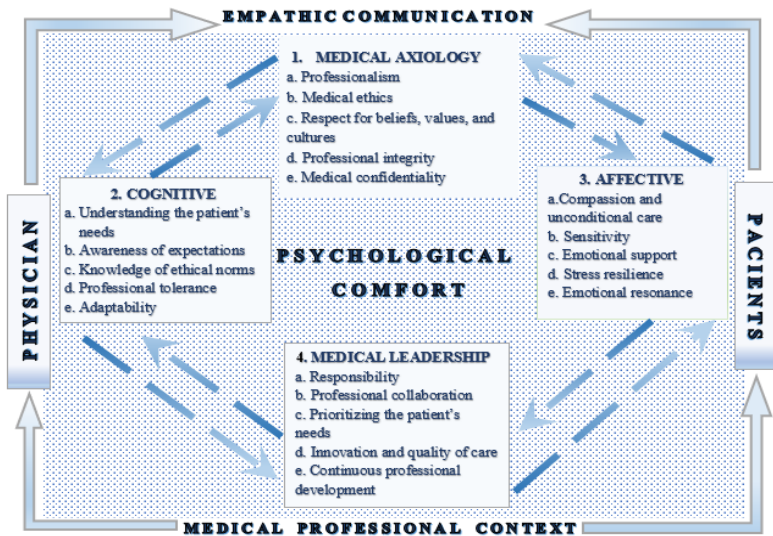


Figure 1. The Theoretical Model of Medical Empathy
(Oala V., 2025) [66]

The indicators of medical empathy reflect the defining features of empathic competence, structured in accordance with the components of the theoretical model and operationalized through descriptors and professional values, thus providing reference points for its assessment and enabling the evaluation of the level of development of empathic behaviors in medical students (Tab. 1). By their systemic nature, these indicators allow the correlation of the theoretical dimensions of empathy with its observable manifestations in educational contexts. Structured along axiological, cognitive, affective, and medical leadership dimensions, the indicators do not capture isolated states, but rather trajectories of professional development, which makes them compatible with the logic of continuous formative assessment and with the requirements for transferring empathic competence from the university environment into clinical practice.

Table 1. Indicators, Descriptors, and Values of the Axiological Component of ME

Com- ponent	Indicators	Descriptors	Values
Medical Axiology	Internaliza- tion of professional values	Demonstrates consistent respect for the patient through behaviors aligned with professional values; shows moral responsibility in medical practice	Profes- sionalism
	Adherence to ethical principles	Applies medical ethics principles in concrete situations; respects deontological norms and makes ethical decisions in the physician-patient relationship	Medical ethics
	Intercultural sensitivity	Values cultural and religious diversity in the physician-patient relationship; adapts professional behavior while avoiding cultural stereotypes	Respect for values and cultures
	Moral coherence in action	Maintains consistency between values and behaviors; acts with integrity in accordance with professional principles, including in challenging situations	Profes- sional integrity
	Respect for confidentia- lity norms	Respects patient confidentiality in medical communication; manages sensitive data responsibly and ethically	Medical confidentia- lity

The evaluation criteria specific to each component reflect the level of manifestation of medical empathy and guide the monitoring of formative progress. The evaluation criteria for the *axiological component* of medical empathy include: (a) the value-based orientation of professional conduct and (b) adherence to ethical principles and deontological norms. The scientific interpretation of the development of medical empathy has been made possible through the configuration of its indicators, descriptors, and values (Tab. 2).

Table 2. Indicators, Descriptors, and Values of the Cognitive Component of ME

Component	Indicators	Descriptors	Values
Cognitive	Perspective-taking ability	Understands the patient's perspective within their personal context; accurately interprets the information provided by the patient	Understanding the patient's perspective
	Anticipation of patient needs	Identifies and interprets the patient's expectations and needs; adapts interventions according to the patient's context	Awareness of expectations
	Integration of ethical norms	Applies ethical norms and principles in medical communication; correlates theoretical knowledge with professional situations in decision-making	Knowledge of ethical norms
	Cognitive openness	Demonstrates tolerance toward differences and diverse perspectives; adjusts judgments according to context	Professional tolerance
	Communication flexibility	Adapts language and behavior to the patient's context; uses a range of communication strategies depending on the situation	Adaptability

The evaluation criteria for the *cognitive component* of medical empathy refer to: (a) the ability to understand the patient's perspective, (b) awareness of the patient's needs and expectations, and (c) cognitive adaptability in medical communication.

The level of development of the affective component of medical empathy was assessed through the following indicators: empathic availability, emotional sensitivity, capacity for emotional support, emotional resonance, and emotional self-regulation (Tab. 3).

Table 3. Indicators, Descriptors, and Values of the Affective Component of ME

Component	Indicators	Descriptors	Values
Affective	Empathic availability	Demonstrates genuine care for the patient; shows interest in the patient's condition; engages emotionally in an appropriate manner within the relationship	Compassion and unconditional care
	Emotional sensitivity	Identifies the patient's emotions and responds appropriately; reacts empathetically to the patient's emotional states	Sensitivity
	Capacity for emotional support	Provides appropriate emotional support in difficult situations; encourages the patient and fosters a climate of trust	Emotional support
	Controlled emotional resonance	Resonates with the patient's emotions while maintaining professional control; preserves professional boundaries	Emotional resonance
	Emotional self-regulation	Regulates own emotional responses; manages professional stress	Stress resilience

The premises for the development of medical leadership (Tab. 4) are grounded in the affective domain, reflecting the depth and quality of the practitioner's emotional engagement in the therapeutic relationship. The evaluation criteria for the *affective component* of medical empathy refer to: (a) the capacity for controlled emotional resonance, (b) the provision of appropriate emotional support, and (c) the self-regulation of affective responses in clinical situations, as core conditions for ethical and sustainable professional practice.

