RESEARCH

Exploring the barriers to nursing students' speaking up for patient safety in Iran: a qualitative study

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Abstract

Background Patient safety is a significant concern in healthcare settings, and speaking up for patient safety is essential for promoting the quality of care and preventing harm. However, nurses, including nursing students, often face barriers that hinder their ability to report safety concerns. In this study, we explored the nursing students' experiences of barriers to speaking up for patient safety in clinical practice settings.

Methods The study used an exploratory-descriptive qualitative design. Data were collected through semi-structured interviews with 19 final-year nursing students at the Tabriz Nursing and Midwifery Faculty between April and June 2023. The data were analyzed via conventional content analysis until data saturation was achieved.

Results This study revealed the formation of three distinct categories: lack of communication and collaboration between healthcare professionals and students, inadequate preparation for speaking up for patients' safety, and theory-practice disconnection in nursing education. These categories are composed of eight sub-categories.

Conclusion The study found barriers that prevent nursing students from voicing concerns about patient safety in clinical settings. By understanding these obstacles, healthcare professionals can develop strategies to foster a safety culture and empower nursing students to advocate effectively for patient safety.

Clinical trial number Not applicable.

Keywords Nursing students, Patient safety, Qualitative research

Introduction

Patient safety is a critical issue in contemporary health care [1]. It is defined as the absence of preventable harm to a patient during health care, which involves minimizing the risk of unnecessary harm to an acceptable level [2]. Adverse events due to unsafe care are among the ten leading causes of death and disability worldwide, with a 1 in 300 chance that a patient will be harmed while receiving healthcare [3]. Maintaining patient safety and identifying potential risks are essential responsibilities of healthcare professionals [4], but significant barriers still exist. Human factors related to clinical errors and accidents often arise from weak interpersonal relationships

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and ineffective communication within the care team [5]. Miscommunication among healthcare professionals is estimated to cause 80% of serious safety events [6]. Similarly, poor communication between patients and practitioners significantly contributes to patient safety incidents [7]. Additionally, a lack of communication between the care team and students can further jeopardize patient safety [8].

To address these risks effectively, proactive communication is vital. Speaking up is essential in clinical situations where patient safety concerns are persistent [9]. It refers to assertively communicating patient safety concerns through information, questions, or opinions when immediate action is necessary to prevent patient harm [5]. In a safety culture, speaking up is a critical element that promotes open communication of concerns [9]. The World Health Organization (WHO) has identified patient safety as a critical issue and chose the slogan "Speak up for patient safety" for World Patient Safety Day in 2019, emphasizing that patient safety relies on people-centered healthcare [10].

In this context, nursing students, as junior care team members, can play a significant role in patient safety. They can help identify potential risks, provide early intervention, and ensure accurate documentation [11]. Nursing students also can act as a link between patients and nurses, contributing to an additional layer of safety [12]. This involvement can affect their professional development, future practice, and immediate learning experience. Many students consider speaking up a professional and moral responsibility [8, 13]. Therefore, nursing students must develop the skills to express their concerns when observing unsafe practices in clinical environments [14, 15].

In recent years, research has significantly increased the focus on understanding students' experiences during their clinical learning. This body of research has highlighted various concerns regarding unsafe and poor practices witnessed by students during clinical rotations [8, 16–18]. Many students fear negative consequences that may affect their learning experience [19] and worry about being ostracized for raising concerns [13]. Despite understanding specific patient safety concerns, 56% of students fail to speak up in critical situations [5]. They feel powerless and unvalued in the clinical setting, so they do not report incidents [20]. According to a qualitative study, nursing students' self-expression skills and readiness to express frank opinions about patient safety can have significant psychosocial consequences for their self-confidence, empowerment, and success [21].

Although evidence indicates that patient safety has consistently been a top priority in healthcare [22], limited research has focused on nursing students' challenges when speaking up for patient safety [8, 19, 23]. Since safety cultures and organizational conditions vary across countries, and considering our study population consists of students, conducting a qualitative study is an effective approach to gathering data about their genuine experiences. Qualitative research offers a deeper understanding of nursing students' barriers, capturing each participant's unique experiences, addressing the contextual factors influencing their decision-making, and validating their concerns. Additionally, it contributes to developing strategies to overcome these barriers [24]. Furthermore, a better understanding of "expressing a clear opinion" can help leaders and decision-makers improve healthcare quality and safety [25]. Thus, this study investigated student nurses' experiences regarding barriers to speaking up for patient safety in clinical practice settings.

