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Contemporary Approaches to Fostering Deontological Culture and Professional Ethics in Future Doctors

Levchyk Olena Ivanivna

PhD (Medicine), Assistant Professor of the Department of Therapeutics and Family Medicine, Faculty of Postgraduate Education, I. Horbachevsky Ternopil National Medical University of the Ministry of Health of Ukraine, Ternopil, Ukraine

E-mail – levchykoi@tdmu.edu.ua
<https://orcid.org/0000-0001-8398-492X>

Savchenko Iryna Petrivna

PhD (Medicine), Associate Professor, Associate Professor of the Department of Internal Medicine No. 1, I. Horbachevsky Ternopil National Medical University, Ministry of Health of Ukraine, Ternopil, Ukraine,

E-mail - savchenkoip@tdmu.edu.ua
<https://orcid.org/0000-0002-9687-1219>

Hoshchynskyi Pavlo Volodymyrovych

PhD (Medicine), Associate Professor, Associate Professor of the Department of Children Diseases and Pediatric Surgery, I. Horbachevsky Ternopil National Medical University, Ministry of Health of Ukraine, Ternopil, Ukraine,

E-mail – hoshchynsky@tdmu.edu.ua
<https://orcid.org/0000-0002-5849-0335>

Stakhurska Iryna Olehivna

PhD (Biology), Associate Professor, Associate Professor of the Department of Department of Microbiology, Virology, and Immunology I. Horbachevsky Ternopil National Medical University of the Ministry of Health of Ukraine, Ternopil, Ukraine

E-mail – stakhurskaio@tdmu.edu.ua
<https://orcid.org/0000-0001-8639-4263>

Volkov Roman Kostiantynovych

PhD (Medicine), Assistant Professor of the Department of Higher Nursing Education, Patient Care and Clinical Immunology I. Horbachevsky Ternopil National Medical University of the Ministry of Health of Ukraine, Ternopil, Ukraine

E-mail – rk_volkov@tdmu.edu.ua
<https://orcid.org/0000-0002-8341-2195>

Abstract. The development of a culture of professional conduct and ethics among future doctors (which, for the purposes of this study, includes both medical students and junior doctors) is a key aspect of modern medical education and a defining factor in a doctor's professional identity. Deontology in medicine is a set of moral and ethical principles which govern the responsibilities of doctors towards their patients, colleagues and society; these principles include the: principle of respecting the autonomy of the patient, principle of beneficence, principle of non-harm, principle of justice, principle of confidentiality, and

principle of responsibility for the consequences of clinical decisions. A review of the literature has indicated that ethical competence in medical students can be effectively developed by the unification of theoretical knowledge and practical skills in actual clinical situations. The pedagogical methods that are used the most are peer-directed learning, mentoring, reflection, interactive class and clinical internship. Such methods contribute to the formation of the ability to moral thinking, ethical analysis, the development of empathy, critical thinking, as well as professional self-awareness and responsibility. Special focus is given to how the “hidden curriculum” influences students’ professional identity from observing the ways that teachers and clinical mentors act, behave, and interact. Structured educational methods, and the experience of a real clinical setting, contribute to the creation of a systemic deontological culture, to the possibility of making morally justified decisions, to the integration of personal values and professional standards, which are all demonstrated in research. The usefulness of the work consists in the fact that it is possible to use the complex pedagogical strategies to create curricula, which could successfully contribute to the formation of ethical competence and professional culture of future doctors.

Keywords: deontological culture, professional ethics, medical education, mentoring, reflective practices, clinical internships.

Сучасні підходи до формування деонтологічної культури та професійної етики у майбутніх лікарів

Левчик Олена Іванівна

кандидат медичних наук, асистент кафедри терапії і сімейної медицини факультету післядипломної освіти, Тернопільський національний медичний університет імені І. Я. Горбачевського МОЗ України, Тернопіль, Україна

E-mail – levchykoi@tdmu.edu.ua

<https://orcid.org/0000-0001-8398-492X>

Савченко Ірина Петрівна

кандидат медичних наук, доцент, доцент кафедри внутрішньої медицини No1, Тернопільський національний медичний університет імені І. Я. Горбачевського МОЗ України, Тернопіль, Україна,

E-mail - savchenkoip@tdmu.edu.ua

<https://orcid.org/0000-0002-9687-1219>

Гощинський Павло Володимирович

кандидат медичних наук, доцент, доцент кафедри дитячих хвороб з дитячою хірургією, Тернопільський національний медичний університет імені І.Я.