Table 4. Indicators, Descriptors, and Values of the Medical Leadership Component of ME

Component	Indicators	Descriptors	Values
Medical Leadership	Assumption of professional responsibility	Takes responsibility for decisions and actions in the physician-patient relationship; demonstrates accountability for the consequences of actions	Responsibility
	Capacity for collaboration	Collaborates effectively within an interdisciplinary team; communicates efficiently and contributes to team cohesion	Professional collaboration
	Patient-centered orientation	Places the patient at the center of medical decision-making; prioritizes patient needs and respects patient autonomy	Prioritization of patient needs
	Continuous professional initiative	Identifies opportunities and proposes solutions to improve medical practice; applies innovative approaches to enhance quality of care	Innovation and quality of care
	Professional self-improvement	Demonstrates commitment to continuous professional development; engages in ongoing training and reflects on personal practice	Continuous professional development

The evaluation criteria for the *medical leadership component* of medical empathy refer to: (a) the assumption of professional responsibility in the physician-patient relationship, (b) the capacity for interdisciplinary collaboration, and (c) orientation toward the quality of medical practice and continuous professional development.

The set of analyzed elements outlines the conceptual framework of the university didactic technology for the development of ME.

Chapter 3. "The Experimental Approach to Developing Medical Empathy in Medical Students" developed and conducted on the basis of the theoretical and conceptual foundations outlined in the previous chapters, aimed at validating the Theoretical model of medical empathy and the University didactic technology for its development. The experimental study

was carried out during the 2022-2023 academic year and focused on evaluating the values of medical empathy among students, in accordance with the classical stages of the pedagogical experiment and in compliance with the principles of research methodology in the social sciences.

In order to determine the initial level of medical empathy, an empirical investigation was organized with the following objectives: (a) to assess the level of development of medical empathy in medical students, and (b) to diagnose vulnerabilities in its formation. The overall research sample consisted of 121 undergraduate students enrolled in the General Medicine program at the “Nicolae Testemițanu” State University of Medicine and Pharmacy (USMF), divided into two groups: an experimental group (68 students) and a control group (53 students).

The experimental research began with the selection of methods and instruments appropriate to the stages of the applied pedagogical experiment, in alignment with the objectives and hypothesis of the study. To assess the level of medical empathy, the Jefferson Scale of Empathy (JSPE-S), developed by M. Hojat [38], was used in an adapted version, aligned with the values of medical empathy and the specific features of the educational context under investigation. The research instrument assessed 20 values of ME, carefully selected from the pedagogical and psychological literature and correlated with the values promoted in current professional standards for the training of medical students. The mean score obtained reflects the overall level of empathy demonstrated by students in relation to the physician-patient interaction, providing a synthetic overview of the empathic predisposition of future medical professionals. Comparing the mean scores between the EG and CG allows for the identification of initial differences between the groups, serving as an essential reference point for grounding and evaluating the subsequent stages of the formative intervention. Accordingly, Fig. 2 illustrates the comparative positioning of both groups with respect to their initial empathy levels at the outset of the research, constituting a benchmark for assessing the impact of the subsequent educational intervention.

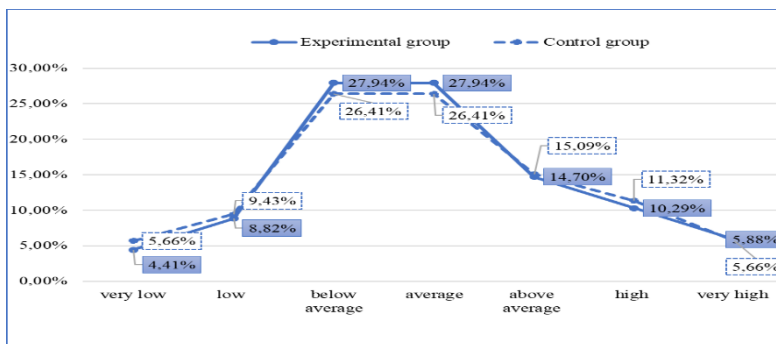


Figure 2. The General Level of Empathy in Medical Students at the Initial Assessment Stage (Self-assessment, Jefferson Scale of Empathy)

Thus, Figure 2 illustrates the comparative positioning of the two groups in relation to empathy levels at the initial stage of the research, serving as a reference point for evaluating the impact of the subsequent educational intervention. The analysis of the data indicates that the majority of students demonstrate an insufficient level of development of medical empathy, which confirms the need for systematic pedagogical intervention. High and very high levels are poorly represented, highlighting the necessity of an educational approach focused on the development of medical empathy. Consistent with interpretations in pedagogical experimental studies, these results provide the foundation for designing the formative intervention. The component-level analysis reveals a predominance of minimum and medium scores, indicating formative gaps that call for a structured pedagogical intervention (Fig. 3).