Method

Study design and setting

This study used an exploratory-descriptive qualitative design, utilizing conventional content analysis for data analysis [24]. It was documented using a recommended reporting system, the consolidated criteria for reporting qualitative research (COREQ) [26].

Participants and sampling

Nineteen final-year nursing students were recruited via purposive sampling. All participants in our study passed internship courses from various clinical settings, including emergency departments, psychiatric clinical settings, critical care units, intensive care units, general pediatric units, general adult units, and operating rooms. This diversity allowed us to capture a wide range of perspectives and experiences of the participants toward speaking up about patient safety challenges. The inclusion criteria were as follows: (1) studied in their final year in a bachelor of nursing program, (2) had experience with patient safety, such as being responsible for or observing patient safety incidents, and (3) completed their courses without failure. Participation in the study was announced on the nursing students' bulletin boards and social media platforms where the students were active. Potential participants were informed about the research objectives and the process for participation. Interested students who were eligible received a research team member's cellphone number and email address during the sampling process to establish contact.

The purposive sampling was used to select the maximum diversity in terms of the nursing students' age and sex. The varied participants allowed us to ensure that our results were representative of the general population. Data saturation was not a consideration in the number of interviews gathered; instead, interviews were continued until sufficient rich, detailed data were collected to

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inform robust data analysis and a comprehensive understanding of the phenomenon under study.

Data collection

The second author (FR) conducted the interviews in Persian using a face-to-face semi-structured interview guide between April 2023 and June 2023. She was an expert in the field of study, had extensive experience conducting interviews, and was familiar with the study context. She was also trained in non-verbal techniques, such as active listening and body language, to facilitate effective participant interactions. The interview guide was developed based on a review of relevant literature and the researchers' personal experiences, focusing on nursing students' experiences of speaking up about patient safety (see supplementary file). Pre-testing of the interview guide was conducted with three final-year nursing students from Tabriz Nursing and Midwifery Faculty. These students participated in a simulated interview session and provided feedback on the clarity and relevance of the questions. Their input was analyzed to identify any ambiguous or redundant questions revised to enhance the guide's effectiveness. This pre-testing process ensured the interview guide was well-suited for the study participants.

During each interview, participants were first asked general questions about their experiences related to patient safety, such as, "Can you share your experiences of speaking up about patient safety and describe any situations you have witnessed or encountered that raised your concerns?" Following this, more specific questions addressing the research question were posed: "How do you handle situations where patient safety is compromised? Have you experienced any negative consequences for speaking up about patient safety? What factors influence your decision to speak up about safety concerns?" The interviews lasted between 45 and 90 min and were conducted at locations chosen by the participants, either on campus or in a clinic office. All interviews were audio-recorded and transcribed verbatim with the participants' consent. The researcher, who was familiar with the students, assured them that their statements would not affect their education or evaluations. Data collection and analysis occurred concurrently, with emerging themes further explored in subsequent interviews. Recruitment continued until data saturation was reached, defined as the point at which no new significant information or codes emerged. Follow-up interviews were conducted with two participants (Participant No. 17 and Participant No. 4) to gain additional insights into their experiences. The voice recording app on the interviewer's phone was used to capture the participants' voices. Additionally, no software was utilized for data analysis. To ensure the accuracy and credibility of the analysis, the results were shared with each participant for verification of the interview details.

Data analysis

Qualitative content analysis was conducted using the method proposed by Graneheim and Lundman (2004) [24]. A verbatim transcription of the interviews was completed and analyzed after each session. Through an inductive approach, the transcribed texts were reviewed and examined several times to gain a comprehensive understanding (FR and MV performed this step separately and reviewed the findings as a group). Then, the meaning units (e.g., words, sentences, or paragraphs) related to the questions were identified and extracted (this step was conducted by FR and MV separately, and then all authors discussed the findings). Condensed meaning units were abstracted into 346 codes. Considering the similarities and differences between the original codes, the codes were condensed, interpreted, and compared. Through this constant comparative method, categories and sub-categories were identified. Four researchers agreed on the final sub-categories and categories in three meetings.