Горбачевського МОЗ України, Тернопіль, Україна,

E-mail - hoschynsky@tdmu.edu.ua

<https://orcid.org/0000-0002-5849-0335>

Стахурська Ірина Олегівна

кандидат біологічних наук, доцент, доцент кафедри мікробіології, вірусології та імунології Тернопільський національний медичний університет імені І. Я.

Горбачевського МОЗ України, Тернопіль, Україна

e-mail – stakhurskaio@tdmu.edu.ua

<https://orcid.org/0000-0001-8639-4263>

Волков Роман Костянтинович

кандидат медичних наук, асистент кафедри вищої медсестринської освіти,
догляду за хворими та клінічної імунології Тернопільський національний медичний
університет імені І. Я. Горбачевського МОЗ України, Тернопіль, Україна

E-mail – rk_volkov@tdmu.edu.ua

<https://orcid.org/0000-0002-8341-2195>

Формування деонтологічної культури та професійної етики у майбутніх лікарів (що в межах цього дослідження охоплює як студентів медичних ЗВО, так і лікарів-інтернів) є важливим аспектом сучасної медичної освіти та визначальним фактором професійної ідентичності лікаря. Деонтологія в медицині охоплює систему моральних і етичних принципів, що регулюють обов'язки медичних працівників у взаємодії з пацієнтами, колегами та суспільством, включаючи повагу до автономії пацієнта, благодійність, принцип невикликання шкоди, справедливість, конфіденційність та відповідальність за наслідки клінічних рішень. Аналіз наукової літератури показав, що ефективний розвиток етичної компетентності у майбутніх лікарів потребує інтеграції теоретичних знань з практичними навичками у реальних клінічних ситуаціях. Основні педагогічні стратегії включають навчання за принципом «peer-directed learning», наставництво, рефлексивні практики, інтерактивні заняття та клінічні стажування. Такі методи сприяють формуванню здатності до морального мислення, етичного аналізу, розвитку емпатії, критичного мислення, а також професійної самосвідомості та відповідальності. Особлива увага приділяється впливу «прихованого навчального плану», який формує професійну ідентичність майбутніх лікарів через спостереження за поведінкою викладачів і клінічних наставників. Дослідження демонструють, що поєднання структурованих навчальних підходів із досвідом у реальному клінічному середовищі сприяє формуванню системної деонтологічної культури, здатності приймати морально обґрунтовані рішення та інтегрувати особисті цінності з професійними стандартами. Практична значущість роботи полягає у можливості використання комплексних педагогічних стратегій для розробки навчальних програм, які ефективно сприяють формуванню етичної компетентності та професійної культури майбутніх лікарів.

Ключові слова: деонтологічна культура, професійна етика, медична освіта, наставництво, рефлексивні практики, клінічні стажування.

Introduction**Topicality of the problem.**

The development of a deontological culture among future medical professionals is an integral part of modern medical education and a defining factor in a physician's professional identity [1]. Deontology in medicine is viewed as a system of moral and ethical principles that govern the duties of healthcare professionals in their interactions with patients, colleagues, and society. These principles include respect for patient autonomy, beneficence, non-maleficence, justice, confidentiality, and accountability for the consequences of decisions made during clinical practice. The development of a deontological culture and professional ethics among medical students is one of the key objectives of modern medical education, as it is during their studies that the foundations for future clinical practice are laid. In the context of this study, the term "medical students" encompasses both undergraduate medical students and interns undergoing postgraduate training. Medical students face professional and ethical dilemmas both during formal courses and in real clinical situations, which highlights the need for a systematic approach to the development of ethical competencies in the educational

process. An analysis of students' professional behaviour shows that formal knowledge does not always translate adequately into practical skills of ethical thinking and action, which necessitates appropriate pedagogical strategies for integrated learning [2, 3, 4, 5]. A deontological culture requires not only knowledge of ethical norms but also the ability to apply them in practice in complex situations of medical care, thereby establishing a standard of professional conduct, the capacity for moral analysis and reflection, and a clear understanding of the profession's ethical requirements [6, 7].

