

The Practical Pathways of Enhancing Nursing Education in Medical Schools

Jie Mei^{1*}, Yichun Gao², Genxiao Ding¹, Yinbiao Wang²

¹Henan Provincial People's Hospital, Zhengzhou 450003, Henan Province, China

²Xinxiang Medical University, Xinxiang 453003, Henan Province, China

*Corresponding author: Jie Mei, mei396284351@163.com

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Abstract: The advancement of society and continuous improvements in the healthcare system have heightened the demands on professional nursing training, necessitating that nursing education better meet practical needs in an increasingly diversified medical environment. To address these requirements, the teaching approaches and assessment methods in nursing education should be reformed and updated. This study conducted a comprehensive analysis of the current state of nursing education and proposed potential pathways to enhance nursing education in medical schools. These pathways include implementing a student-centered teaching approach, incorporating various teaching activities, emphasizing the development of students' practical skills, and reforming assessment methods to cultivate well-rounded professionals. The application of these strategies will help improve the effectiveness of classroom teaching, deepen students' understanding of theoretical knowledge and practical skills, and thereby contribute to the improvement of nursing education quality.

Keywords: Nursing education; Enhancing pathways; Teaching approach; Practical skills

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1. Introduction

With ongoing improvements in medical standards and increasing societal demand, the training of nursing professionals has become increasingly challenging. Reports indicate that China's aging population is growing at an unprecedented rate^[1]. As of the end of 2023, nearly 297 million people were aged 60 or older, accounting for 21.1% of the total population, with projections suggesting this number will exceed 480 million by 2050. However, there is a significant shortage of elderly care personnel. In addition, with rapid advances in medical technology, nursing professionals face a continual need to update their knowledge and skills.

In this context, traditional teaching methods—primarily focused on classroom explanation and demonstration—cannot fully address the complexities of future medical environments or the demands of

modern nursing education. There is an urgent need to refine teaching, learning, and evaluation models to improve teaching quality, enhance nursing students' practical skills, and foster the coordinated development of students' practical and intellectual abilities.

This paper analyzes the current state of nursing education in China and presents practical pathways for enhancing nursing education in medical schools, aiming to provide a valuable reference for future studies in this area.

2. Current status of nursing education in medical schools

2.1. Lack of emphasis on practical skills and patient differences

Nursing primarily focuses on patient care, with core duties including assisting doctors, carrying out medical orders, and performing necessary nursing operations. Therefore, practical skills and the ability to address specific clinical needs are essential for nursing professionals. However, there are some shortcomings in the current curriculum design of nursing education, such as a lack of practical components and a disconnect between course content and job requirements. Additionally, current nursing practice education places excessive emphasis on standardized procedures, overlooking the impact of patient differences on nursing care ^[2]. It is well-recognized that patients' moods and cooperation are fundamental to effective nursing, and variations in patients' living and working environments can influence nursing procedures and methods. This oversight in teaching has contributed to nursing students' insufficient practical skills. Thus, there is a need to strengthen education in areas such as professional theory, practical skills, and professional ethics so that students can accurately assess patient conditions and provide more targeted care.

2.2. Insufficient interaction and improper evaluation of students

Traditional nursing education is largely lecture-based and exam-oriented, where teachers strictly adhere to textbook content and maintain a dominant role in the classroom without fostering meaningful interaction with students ^[3]. Furthermore, the teaching methods are relatively limited, often relying on verbal explanations and demonstrations. This one-dimensional approach fails to capture students' attention or engage their interest, leading to a superficial understanding of nursing work and often causing boredom in classes.

Current assessments in nursing education also reveal a disconnect between practical skills and theoretical knowledge. Some evaluations focus solely on test scores, neglecting students' proficiency in operational practices. Other assessments lack consideration for humanistic qualities, such as the service environment and the psychological experiences of patients. These issues hinder the effective cultivation of students' practical skills and ultimately affect the implementation of treatments and nursing measures. Given the practical nature of nursing work, formative evaluation—which measures students' progress in both theoretical and practical competencies throughout their studies—should be integrated into nursing education.