Rigor

The rigor of the study was established according to Lincoln and Guba's (1984) criteria for credibility, transferability, dependability, and confirmability [27]. Credibility was ensured by recording and summarizing the interviews, with verification conducted during each session through member checking. After coding each interview, the codes and interpretations were returned to the participants for confirmation. Adjustments were made when participants identified discrepancies between the research interpretations and their perspectives. Probing questions were also employed during interviews to ensure that the inferences drawn from participants' views were accurate. Transferability was achieved by selecting a diverse sample with various socio-demographic characteristics. Dependability was supported by the collaboration of four researchers throughout the data analysis process. In addition to detailing the study's procedures, we cited participants' statements appropriately to interpret the results effectively. Confirmability was enhanced by thoroughly documenting the data collection, analysis, and interpretation details, ensuring transparency throughout the research process.

Ethical considerations

This study received approval from the ethical committee of Tabriz University of Medical Sciences (Number: TBZMED. REC.1401.987). Nursing students who met the eligibility criteria were informed about the purpose and nature of the study and were invited to participate voluntarily. Informed consent was obtained from all

Table 1 Categories and subcategories extracted from qualitative content analysis

Theme	Categories	Sub-categories
Barriers to speaking up for patient safety	Lack of communication and collaboration between healthcare professionals and students	Exclusion from the patient care team
		Fear of reporting incidents
	Inadequate preparation for speaking up for patients' safety	Lack of confidence and assertiveness skills
		Lack of mentorship and support
		Lack of awareness regarding professional responsibilities
	Theory-practice disconnection in nursing education	Expectations vs. reality in clinical settings
		Challenges in applying theory to practice

participants. To ensure confidentiality, unique identifier numbers were assigned to each participant.

Results

The participants included 19 final-year nursing students from diverse backgrounds. The mean age was 21.6 ± 5.3 years, ranging from 21 to 25. Among the participants, 57.9% were female. The mean grade point average (GPA) was 17.5 ± 3.7, with GPAs ranging from 16 to 18.

Using conventional content analysis, meaning units were sorted and abstracted into eight subcategories. These were then interpreted and summarized into three main categories to explore the primary barriers nursing students encounter when speaking up about patient safety.

Theme: barriers to speaking up for patient safety

Nursing students encountered various barriers to speaking up for patient safety during their clinical experiences. These barriers highlight the challenges students encounter in this regard. Three categories emerged from the theme of barriers to speaking up for patient safety: lack of communication and collaboration between healthcare professionals and students, inadequate preparation for speaking up for patient safety, and disparities between theoretical knowledge and clinical practice (Table 1).

Category one: lack of communication and collaboration between healthcare professionals and students

Nursing students reported feeling excluded from actively contributing to patient safety due to the absence of a clearly defined role within the healthcare setting. This lack of clarity often leads to challenges in communication and collaboration with healthcare professionals, ultimately jeopardizing patient safety. Many expressed concerns about retaliation or negative consequences for voicing their opinions, leading to a reluctance to "rock the boat." The apprehension of being perceived as incompetent or questioning authority further contributes to their insecurity, which hampers their ability to speak up and report errors.

Exclusion from the patient care team

Nursing students expressed the need for more effective communication with other healthcare professionals. They highlighted instances where critical information was not shared, communication channels were ineffective, and teamwork was insufficiently fostered. This lack of communication often leaves nursing students feeling out of the loop and unable to advocate effectively for their patients. Without open dialogue, they struggle to provide optimal care and feel hesitant to voice their concerns or ask questions. One participant said,

> *Many of us feel excluded from the patient care team. If something happens to the patient, it has nothing to do with us since we are only observers. Nurses and doctors do not communicate with us about the patient's situation. We cannot participate in patient care decisions. We cannot share our knowledge or opinions. (Participant No. 5)*

Students felt they lacked the authority and responsibility to intervene in patient care matters, which hindered them from voicing concerns or suggestions to enhance patient safety. This mindset led to missed opportunities to contribute their knowledge and insights regarding patient safety. Another participant reflected,

> *It is not our responsibility to be part of the patient care team. In other words, they do not give us this right. Therefore, we do not give ourselves this right. We cannot speak up when patient safety is compromised. (Participant No. 1)*

Fear of reporting incidents

The lack of effective communication fostered a culture of fear, causing students to be reluctant to speak up about incidents or safety concerns. The students expressed reluctance to report patient safety incidents due to fears of retaliation. They also needed more trust in the system or believed their concerns would not be taken seriously. This fear of reporting hindered corrective actions and prevented valuable learning opportunities from incidents. One participant expressed,

The fear of being labeled troublemakers prevented me from raising safety issues. The consequences of reporting them scared me. I was also afraid that my voice would not be heard and ignored. (Participant No. 12)