With the advancement of medical education, the concept of medical ethics and professional conduct is becoming increasingly important [8, 9]. Given the rapid changes in the healthcare sector, including the digitization of medical processes, the spread of telemedicine, and increased interdisciplinary collaboration, ethical competence is becoming a critically important part of the foundational training of future physicians. Such transformations require students not only a mechanical mastery of medical knowledge, but also a deep understanding of the ethical imperatives of modern practice, the ability to resolve morally complex situations, to interact with patients and colleagues in the context of a changing clinical reality, and to meet society's high expectations regarding the ethical conduct of healthcare professionals [10, 11, 12].

One of the key factors shaping a culture of professional ethics is the so-called 'hidden curriculum' a set of informal educational influences that arise within the clinical environment and through the modelling of behaviour by lecturers and mentors [13, 14, 15]. This phenomenon has a significant impact on students' professional identity, as they form their own ideas about ethical behaviour not only on the basis of formal courses, but also by observing real-life behavioural models in the medical environment [16, 17].

Medical education focuses not only on formally introducing students to the theoretical foundations of medical ethics, but also on practical training in resolving ethical dilemmas that arise in clinical practice. An analysis of the ethical dilemmas described by students shows that most situations relate to everyday ethical challenges, such as issues of confidentiality, communication with patients, the choice of treatment strategies and the student's role in interdisciplinary teams, which highlights the need for an integrated and contextual approach to ethical education in the clinical setting [18, 19].

The aim of the article: is to review current approaches to fostering a culture of deontology and professional ethics among medical students, as well as to analyse pedagogical strategies that effectively integrate theoretical knowledge with practical skills in ethical reasoning and decision-making in clinical settings.

Methodology. This study employed a systematic review of the international scientific literature from the PubMed, Scopus and Web of Science databases. The search was conducted using the following keywords and combinations thereof: 'medical ethics', 'professional ethics', 'deontological culture', 'medical students', 'peer-directed learning', 'reflective practice', 'clinical ethics education' etc. The analysis included publications describing pedagogical programmes and educational interventions aimed at developing medical students' ethical competence and integrating theoretical knowledge with practical skills in making ethical decisions in a clinical setting.

Selection criteria included publications in English published in peer-reviewed journals; studies with evidence-based assessments of the effectiveness of educational approaches; an emphasis on active pedagogical methods, such as peer-directed learning, reflective practices and mentoring; and the presence of examples of the development of deontological culture and professional ethics. The analysis process involved a critical evaluation of the content of the articles, a comparison of methodological approaches, the identification of current trends in the development of professional ethics, and a synthesis of the findings with a view to identifying effective strategies that could be adapted within the national medical education system.

Results

Ethical competence of medical students should be developed by applying a number of pedagogical strategies that integrate theory and practice [20]. The ability to moral thinking, ethical reflection and professional self-determination is not fully developed in the traditional way of teaching medical ethics. The contemporary educational programs are oriented towards the implementation of active, interactive and contextual learning methods, which allow students to immerse themselves in real situations of ethical dilemmas, stimulate their independent moral assessment and formation of professional values. The main pedagogical techniques used to develop ethical competence in medical students include peer-directed learning, mentoring, reflective practices, interactive classes and clinical internships. All these strategies have a synergistic effect: they not only form the knowledge of ethical principles, but also contribute to the development of the ability to apply them in practice, which is important for the formation of the deontological culture of future doctors.

Peer-directed learning is one of the most popular and promising methodological approaches in contemporary medical education. This is done through interaction between students, where the course participants share knowledge, discuss ethical situations, make presentations and analyse cases together with the facilitators. Peer-directed learning provides students with a safe, deliberative space in which they learn to think morally, and it is an alternative to the hierarchical influence of the teacher on students, which helps to eliminate the restrictions on free discussion of ethical issues and promotes a better understanding of daily ethical issues. Sullivan et al. (2020) report a four-year medical ethics program in which PBL was an integral part, including students' modification of teaching sessions, facilitation of discussions, involvement in ethics juries and capstone projects, and small-group analysis of ethical dilemmas with their peers [21]. In this context, peer discussions and interactions fostered moral and professional attributes, and program participants reported that the peer group discussions were most useful in the practical application of ethics in clinical scenarios. DeFoor M. et al. (2019) explores the use of near-peer facilitated medical ethics training for first-year medical students using case-based discussions [22]. Students' decisions were found to be more correct in ethical situations and they had positive opinions about their professional development. Method is able to develop pedagogical skills in older students and the formation of moral thinking and professional identity in new students simultaneously.