2.3. Neglect in cultivating the mental health of nursing students

Nurses are expected to communicate effectively with doctors, patients, and families, which requires nursing students to possess not only basic medical knowledge but also strong interpersonal communication skills. Nursing work frequently involves responding to emergencies and exposure to illness and death, placing a significant psychological burden on nurses and affecting their mental well-being. However, current nursing programs often overlook the development of students' psychological resilience.

Additionally, nursing professionals are expected to serve patients with empathy and compassion, considering patients' needs and addressing their questions and concerns with patience. The unique demands of the nursing environment, along with variability in patients' symptoms and recovery statuses, can contribute to job-related stress and negatively impact mental health ^[4]. Integrating psychological health training into nursing programs is essential to help students manage stress, develop resilience, and foster a positive work attitude for their future careers.

3. Practical pathways for enhancing nursing education in medical schools

3.1. Implementing a student-centered teaching mode

Nursing professionals need the ability to make quick decisions and take necessary actions in complex medical environments. Traditional teaching, where teachers primarily serve as knowledge providers and students passively receive information, lacks sufficient interaction between teachers and students. This approach emphasizes memorization over understanding, analysis, and application, and it focuses more on theoretical knowledge than practical experience, making it challenging for students to adapt to real-world job roles. To fully engage students and effectively cultivate their practical skills, it is essential to adopt a student-centered teaching mode in nursing education.

Student-centered teaching allows students to have influence over the content, activities, and other aspects of their learning ^[5]. This approach emphasizes the active role of students in knowledge construction and skill development. In this mode, students are no longer passive listeners in the classroom but active participants. Before class, relevant learning resources are made available on an online platform, allowing students to preview content and consider guiding questions that promote independent learning. During class, various teaching models such as flipped classrooms and split classrooms can be used to address questions through discussion, debate, and interaction. After class, additional learning materials, post-class exercises, and mock tests are provided on the platform. The integration of pre-class, in-class, and post-class activities through online and offline teaching—as well as individual and collaborative learning—can help maximize teaching efficiency.

In the classroom, teachers are encouraged to use role-playing, group collaboration, and scenario-based training to deepen students' understanding and foster their problem-solving abilities and teamwork skills. Simulating real medical scenarios using virtual reality technology and anatomical models enables students to practice handling various nursing situations and refine their operational skills, such as vital sign monitoring, medication administration, and basic life support ^[6]. Moreover, designing specific nursing tasks that address real problems in emergency response training and internships allows students to apply their knowledge and skills in actual work settings, enhancing their practical abilities and problem-solving skills.

To meet the practical needs of nursing work, course content should also be updated to reflect the latest research findings in medicine and nursing. Recent advancements in nursing practice, new textbooks, online courses, and other learning resources need to be incorporated promptly into the curriculum. Additionally, experts and practitioners from the medical field are encouraged to give lectures or host seminars to provide students with insights into current career trends and challenges.

3.2. Involving various teaching activities

Diversified teaching activities can stimulate students' interest in learning and improve their engagement. In

nursing education, methods such as situational teaching, case-based teaching, problem-based teaching, and team-based teaching can help engage students more actively with course content. For example, multimedia technology can vividly present theoretical knowledge, such as the distribution of bones and layered muscles, addressing students' challenges with spatial perception. Additionally, virtual reality and simulation technology can create a safe environment for students to practice clinical skills without the risk of harm to patients ^[7]. With the simulation of human-like vital signs, such as pulse, respiration, and chest movement, simulators can exhibit behaviors like blinking and coughing and respond appropriately to nursing interventions. For example, in a sudden cardiac arrest scenario, the simulator can display patient symptoms under pre-programmed settings. Consequently, nursing students are trained to collaborate, make quick decisions, and perform tasks such as chest compressions, bag-mask ventilation, defibrillation, and medication administration according to a doctor's orders ^[8]. Students can also rotate roles to develop decision-making skills across different roles through repeated practice. The presentation of complex clinical nursing scenarios and group collaboration can cultivate students' clinical thinking skills and teamwork abilities, laying a strong foundation for their future work.