This fear of speaking up created a culture of silence, leaving issues and problems unresolved and perpetuating an unsafe and unhealthy environment for students. Furthermore, this silence resulted in lower morale, decreased productivity, and reduced collaboration, along with heightened stress and anxiety. It also diminished student engagement, motivation, and interest in speaking up for patient safety. Another participant remarked:

I'm tired of being silenced. I want to express my opinions without fear of retribution. I want to be heard. Fear of facing consequences or backlash for speaking up is a constant deterrent, leaving me frustrated and stifled. (Participant No. 17)

Category two: inadequate Preparation for speaking up for patient safety

Students reported needing more preparation to speak up about patient safety based on their experiences. This category highlights the insufficient assertiveness training given to nursing students, which hampers their ability to address safety concerns effectively. Insufficient preparation often leaves students without adequate guidance in identifying and tackling potential safety issues. Furthermore, they received little support when reporting problems. This gap in guidance and support made it difficult for them to advocate for their patients.

Lack of confidence and assertiveness skills

Nursing students expressed unpreparedness or uncertainty regarding their ability to speak up about patient safety concerns. They felt inadequate or needed more confidence and knowledge to express their concerns appropriately. Owing to this lack of confidence, they often hesitated to voice their concerns or were perceived as inexperienced. One participant shared,

I was not sure I knew enough about patient safety issues. A nurse hurriedly performed the angiocath change and did not follow some basic procedures. I could not comment on this due to a lack of confidence in myself. I should have spoken up and helped ensure patient safety. I regret not acting. (Participant No. 10)

During clinical courses, there is often insufficient emphasis on teaching nursing students how to communicate their opinions about patient safety to other healthcare

professionals. As a result, students feel unprepared to voice their concerns in high-pressure situations. This gap in training hinders their ability to advocate for their patients and contribute to a safe healthcare environment. Another participant noted:

During clinical courses, we are rarely taught how to express our opinions about patient safety to other healthcare professionals. We are expected to follow the rules and protocols outlined by healthcare facilities. However, it is important to voice concerns about patient safety when necessary. We should also be encouraged to do so. (Participant No. 16)

Lack of mentorship and support

Nursing students expressed that they struggled to address patient safety issues due to inadequate support and mentorship. Consequently, they hesitated to discuss patient safety issues because they would not receive adequate training or support. Despite their efforts to address critical issues, their voices were often dismissed or ignored. This lack of support highlights the need for a more receptive and responsive healthcare environment. In this regard, one participant shared,

Nobody supported us when we spoke out about patient safety. Our clinical professor said that we should not interfere with routine clinical work. She probably worried that raising concerns about patient safety would disrupt clinical authority. Possibly, she feared that if we spoke up, existing processes and protocols would be undermined. (Participant No. 18)

Lack of awareness regarding professional responsibilities

The nursing students reported that they did not know the importance of disclosing safety concerns; therefore, they hesitated or were uncertain about doing so. They indicated that patient safety issues were not considered serious in clinical settings. One participant expressed,

I feel like I am bothering nurses if I speak up about safety issues. It is not my job. (Participant No. 18)

They did not understand the legal and ethical implications of remaining silent, including potential legal actions and ethical issues. Another participant stated,

If we do not talk, what will happen? We should defend patients' rights ethically. It has happened many times that we did not say anything, and the patient was fine the next day! Maybe he was healthy (laughs). (Participant No. 7)

Category three: the theory-practice Disconnection in nursing education

According to nursing students, the theory they receive in academic settings does not effectively prepare them for the practical skills required in real-world clinical settings. This gap could hinder students' ability to effectively transition from academic settings to clinical practice, potentially impacting patient care and safety. They felt that their theoretical knowledge did not translate into real-world scenarios, hindering their ability to discuss patient safety risks.

Expectations vs. reality in clinical settings

The participants reported a discrepancy between their expectations for their roles and responsibilities as future nurses and their experiences during clinical rotations. The inconsistency led to a decline in advocating for patient safety. Nursing students observed during clinical practice that nurses and other treatment team members provided routine care and did not strictly adhere to safety protocols, resulting in preventable errors. One participant reflected,

> *There was a considerable difference between what we learned in theory and what we saw in practice's routine work. We observed that nurses did not follow rules and standards to promptly complete tasks and provide care. What should we do? We need clarification. (Participant No. 15)*

Many students hold idealized notions of being nurses, envisioning themselves as advocates for patient safety and bearers of good news. However, without strong role models and leaders prioritizing patient safety and empowering students to voice their concerns, students have struggled to advocate effectively for their patients. In this regard, one of the participants stated,