Direct contact with experienced clinicians and educators is an important strategy in the development of ethical competence in medical students, and mentorship plays a crucial role in this process [23]. Mentoring, as it applies to ethics education, involves a more experienced physician or teacher serving as a role model, showing students how to behave, and helping them to discuss moral issues, reflect on their experience and growth. A systematic scoping review of ethical issues in mentoring in internal medicine, family medicine and academic medicine was conducted by Cheong et al. (2020) [24]. A total of 3391 abstracts, 412 full texts and 98 articles were chosen for thematic analysis. Ethical and professional misconduct in mentoring has been shown to be related to inappropriate mentor-mentee matching, inappropriate expectations, inadequate mentor training, superficial codes of conduct, weak supervision, and lack of structured processes. The authors stress the importance of the role of the host organisation in establishing rules, expectations and long-term monitoring of the mentoring process. The findings show that a structured approach, mentor training and continuous monitoring is essential for effective mentoring, which helps mentees and junior doctors to develop their professional and ethical competence. Nimmons et al. (2019) provide a summary of the existing medical student mentoring programs [25]. It examines program goals, design, implementation and evaluation of programs addressing various mentoring formats: clinical, academic, peer, and near-peer mentoring. The authors highlight the importance of mentors on students' professionalism, personal development,

clinical skills, academic and research abilities, and on the participation of underrepresented students in underutilized specialties and increased access.

Reflective practices are pedagogical methods aimed at systematically understanding students' own experiences, emotional reactions and moral choices in clinical and educational situations [26]. They can include: written reflection (journals, essays), group discussions, thematic analysis of their own clinical cases, focus sessions, narrative reflection, Balint groups and other facilitated reflective exercises. Reflection involves not only debriefing about events, but also critical analysis, comparing one's actions with professional norms, ethical principles and future practice. This helps in the productive interpretation of one's own experience, in the development of empathy, emotional sensitivity and self-awareness, which forms the basis of ethical competence and the formation of a deontological culture in future doctors [27]. Leung & Peisah (2023) provides a systematic review of the group reflective practices of medical students and demonstrates their effects on empathy, professionalism and well-being. The findings from a review of 18 studies show that reflective practices are effective in developing students' abilities to relate theory and practice, to be conscious about moral dilemmas, and to build their emotional sensitivity and humanistic competences. Balint groups and other structured reflective practice sessions create a safe space for discussing complex clinical cases, maintain empathy and promote collegiality. The article emphasizes the value of reflective practices for the formation of professional and ethical competence, the development of humanistic values and the integration of these skills into medical education.

Interactive concepts are educational approaches that encourage students to actively engage with the content, solve particular clues, join in discussions, group activities, ethical dilemma simulations, etc. [29]. This format of learning stimulates active learning, critical thinking, joint problem solving and exchange of experience, which is much more effective in mastering ethical concepts with traditional lectures. Friedrich O. et al. (2017) studied that interactive, principled and structured case discussions is a potential approach to fostering moral competence in medical students [30]. They encourage active thinking, responsibility for decision making, the ability to apply various points of view and defend their moral decisions. Such training is an integral part of the formation of ethical competence and deontological culture of future doctors, but, the authors recommend, the results should be confirmed by studies on larger, fully randomized selections of students. Sabre M. The experience of developing and carrying out a formally structured assessment of medical ethics using simulated tools for 80 students is shown in (2022) [31]. All students had simulated patients with whom they interacted and were given structured feedback by a medical ethicist. The results of the analysis of students' reflective essays showed three main categories: "Deeper understanding of ethical topics", "Collaborative thinking and synergy with colleagues" and "Effective feedback from teachers". The article emphasises that the 'simulated patient' scenario provides a safe environment for practising ethical reasoning, making moral decisions and developing other aspects of ethical competence. Also, teamwork and group discussions of clinical cases can help improve students' performance and reduce stress levels during assessment.