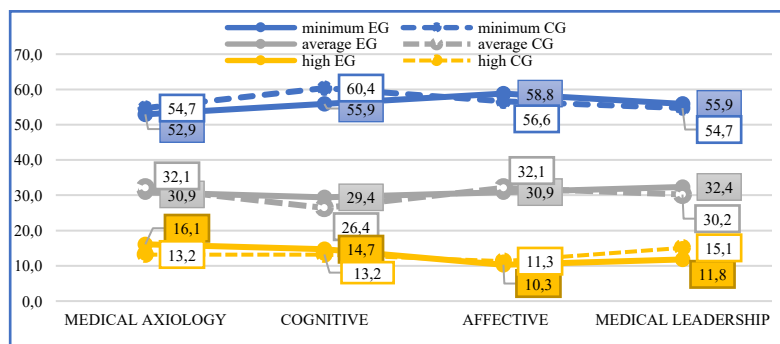


Figure 3. Experimental Values of the Levels of Development of Medical Empathy Components (Initial Assessment: EG / CG)

The results obtained by the medical students demonstrate the need to plan structured activities for the professional development of medical empathy, as the experimental values are predominantly at low and medium levels, with very few students demonstrating high levels of medical empathy. This finding highlights the limited effect of incidental learning and underscores the importance of intentional, curriculum-embedded interventions that explicitly target the development of the empathic dimension of professional identity. Fig. 4 illustrates the conceptual and operational architecture of the *University didactic technology for developing medical empathy*, conceived as an integrative pedagogical system grounded in the interdependence of axiological, cognitive, affective, and medical leadership dimensions. This system aims to develop medical empathy in medical students through the effective use of curricular content, experiential teaching strategies, and formative assessment, in order to foster a patient-centered professional conduct and to support the internalization of empathetic values in clinical practice.

The University didactic technology for developing medical empathy is designed as an integrated pedagogical system that aligns learning outcomes, curricular content, teaching-learning-assessment strategies, and forms of instructional organization within a coherent framework oriented toward predictable and measurable results [30], [13]. In this sense, didactic technology goes beyond the isolated use of methods and techniques, constituting a systemic model for organizing the process of professional training, oriented toward the coherent alignment of objectives, content, learning experiences, and assessment practices in the development of medical empathy (C. Cucoş [22]). In the context of higher medical education, empathy, as a complex professional dimension, cannot be developed through spontaneous or occasional interventions, but requires a deliberately designed didactic technology that integrates values, content, experiential strategies, reflection, and formative assessment (M. Cojocaru-Borozan [20], [21]).

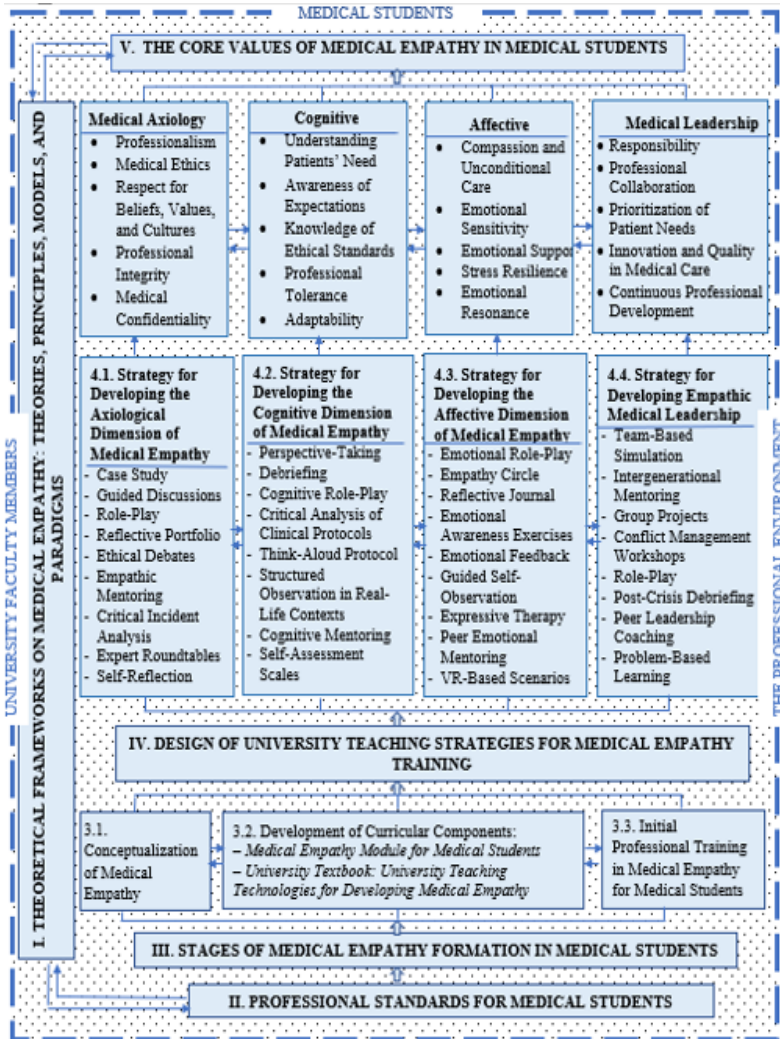


Figure 4. The University Didactic Technology for the Development of Professional Empathy (Oala V., 2025) [67]

Therefore, the university didactic technology developed in this research represents the pedagogical mechanism through which the theoretical model of medical empathy is translated into university educational practice, ensuring a coherent, progressive, and assessable formative pathway.