In addition, diverse teaching formats, including group collaboration, case analysis, project-based learning, and practical exercises, can be used to help students acquire relevant professional skills more effectively. For example, in case analysis, teachers present clinical cases commonly encountered in the medical field and encourage students to gather case information and nursing procedures each week ^[9]. Students then participate in group discussions on key challenges in the treatment and nursing care of the patient. Finally, the teacher summarizes the main points of the case and introduces recent developments relevant to the case. Throughout this process, teachers also guide students to consider patients' immune status and their living and working environments. This exploration of illness causes and nursing methods in case analyses deepens students' understanding of nursing knowledge in a practical context.

3.3. Focusing on the cultivation of students' practical abilities

Nursing is an evolving field shaped by advancements in medical technology and clinical innovation. A key indicator of success in nursing education is whether students can effectively perform their roles upon graduation. Therefore, nursing education should be employment-oriented to ensure that students can quickly adapt to their positions and fully utilize their abilities. Additionally, nursing programs should incorporate the latest research and cutting-edge technological applications to inspire students' academic interests and better prepare them for future practical work.

Teachers can leverage clinical materials and case studies to stimulate nursing students' curiosity and interest in the profession, as well as to develop their sense of job-related responsibilities ^[10]. Using real cases enhances students' understanding of professional knowledge, increases their awareness of practical nursing issues, and helps them adapt to various medical scenarios. Moreover, inviting professional nursing staff from local hospitals to serve as instructors who can explain essential practical details from actual nursing processes can further strengthen students' competencies.

Clinical internships are an effective way for nursing students to develop practical skills and gain experience in handling complex medical cases. Schools can actively collaborate with hospitals, clinics, community health centers, and other medical institutions to provide students with clinical practice opportunities and hands-on learning experiences. A typical example of this is the compulsory rotatory residential internship ^[11]. By rotating through departments such as internal medicine, surgery, gynecology, and pediatrics, students can refine their

hands-on skills and operational abilities across various clinical practices. Additionally, investing in medical equipment is essential to support effective practical training.

3.4. Reforming assessment to cultivate comprehensive talents

Assessment is a vital tool for understanding students' academic progress and practical abilities. However, traditional written exams are insufficient for evaluating students' overall capabilities, as they often fail to test students' skills in real-world scenarios. Thus, it is important to align assessments more closely with the requirements of actual nursing work. In nursing education, students should be assessed through a combination of theoretical and practical evaluations. Theoretical assessments should be relevant to clinical practice and focus on students' problem-solving and analytical abilities. To provide a structured assessment framework, a pyramid model can be used, focusing on students' knowledge retention, comprehension, and practical abilities ^[12].

For practical skills assessment, a virtual standardized patient (VSP)-based approach can help eliminate teacher subjectivity, enabling objective and standardized evaluations ^[13]. VSP assessments can evaluate students' clinical decision-making skills by allowing them to repeatedly practice history-taking and nursing responses ^[14]. For example, students' abilities to make clinical judgments in cases such as stroke, acute abdomen, and asthma can be tested using VSP scenarios in emergency contexts. This method integrates theory and practice within a clinical framework, offering the advantage of clinical relevance, though it does require significant time and resources.

Additionally, assessments should consider students' humanities awareness and clinical reasoning abilities. In addition to end-of-term exams, regular, experimental, and midterm assessments can provide teachers with a comprehensive view of students' skill development over the semester. Furthermore, by evaluating students' ongoing performance, teachers can address questions in a timely manner and provide targeted assistance, thereby enhancing students' learning and practical skills.

4. Conclusion

In the modern era, nursing education holds the critical responsibility of developing highly competent nursing professionals equipped with strong theoretical knowledge and practical skills. To better prepare nursing students for future developments in the medical field, several strategies are required to improve the current approach to nursing education. This study proposed four specific pathways to strengthen nursing education in medical schools: implementing a student-centered teaching model, incorporating diverse teaching activities, emphasizing the cultivation of students' practical abilities, and reforming assessments to develop comprehensive skills. Adopting these strategies will help enhance students' practical competencies, stimulate their academic interests, and encourage proactive learning habits.

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