Students have direct experience with real patients and real clinical scenarios with ethical dilemmas that occur naturally and often in clinical stages. This context enables the application of theory in practice, the assessment of research findings, patient interaction and collegial interaction, and feedback from teachers. Azim, S. R. and Shamim, M. S. (2020) a systematic review of educational theory used for ethics in medical education [32]. The authors point out that experience in the real world, in a clinical setting, is crucial to the development of students' ethical competence. Learning strategies involved moral case studies, discussions of real-world clinical scenarios, portfolios, role play, and reflective exercises that enable students to put theory into practice, consider ethical issues, consider implications of decisions, and receive feedback from mentors. The article highlights the importance of

reflection and experiential learning as the most effective methods as they enable students to convert real-life clinical situations into learning experiences that foster moral judgment and ethical behavior. Such techniques, along with clinical internships, help to form the professional identity and ethical culture of future physicians, since students directly interact with patients and physicians in a natural clinical setting, where ethical issues emerge naturally.

Deontological culture is not just a collection of knowledge, or the ability to apply mechanical skills of ethical analysis as a medical student. It is a systemic process, which involves deep moral self-awareness, internalization of professional values and internalization of moral competence and ability to reconcile personal values with the professional role of a doctor [18]. Deontological culture is not only the knowledge of what is right, but the conscious realization of the ethical norms of action in real practice, even if not provided in official instructions. This development includes the integration of knowledge, self-reflection, emotional sensitivity, stable moral guidelines, which are developed in the context of the pedagogical environment, in the context of clinical practice and in the context of modeling professional behavior by mentors. This is not just about the student knowing how to solve ethical problems, but about the student developing a moral identity, the capacity to recognise the ethical aspects of complex situations, to manage their reactions in stressful situations, to critically evaluate their actions, to act responsibly in relationships with patients and colleagues, and to see the link between personal values and professional standards. The future doctor is able to keep his or her ethics stable in the face of challenging practice situations where formal rules are not clear and the decision is not obvious. The article by Sarraf-Yazdi et al. (2021) indicates that the professional identity is the basis for the formation of deontological culture in medical students. It comprises knowledge of the physician's role, incorporation of personal values with professional norms, moral self-awareness and the capacity to respond responsibly in actual clinical scenarios [33]. Socialization, mentoring, reflective practices, and interactive clinical tasks help students to establish solid ethical principles, so that they can not only know the rules of ethics, but also follow them.

Patuzzo S. et al. (2018) examined the Italian Code of Medical Deontology (CMD) in a historical, ethical and legal way. The authors stress that the code establishes the ethical and professional duties of physicians, which constitute guidelines of conduct in medical practice [1]. CMD is regarded as a mechanism of self-regulation of the profession and it is a way of embedding the moral principles of medical ethics into rules of action. The authors also point out that compliance with deontological norms helps to build ethical competence, professional culture and moral responsibility of physicians, and the updating of the code should be based on changes in the ethical and legal norms of society. In their work, Jharna Mandal et al. (2016) discussed two methods of ethical decision making in medicine: Deontological and Utilitarian [2]. Deontology puts the emphasis on moral duties and rules, irrespective of the consequences of the action whereas utilitarianism considers actions according to their consequences and maximizes the benefit for the majority. The authors stress that deontological practice in medicine is centered on the patient, based on trust between doctor and patient and is the foundation of the behavior of the medical practitioner. The article also explores the tension between these approaches, such as between individual ethics and the public good when the health care system calls on physicians to act in both, and the need to integrate deontological and utilitarian principles in a harmonious and just manner for medical practice. The authors point out that the deontological approach is linked to empathy, that is, being able to put oneself in the patient's shoes, and to moral self-awareness, whereas the utilitarian approach is more outcome- and resource-oriented. The importance of the deontological principles in the formation of the professional and ethical culture of future doctors is highlighted.