The structure of the university didactic technology presented in Figure 4 and includes the following functional components: *The theoretical foundations of medical empathy* underpin the University didactic technology through the integration of contributions from humanistic psychology (C. Rogers [53], D. Goleman [30]), cognitive and socio-cognitive theories of empathy (M. H. Davis [24], M. Hoffman [34]), cognitive neuroscience (J. Decety, P. L. Jackson [26]), and the pedagogy of emotional culture (M. Cojocaru-Borozan [20], [21]). These paradigms provide the epistemological basis for the formative nature of empathy and guide the design of didactic strategies toward the actual mechanisms underlying the development of empathic competence.

The professional standards of medical students define the value-based and normative framework of training, orienting the development of empathic competencies toward professional responsibility, medical ethics, patient-centered communication, and the quality of medical care [28], [60]. *The stages of medical empathy development* describe the processual and gradual nature of its formation, structured into three interdependent stages: (3.1) conceptualization of ME, ensuring theoretical grounding and clarification of cognitive and axiological content; (3.2) development of curricular components, including the *Medical Empathy* module and the university textbook *University Didactic Technologies for the Development of Professional Empathy*, aimed at operationalizing concepts and integrating them into structured learning activities; and (3.3) initial professional development of ME in medical students, achieved through the application of didactic strategies and the practice of empathic behaviors in simulated and real contexts (O. Golubovschi [31], C. Cucoş [22]). This staged structure ensures continuity between the conceptual, curricular, and applied levels, facilitating the transition from theoretical understanding to the internalization and manifestation of empathic behavior in medical practice.

The design of university didactic strategies represents the operational core of the technology, organized according to the components of medical empathy: axiological, cognitive, affective, and medical leadership, developed through specific methods such as case studies, clinical simulations, role-playing, guided reflection, and leadership activities (Al. Barbăneagră [6], T. Bushnaq [14]). The instructional approach draws on the principles of experiential learning (D. Kolb [40]) and the integration of modern

educational technologies, including simulations and digital tools (Lin et al. [41]), in order to foster empathic competencies. The development of empathy is achieved through its integration into medical communication activities in English, supporting the development of professional communication competence (A. Sîrghi, M. Şevciuc [57]) as well as linguistic (T. Kononova [39]), relational, and reflective competencies in medical students.

The values of medical empathy developed in students represent the outcome of the formative process, reflected in the development of patient-centered professional conduct characterized by responsibility, emotional sensitivity, understanding of the patient's perspective, and teamwork skills. These values indicate the level of internalization of value orientations and are manifested in professional behaviors adapted to clinical contexts, in alignment with the theory of value orientations (D. Antoci [2]) and the pedagogy of emotional culture (M. Borozan [20]). In this sense, the development of medical empathy extends beyond cognitive acquisition, involving the restructuring of attitudes and the consolidation of the relational dimension of medical professionalism.

The university teaching staff and the professional environment frame the entire architecture of the technology, highlighting the dual nature of training-simultaneously academic and practice-oriented. This alignment supports continuity between learning and application, ensuring the transfer of empathic values and competencies into real physician-patient interactions. Consequently, the technology acquires a transferable and functional character, facilitating the integration of empathic behaviors into professional activity (A. Sîrghi, M. Şevciuc [57], T. Kononova [39]).

The methodological pathway for implementing the technology was designed in accordance with the specific features of initial professional training and the requirements of the medical university curriculum, facilitating the integration of empathy into medical communication activities in English through experiential methods and simulated clinical situations. These approaches enable the simultaneous development of linguistic, relational, and reflective competencies in medical students (Tab. 5). The organization of the process ensures a transition from conceptualization to application and internalization, supporting the transformation of empathy into an assessable professional competence. The innovative character of the technology lies in the integration of medical empathy into the teaching of English for Specific Purposes (ESP)

and in the inclusion of the medical leadership component as a dimension of professional empathy, thereby extending existing models in the specialized literature.

Table 5. Methodological Pathway for Integrating the “Medical Empathy” Module into University Courses for Medical Students

Module	Content Units	Developed Behaviors	No. of Hours	
			CD	SI
<i>Program de licență</i>				
Medical Empathy	Introductory concepts of medical empathy	<ul style="list-style-type: none"> - Defines medical empathy as a professional construct - Distinguishes empathy from related concepts (sympathy, compassion) - Explains the role of empathy in the physician-patient relationship - Analyzes the impact of empathy on the quality of medical care - Provides examples of relevant clinical situations 	2	6
	The concept of ME in medical students	<ul style="list-style-type: none"> - Operationalizes medical empathy in clinical contexts - Differentiates empathy from related constructs - Identifies the components of empathy - Analyzes its manifestations in clinical interactions - Integrates the patient’s perspective into decision-making - Demonstrates empathic behavior in communication 	2	6
	Emotional culture as foundation for the development of ME	<ul style="list-style-type: none"> - Analyzes the dimensions of empathy (axiological, cognitive, affective, leadership) - Relates emotional culture to professional behavior - Identifies emotional responses in clinical contexts - Applies self-regulation strategies - Demonstrates openness to emotional development 	2	6
	Methods of Research and Development of Medical Empathy	<ul style="list-style-type: none"> - Identifies didactic technologies used in medical professional training - Analyzes the formative potential of experiential methods - Applies tools for the assessment of medical empathy - Correlates teaching strategies with the objectives of empathy development - Designs activities focused on empathic professional conduct 	2	6
Total hours			20	10
			30	

Experimental results on the dynamics of medical empathy development in medical students (control stage)

The pedagogical experiment at the validation stage of the Technology involved 68 medical students in the EG and 53 students in the CG (Fig. 5). The praxiological approach to the context of initial professional training of medical students provides the basis for a contemporary understanding of empathy as a functional mechanism of interpersonal connection within professional communication.