Discussion

Interpretation of results

Analysis shows that the process of building a deontological culture and professional ethics among medical students is dynamic and context-dependent, and is not only shaped by formal curricula, but also by socialization in clinical settings. The use of interactive, peer-mediated and reflective pedagogical approaches allow for the internalization of professional norms and the development of moral sensitivity, critical thinking and decision making. Peer directed learning is especially useful for students to discuss ethical issues in a cooperative way, and promotes a culture of dialogue, shared responsibility and mutual accountability that reflects the interdisciplinary interaction that they will experience in clinical practice. Mentorship is a critical component in the development of students' ethics as it models professional conduct in the moment. Through clinical case studies and guidance, experienced clinicians provide learners with structured guidance, allowing them to witness how ethical principles are applied in complex situations, such as consenting patients or managing conflicting responsibilities among stakeholders. This modeling process perpetuates the congruence between values and expectations for professional roles, helping to cement the development of an ethical professional identity.

When considering both deontological and utilitarian approaches, it is clear that the ethical arguments in health care are complex, multifaceted, and diverse. Reminding patients of their responsibility and of the outcomes they have to consider helps in nuanced decision making, taking into account the needs of the individual patient and of society. Ethical codes, including codes of deontology for the profession, serve as essential points of reference that provide anchors for ethical behaviour and allow for flexibility in the context.

Results support the idea that acquiring knowledge is not enough for the development of deontological culture and professional ethics, but it takes deliberate exposure to ethically relevant scenarios, guided thinking about those scenarios, and modelling of ethical behaviour. These pedagogical approaches together help to create doctors who are able to act ethically, who are able to independently regulate themselves, who are able to be responsible, who are able to think ethically in complex situations, to think ethically in situations that are not clearly defined and are high-stakes.

Scientific novelty. The study highlights the relevance of the teaching of pedagogies that directly address the implementation of the deontological culture among medical students, rather than teaching only about the ethical principles. In the novelty, synthesizing evidence from literature to exemplify the framework of combined strategies (peer learning, mentorship, reflection, simulation, and clinical experience) that will be coherent for supporting the professional ethical development. Also, using real clinical contexts for the development of moral reasoning, with structure reflection and mentorship, helps to create a sophisticated understanding of the co-evolution of professional identity and ethical culture of future physicians.

Practical significance. The results have implications for medical education curricula. Teachers may use a well-structured programme with a combination of theory, hands-on and interactive teaching to inculcate moral values and deontological thinking in the students.

Conclusions. The formation of deontological culture and professional ethics in medical students is one of the key components of modern medical education. A systematic review of the literature confirms the effectiveness of a comprehensive approach that combines the integration of ethical disciplines into curricula, the use of case methods, role-playing games, and training aimed at developing moral responsibility, empathy, and professional values.

References

1. Patuzzo, S., De Stefano, F., & Ciliberti, R. (2018). The Italian Code of Medical Deontology. Historical, ethical and legal issues. *Acta bio-medica : Atenei Parmensis*, 89(2), 157-164. <https://doi.org/10.23750/abm.v89i2.6674>

2. Mandal, J., Ponnambath, D. K., & Parija, S. C. (2016). Utilitarian and deontological ethics in medicine. *Tropical parasitology*, 6(1), 5-7. <https://doi.org/10.4103/2229-5070.175024>
3. Domínguez Roldán J. M. (2023). La calidad en medicina como obligación deontológica [Quality in medicine as a deontological requirement]. *Cuadernos de bioetica : revista oficial de la Asociación Española de Bioética y Ética Médica*, 34(111), 163-171. <https://doi.org/10.30444/CB.151>
4. Tseng, P. E., & Wang, Y. H. (2021). Deontological or Utilitarian? An Eternal Ethical Dilemma in *Outbreak*. *International journal of environmental research and public health*, 18(16), 8565. <https://doi.org/10.3390/ijerph18168565>
5. Cestonaro, C., & Aprile, A. (2023). Legal, deontological, and ethical basis of the physician-minor patient care relationship. *Frontiers in medicine*, 10, 1186414. <https://doi.org/10.3389/fmed.2023.1186414>
6. Theodosopoulos, L., Fradelos, E. C., Panagiotou, A., & Tzavella, F. (2025). Cultural Competence and Ethics Among Nurses in Primary Healthcare: Exploring Their Interrelationship and Implications for Care Delivery. *Healthcare (Basel, Switzerland)*, 13(17), 2117. <https://doi.org/10.3390/healthcare13172117>
7. Zheng, M., Zhao, J., & Zhang, X. (2024). When You Think of and Identify Yourself as a Nurse, You Will Become More Deontological and Less Utilitarian. *International Journal of Environmental Research and Public Health*, 21(6), 712. <https://doi.org/10.3390/ijerph21060712>
8. Boon, K., & Turner, J. (2004). Ethical and professional conduct of medical students: review of current assessment measures and controversies. *Journal of medical ethics*, 30(2), 221-226. <https://doi.org/10.1136/jme.2002.002618>
9. Goodwin, A. M., Oliver, S. W., McInnes, I., Millar, K. F., Collins, K., & Paton, C. (2024). Professionalism in medical education: the state of the art. *International journal of medical education*, 15, 44-47. <https://doi.org/10.5116/ijme.6626.583a>
10. Cheng, F., Yang, C., & Deng, R. (2026). The Evolution of Visualization Technologies in Healthcare: A Bibliometric Analysis of Studies Published from 1994 to 2025. *Information*, 17(3), 281. <https://doi.org/10.3390/info17030281>
11. Zuccotti, G., Calcaterra, V., Infante, G., Pisarra, M., Damonte, G., Passi, A., Maggiolini, M., Ferretti, F., & Marsilio, M. (2026). Telemedicine and digital literacy across medical training: a multicentric analysis of behavioral and educational determinants of readiness. *BMC medical education*, 26(1), 405. <https://doi.org/10.1186/s12909-026-08710-0>
12. Tokuç, B., & Varol, G. (2023). Medical Education in the Era of Advancing Technology. *Balkan medical journal*, 40(6), 395-399. <https://doi.org/10.4274/balkanmedj.galenos.2023.2023-7-79>
13. Brown, M. E. L., Coker, O., Heybourne, A., & Finn, G. M. (2020). Exploring the Hidden Curriculum's Impact on Medical Students: Professionalism, Identity Formation and the Need for Transparency. *Medical science educator*, 30(3), 1107-1121. <https://doi.org/10.1007/s40670-020-01021-z>
14. Meyer, R., Archer, E., & Smit, L. (2025). The Positive Influence of the Hidden Curriculum in Medical Education: A Scoping Review. *Medical science educator*, 35(3), 1817-1826. <https://doi.org/10.1007/s40670-025-02380-1>
15. Li, G. J., Sherwood, M., Bezjak, A., & Tsao, M. (2024). Assessing the hidden curriculum in medical education: a scoping review and residency program's reflection. *Canadian medical education journal*, 15(5), 113-124. <https://doi.org/10.36834/cmej.78841>
16. Varkey B. (2021). Principles of Clinical Ethics and Their Application to Practice. *Medical principles and practice : international journal of the Kuwait University, Health Science Centre*, 30(1), 17-28. <https://doi.org/10.1159/000509119>