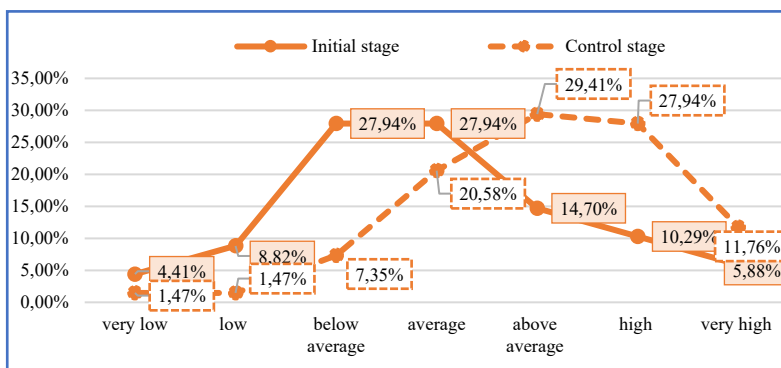


Figure 5. The General Level of Empathy in Medical Students Assessed by the Jefferson Scale of Empathy (Self-assessment, EG, Comparative Design: Initial/Control Stage)

The comparative analysis of the overall level of empathy, assessed using the Jefferson Scale in the experimental group (Fig. 5), reveals a shift in distribution from below-average and average levels predominant at the initial stage, toward above-average and high levels at the control stage. A decrease in the proportion of lower levels and a significant increase in higher levels are observed, indicating a positive development of empathy and confirming the effectiveness of the formative intervention. The alignment of training activities with professional standards and the values of emotional culture contributes to the humanization of medical practice and to the strengthening of the physician-patient relationship, creating a professional environment in which clinical competence and empathic responsiveness are mutually reinforcing. The results highlight an increase in empathy within the experimental group, confirming the positive impact of the educational intervention on relational competencies. The experimental data presented in Fig. 3.6 show that in the EG, a high level of medical empathy was recorded

in 51.47% of the subjects, compared to the CG, where only 32.60% of respondents were assessed as having a high level.

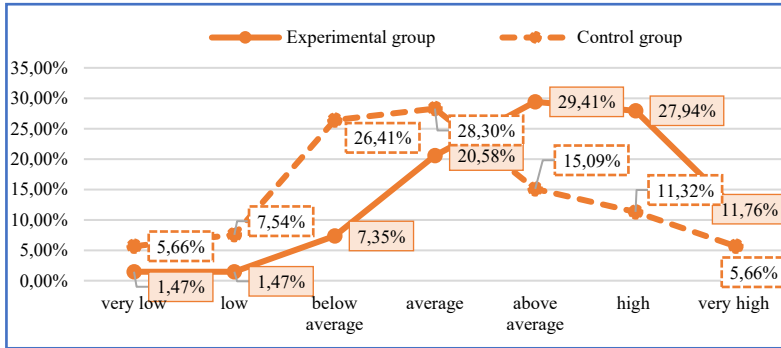


Figure 6. The General Level of Empathy in Medical Students Measured by the Jefferson Scale of Empathy (Control Stage, Comparative Design: EG/CG)

The experimental data presented in Fig. 6 highlight higher levels of medical empathy in the experimental group (51.47%) compared to the control group (32.60%), where no significant progression is observed and lower levels of empathy remain predominant. The results suggest the effectiveness of the formative intervention and indicate that, in its absence, limitations in the development of empathic competencies persist, often associated with affective vulnerabilities. The positive dynamics of the experimental data in the EG reflect the favorable impact of the formative intervention on the development of medical empathy (Fig.7)

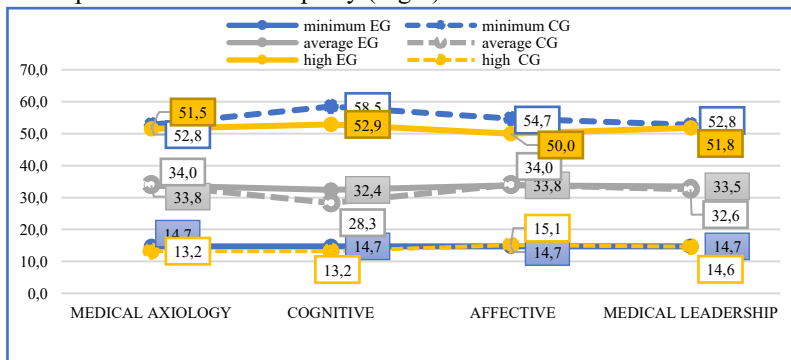


Figure 7. Comparative Experimental Values of the Levels of Development of Medical Empathy Components (Control Stage, EG/CG)

The comparative analysis of the overall level of medical empathy, assessed through self-evaluation using the Jefferson Scale of Empathy in the experimental group, highlights a significant increase in medical empathy values. Figure 8 presents the experimental values for the components of medical empathy, illustrating their development within the experimental group. The data obtained at the control stage demonstrate a consistent increase across all dimensions, confirming the systemic nature of medical empathy development. It can be observed that the pedagogical intervention produces simultaneous effects on all components, thus confirming the impact of the university didactic technology (Fig. 8).

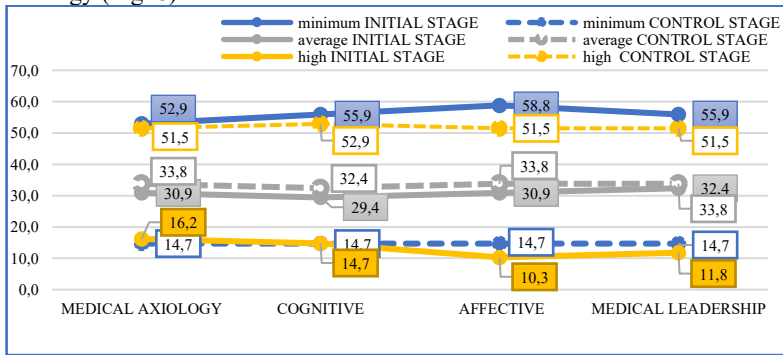


Figure 8. Comparative Experimental Values of the Levels of Development of Medical Empathy Components in Medical Students
(Comparative Design: EG, Initial-Control Stages)

The evolution of the overall levels of medical empathy in the experimental group (Fig. 8) shows a significant increase in the proportion of students with a high level of medical empathy. This dynamic confirms that medical empathy is an educable competence, and that systematic didactic intervention produces meaningful qualitative changes in the professional conduct of medical students. The comparison of results reveals significant improvements compared to the control group, confirming the positive impact of the pedagogical intervention. Students in the experimental group demonstrated the development of empathic competencies through the integration of professional values, understanding of the patient's perspective, and appropriate management of the affective dimension of clinical interaction. At the same time, the evolution of the medical leadership component reflects the strengthening of professional responsibility and interdisciplinary collaboration. The comparative experimental data demonstrate a positive dynamic in medical empathy within the experimental group, confirming the effectiveness of the university didactic technology for developing medical empathy and validating the research hypothesis.

The pedagogical experiment enabled the evaluation and identification of the levels and specific features of medical empathy development, highlighting its multidimensional nature in the context of higher medical education. The implementation of the didactic technology facilitated the development of essential empathic competencies required for effective physician-patient interaction, through the integration of axiological, cognitive, affective, and leadership dimensions into the professional conduct of medical students. Thus, the research objectives were achieved, and the obtained results confirm the research hypothesis and demonstrate the effectiveness of the pedagogical intervention in developing medical empathy.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The research approach aims at the scientific substantiation and praxiological valorization of the development of medical empathy in medical students within the context of initial professional training. While acknowledging the significant contributions of studies in empathy, medical communication, and socio-emotional education, it is evident that the definition, structuring, and evaluation of medical empathy in university training remain affected by theoretical and methodological inconsistencies, resulting from fragmented approaches and the limited integration of the socio-emotional dimension into the medical curriculum. The absence of clear conceptual benchmarks and applicable pedagogical models constitutes a barrier to the systematic development of empathic competencies in future physicians, thereby justifying the need for a unified theoretical and praxiological framework.

The main scientific results of the research are synthesized in the following general conclusions:

1. From a theoretical perspective, **the scientific foundations of medical empathy were established** through the analytical-synthetic examination of psychological, pedagogical, and medical paradigms, highlighting its multidimensional nature. The evolutionary analysis of the concept of empathy in international literature revealed a paradigm shift from empathy as spontaneous affective resonance to empathy as a structured, educable, and assessable professional competence in defined contexts [64], [65]. The study of semantic interferences and interdisciplinary approaches enabled the integration of complementary perspectives, whose synthesis led to an operational definition applicable to the university medical context [63], [71]. Based on these scientific considerations, **We define the professional empathy of medical students, also referred to as medical empathy, as** *“a competence that reflects medical professionalism, manifested through capacities grounded in medical ethics: the ability to recognize and understand ethical norms, to comprehend patients while demonstrating tolerance and adaptability (cognitive component); the ability to show compassion, demonstrate resilience to stress, provide emotional support, and appropriately resonate with patients’ emotional experiences through*

sensitivity (affective component); the ability to act in accordance with the core values of medical practice, such as respect for values, dignity, autonomy, and professional integrity (axiological component); and the capacity to collaborate and responsibly prioritize patients' needs in making clinical and innovative decisions that positively influence patients' emotional well-being and ensure the quality of medical care (medical leadership component), within a context shaped by organizational culture." [66], [63].

2. The research problem, generated by the gap between the theoretical recognition of medical empathy and its insufficient integration into initial professional training [64], [74], as well as by the analysis of theoretical foundations and **experimental results, led to the identification** of: (a) the need to clarify the structure and scientific content of ME as an integrative system of axiological, cognitive, affective, and medical leadership competencies; (b) the absence of a methodological framework for evaluating medical empathy in higher education; (c) the lack of pedagogical models explicitly oriented toward empathy development; and (d) the limited integration of the socio-emotional dimension into the curriculum of initial professional training for medical students [70], [71], [74].