17. Hawking, M., Kim, J., Jih, M., Hu, C., & Yoon, J. D. (2020). "Can virtue be taught?": a content analysis of medical students' opinions of the professional and ethical challenges to their professional identity formation. *BMC medical education*, 20(1), 380. <https://doi.org/10.1186/s12909-020-02313-z>
18. Andersson, H., Svensson, A., Frank, C., Rantala, A., Holmberg, M., & Bremer, A. (2022). Ethics education to support ethical competence learning in healthcare: an integrative systematic review. *BMC medical ethics*, 23(1), 29. <https://doi.org/10.1186/s12910-022-00766-z>
19. Nacu, A.-G., Constantin, D.-A., & Rogozea, L. M. (2025). Ethical Dilemmas and Legal Responsibilities in Patient Care: An Analysis of Hospital Safety. *Healthcare*, 13(21), 2800. <https://doi.org/10.3390/healthcare13212800>
20. González-Blázquez, F. J., Ruiz-Hontangas, A., & López-Mora, C. (2024). Bioethical knowledge in students and health professionals: a systematic review. *Frontiers in medicine*, 11, 1252386. <https://doi.org/10.3389/fmed.2024.1252386>
21. Sullivan, B. T., DeFoor, M. T., Hwang, B., Flowers, W. J., & Strong, W. (2020). A Novel Peer-Directed Curriculum to Enhance Medical Ethics Training for Medical Students: A Single-Institution Experience. *Journal of medical education and curricular development*, 7, 2382120519899148. <https://doi.org/10.1177/2382120519899148>
22. DeFoor, M. T., East, L., Mann, P. C., & Nichols, C. A. (2019). Implementation and evaluation of a near-peer-facilitated medical ethics curriculum for first-year medical students: a pilot study. *Medical science educator*, 30(1), 219-225. <https://doi.org/10.1007/s40670-019-00873-4>
23. Kvernenes, M., Grimstad, H., Schei, E., Thyness, C., Dornan, T., & Stenfors, T. (2025). Knowing Me Knowing You-Mentorship in Hospital Placement. *The clinical teacher*, 22(6), e70230. <https://doi.org/10.1111/tct.70230>
24. Cheong, C. W. S., Chia, E. W. Y., Tay, K. T., Chua, W. J., Lee, F. Q. H., Koh, E. Y. H., Chin, A. M. C., Toh, Y. P., Mason, S., & Krishna, L. K. R. (2020). A systematic scoping review of ethical issues in mentoring in internal medicine, family medicine and academic medicine. *Advances in health sciences education : theory and practice*, 25(2), 415-439. <https://doi.org/10.1007/s10459-019-09934-0>
25. Nimmons, D., Giny, S., & Rosenthal, J. (2019). Medical student mentoring programs: current insights. *Advances in medical education and practice*, 10, 113-123. <https://doi.org/10.2147/AMEP.S154974>
26. Machost, H., & Stains, M. (2023). Reflective Practices in Education: A Primer for Practitioners. *CBE life sciences education*, 22(2), es2. <https://doi.org/10.1187/cbe.22-07-0148>
27. Artioli, G., Deiana, L., De Vincenzo, F., Raucci, M., Amaducci, G., Bassi, M. C., Di Leo, S., Hayter, M., & Ghirotto, L. (2021). Health professionals and students' experiences of reflective writing in learning: A qualitative meta-synthesis. *BMC medical education*, 21(1), 394. <https://doi.org/10.1186/s12909-021-02831-4>
28. Leung, K. C. Y., & Peisah, C. (2023). A Mixed-Methods Systematic Review of Group Reflective Practice in Medical Students. *Healthcare (Basel, Switzerland)*, 11(12), 1798. <https://doi.org/10.3390/healthcare11121798>
29. Mukurunge, E., Reid, M., Fichardt, A., & Nel, M. (2021). Interactive workshops as a learning and teaching method for primary healthcare nurses. *Health SA = SA Gesondheid*, 26, 1643. <https://doi.org/10.4102/hsag.v26i0.1643>
30. Friedrich, O., Hemmerling, K., Kuehlmeier, K., Nörtemann, S., Fischer, M., & Marckmann, G. (2017). Principle-based structured case discussions: do they foster moral competence in medical students? - A pilot study. *BMC medical ethics*, 18(1), 21. <https://doi.org/10.1186/s12910-017-0181-1>

31. Saber, M., Ebrahimi, S., Farzane, N., & Shakeri, A. (2022). Use of simulated patients for formative assessment of moral competence in medical students. *Journal of education and health promotion*, 11, 330. https://doi.org/10.4103/jehp.jehp_1275_21
32. Azim, S. R., & Shamim, M. S. (2020). Educational theories that inform the educational strategies for teaching ethics in undergraduate medical education. *JPMA. The Journal of the Pakistan Medical Association*, 70(1), 123-128. <https://doi.org/10.5455/JPMA.487>
33. Sarraf-Yazdi, S., Teo, Y. N., How, A. E. H., Teo, Y. H., Goh, S., Kow, C. S., Lam, W. Y., Wong, R. S. M., Ghazali, H. Z. B., Lauw, S. K., Tan, J. R. M., Lee, R. B. Q., Ong, Y. T., Chan, N. P. X., Cheong, C. W. S., Kamal, N. H. A., Lee, A. S. I., Tan, L. H. E., Chin, A. M. C., Chiam, M., ... Krishna, L. K. R. (2021). A Scoping Review of Professional Identity Formation in Undergraduate Medical Education. *Journal of general internal medicine*, 36(11), 3511-3521. <https://doi.org/10.1007/s11606-021-07024-9>