3. The experimental study, conducted using the Jefferson Scale of Empathy (JSPE-S), adapted to the specific features of the investigated educational context, **identified the levels and characteristics of medical empathy at the beginning of professional training** [74], [63]. The results revealed the predominance of low and medium levels in both the experimental and control groups, confirming the need for structured educational interventions aimed at developing empathy through the university curriculum in higher medical education [67].

4. Based on interdisciplinary theoretical approaches and the synthesis of experimental findings, **a Theoretical model of medical empathy was developed, structured around four components: medical axiology, cognitive, affective, and medical leadership** [66]. This model reflects the unity of value-based, cognitive, and behavioral dimensions of patient-centered care and operationalizes ME through indicators, descriptors, and evaluation criteria applicable in initial professional training.

5. In response to the identification pedagogical conditions necessary for developing medical empathy, **a University didactic technology was designed, implemented, and experimentally validated** [67], conceived as an integrated pedagogical system structured around five interdependent components: theoretical foundations, professional standards, stages of development, didactic strategies, and medical empathy values [75]. The technology was implemented within the curriculum of the ESP course, employing interactive teaching strategies such as case studies, clinical simulations, role-play, guided reflection, medical leadership activities, and continuous formative assessment using the Jefferson Scale [76], [69], [73]. Its innovative character lies in the integration of the medical leadership component as a dimension of professional empathy and in

the use of medical communication in English as a privileged environment for developing empathic competence [63], [67].

6. **Comparative experimental results demonstrated the effectiveness of the pedagogical intervention and the positive dynamics of medical empathy in the experimental group**, confirming the interdependence of its components. These findings demonstrate that medical empathy is an educable competence and experimentally validate the research hypothesis [63], [67].

7. The theoretical and praxiological findings of the research **contributed to the development of new scientific knowledge regarding the formation of professional empathy**, through the conceptualization of the Theoretical model [66], the development and validation of the University didactic technology [67], [63], and the formulation of evaluation criteria, indicators, and descriptors. The major scientific problem addressed consists in the theoretical and praxiological substantiation of a unified pedagogical framework for developing medical empathy in medical students, contributing to the advancement of the theory and methodology of socio-emotional competence development in higher medical education [68], [70], [71], [72], [77], [78].

RECOMMENDATIONS

For policy-makers:

- updating educational policy documents to explicitly integrate medical empathy and socio-emotional competencies as intended outcomes of initial professional training, in alignment with international standards in medical education;
- strengthening medical training standards by including medical empathy and medical leadership as core professional competencies of medical students.

For educational stakeholders:

- revising the medical university curriculum by integrating content specifically aimed at the development of medical empathy;
- developing curricular resources that promote medical empathy as a transversal outcome of professional training;
- implementing the university didactic technology for development of medical empathy within relevant disciplines, with an emphasis on experiential teaching strategies such as clinical simulations, case studies, role-play, guided reflection, and medical leadership activities;
- leveraging university subjects (e.g., English for Specific Purposes) as a key environment for developing empathic and communicative competence in medical students;
- continuously aligning university educational practices with international trends in medical empathy development.

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ADNOTARE
OALA Viorica

“Tehnologii didactice universitare de formare a empatiei profesionale a studenților mediciniști”, Chișinău, 2026

Structura tezei include: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 337 de surse, adnotare (română, engleză), concepte-cheie în limbile română și engleză, lista abrevierilor, 150 pagini de text de bază, 17 de tabele, 20 figuri, 11 anexe.

Publicații la tema tezei: 14 lucrări științifice.

Concepte-cheie: empatie, empatie profesională, cultură emoțională, tehnologii didactice universitare, studenți mediciniști, formare profesională inițială, învățământ superior medical.

Domeniul de studiu: Teoria generală a educației

Scopul investigației constă în conceptualizarea, fundamentarea științifică și valorificarea praxiologică a unei viziuni teoretico-practice asupra formării profesionale a empatiei medicale la studenții mediciniști.

Obiectivele cercetării vizează determinarea fundamentelor științifice ale empatiei medicale; studiul politicilor educaționale relevante promovării EM în formarea profesională inițială a studenților mediciniști; conceptualizarea științifică a Modelului teoretic al EM în termeni de valori, indicatori și descriptori; diagnosticarea experimentală a nivelurilor și descrierea specificului EM a studenților mediciniști la debutul formării profesionale; elaborarea, implementarea și validarea experimentală a Tehnologiei didactice universitare de formare a EM la studenții mediciniști; edificarea unor noi cunoștințe științifice specifice dezvoltării EM.

Noutatea și originalitatea științifică a cercetării constă în: determinarea fundamentelor teoretice privind EM în contextul formării profesionale inițiale; conceptualizarea empatiei medicale ca sistem integrativ de capacități axiologice, cognitive, afective și de leadership medical, elaborate în acord cu cerințele profesiei medicale și ale educației universitare contemporane; descrierea specificului formării EM la studenții mediciniști; elaborarea și fundamentarea *Modelului teoretic al empatiei medicale* în contextul exigențelor practicii clinice centrate pe pacienți; stabilirea indicatorilor, descriptorilor, valorilor și a criteriilor de evaluare a empatiei medicale, structurate în baza componentelor empatiei medicale; elaborarea și validarea experimentală a *Tehnologiei didactice universitare de formare a empatiei medicale*, integrată în curriculumul disciplinei *Limba engleză*; formularea concluziilor și recomandărilor științifice privind formarea EM în procesul de formare profesională inițială a studenților mediciniști.

Rezultatul obținut care contribuie la soluționarea unei probleme științifice importante vizează: definirea empatiei medicale din perspectivă interdisciplinară, Modelul teoretic al empatiei medicale, indicatorii, descriptorii, valorile și criteriile de evaluare a EM și Tehnologia didactică universitară de formare a empatiei medicale la studenții mediciniști, valori teoretico-praxiologice care au contribuit la optimizarea formării profesionale inițiale a studenților mediciniști în învățământul medical.

Semnificația teoretică a cercetării rezultă din conceptualizarea empatiei medicale din perspectivă interdisciplinară și clarificarea conținutului științific al acesteia la nivel de structură și conținut; interpretarea elementelor Modelului teoretic al EM, structurat în componentele: axiologie medicală, cognitivă, afectivă și leadership medical; argumentarea teoretică și descrierea indicatorilor, descriptorilor și valorilor EM; formularea criteriilor de evaluare a EM în contextul formării profesionale inițiale.

Valoarea aplicativă a cercetării constă în: determinarea metodologiei de cercetare a empatiei medicale la studenții mediciniști; diagnosticarea nivelurilor și a specificului empatiei medicale în context universitar; aplicarea în procesul didactic universitar a indicatorilor, descriptorilor, valorilor și criteriilor de evaluare a EM; implementarea în practica universitară a Tehnologiei didactice universitare de formare a empatiei medicale prin integrarea modului „Empatia medicală” în cadrul disciplinei *Limba engleză*; formularea concluziilor și recomandărilor metodologice pentru integrarea EM în paradigma educației centrate pe pacienți și a formării competențelor socioemoționale în învățământul superior.

Implementarea rezultatelor științifice s-a realizat prin cercetări teoretice și experimentale, desfășurate în cadrul Universității de Stat de Medicină și Farmacie „Nicolae Testemițanu”, cu participarea studenților mediciniști din anul I.

ANNOTATION

OALA Viorica

“University Didactic Technologies for Developing the Professional Empathy of Medical Students”, Chişinău, 2026

Thesis structure includes introduction, three chapters, general conclusions and recommendations, a bibliography of 337 sources, annotation in Romanian and English, key concepts in Romanian and English, a list of abbreviations, 150 pages of basic text, 17 tables, 20 figures and 11 annexes.

Publications on the research topic: 14 scientific papers.

Key-concepts: empathy, medical empathy, emotional culture, university didactic technologies, medical students, initial professional training, higher medical education.

Field of study: General Theory of Education

The purpose of the research consists of the conceptualization and experimental validation of the University didactic technology for developing empathy in medical students.

Research objectives are aimed at: to determine the scientific foundations of ME; to examine educational policies relevant to promoting ME in the initial professional training of medical students; to develop a scientific conceptualization of the Theoretical model of ME in terms of values, indicators, and descriptors; to conduct an experimental diagnosis of the levels and specific features of ME in medical students at the beginning of their professional training; to design, implement, and experimentally validate a university didactic technology for the development of professional empathy in medical students; to generate new scientific knowledge related to the development of ME.

The scientific novelty and originality consist in: determining the theoretical foundations of ME within the context of initial professional training; conceptualizing ME as an integrative system of axiological, cognitive, affective, and medical leadership capacities, aligned with the requirements of the medical profession and contemporary higher education; describing the specific features of medical empathy formation in medical students; developing and substantiating the Theoretical model of ME in relation to patient-centered clinical practice; establishing indicators, descriptors, values, and evaluation criteria structured according to the components of ME; designing and experimentally validating a University didactic technology for the development of professional empathy, integrated into the curriculum of English for Specific Purposes; and formulating scientific conclusions and recommendations regarding the development of medical empathy in initial professional training.

The results that contribute to the solution of an important scientific problem, include: the interdisciplinary definition of ME; the Theoretical model of ME; the system of indicators, descriptors, values, and evaluation criteria; and the University didactic technology for developing professional empathy in medical students-elements that have contributed to optimizing their initial professional training in medical education.

The theoretical significance of the research results from the interdisciplinary conceptualization of medical empathy and the clarification of its scientific content at the structural and functional levels; the interpretation of the components of the theoretical model (medical axiology, cognitive, affective, and leadership dimensions); the Theoretical substantiation of indicators, descriptors, and values; and the formulation of evaluation criteria for ME in the context of initial professional training.

The praxiological value of research consists in: establishing a research methodology for medical empathy in medical students; diagnosing the levels and specific features of medical empathy in the university context; applying indicators, descriptors, values, and evaluation criteria within the teaching process; implementing the University didactic technology through the integration of the “Medical Empathy” module into the English for Specific Purposes course; and formulating methodological recommendations for integrating medical empathy into patient-centered education and socio-emotional competence development in higher medical education.

The scientific results have been implemented through theoretical and experimental research conducted at the “Nicolae Testemiţanu” State University of Medicine and Pharmacy, with the participation of first-year medical students.

OALA VIORICA

**“University Didactic Technologies
for the Development of Professional Empathy
in Medical Students”**

Specialty 531.01 – General Theory of Education

**SUMMARY of the
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