> *Nursing principles were taught in class in great detail. Nurses, however, do their work according to what is easiest for them, not adhering to safety principles. No matter how much we study or care for our patients based on safety, we will eventually become like them.*

Without the courage of nurses to speak up, students are less likely to develop these critical skills. In such environments, students might perceive silence as the norm, perpetuating a cycle of inaction. Another participant stated:

> *Our future as nurses will be like theirs. What are the benefits of becoming more Catholic than pope? If there were a problem with their work, it would have happened by now. Following caring rules only exists in textbooks (laughs). (Participant No. 10)*

Challenges in applying theory to real-clinical problems

One key challenge explored in nursing students' experiences was applying theory to practice. They reported facing challenges where the knowledge gained from coursework and textbooks was insufficient for the complexities of clinical practice. This subcategory highlights their challenges in applying theoretical knowledge to patient safety scenarios. One participant expressed,

> *The most challenging aspect for me as a student is putting theory into practice when speaking up for patient safety. Understanding the concepts and principles we learn in the classroom is easy, but applying them in real-life situations can be intimidating. (Participant No. 11)*

Moreover, nursing students need to be able to apply theory to the clinical setting and recognize when it is required. A deep understanding of the theories and concepts learned in class and being prepared to apply them to practice contributes to confidence. Another participant noted:

> *The theory we learn in the classroom provides a solid foundation for advocating for patient safety, but translating this knowledge into practice can be challenging. (Participant No. 1)*

Discussion

This study revealed several barriers nursing students face when speaking up for patient safety, including inadequate communication and collaboration between healthcare professionals and students, insufficient preparation to speak up about patient safety, and theory-practice disconnection in nursing education. Similar challenges were noted in Fagan et al.'s study, particularly regarding ineffective communication between students and healthcare professionals [8]. Despite these barriers, all participants remained committed to patient safety. Their unwavering commitment to patient safety indicates their strong dedication and resilience in adversity.

Poor communication and collaboration between healthcare professionals and students creates a significant barrier, resulting in student silence when faced with safety concerns. In a non-collaborative environment, students often hesitate to report safety issues out of fear of repercussions or dismissal [18]. This reluctance prevents nursing students from advocating for patient safety and hinders the development of a culture of patient safety advocacy [17]. Without effective communication, students often feel ignored and unheard [28].

The findings indicate that nursing students are frequently excluded from contributing to patient safety due to their unclear role in clinical settings. As a result, ignoring nursing students from contributing their opinions and experiences to patient safety conversations was a main barrier to their speaking up for patient safety. Previous research supports the need for nursing students to feel valued as learners, team members, and individuals in clinical practice [29]. Bril et al. (2022) emphasized that a safe learning environment encourages students to explore and express concerns about patient safety issues [30]. Another study showed that nursing students were kept from doing so despite wanting to participate and comment on the patient's treatment process [31]. They felt their opinions needed to be valued and recognized for their input. Like those identified by other studies, this has a detrimental effect on their ability to speak up for patient safety issues [32, 33].

Nursing students often experience fear when reporting safety problems due to concerns about potential negative consequences, such as retribution, being labeled as troublemakers, or facing disciplinary action. This fear serves as a significant barrier to discussing safety incidents, perpetuating a culture of silence and hindering the creation of a safer environment. Previous studies consistently show that students feel discouraged from reporting due to fear of reprisal or skepticism about whether their reports will lead to meaningful change [8, 28, 34]. Hoffman et al. argued that one of the most common barriers to speaking up was fear of negative or unpredictable reactions [28]. These factors can lead to students ignoring safety standards and employing inefficient strategies [35].

A major barrier to nursing students speaking up about patient safety was their lack of confidence and assertiveness skills. They often feel inadequate and worry that their concerns for patient safety might be dismissed or belittled due to their perceived lack of experience. Other studies have similarly reported that nursing students lack the skills to address issues that threaten patients' safety [13, 25]. According to Fagan et al. (2021), nursing students need more training or qualifications to recognize unsafe practices. They also feel that the issue is not their responsibility and would be better addressed by experienced healthcare professionals [36]. In a qualitative study exploring student perceptions of patient safety issues in the curriculum, the findings illustrate the advantages of introducing dedicated courses on patient safety early in the training of health professionals. Students reported a lack of baseline awareness regarding essential patient safety concepts, highlighting gaps in the existing curricula [37].

A lack of mentoring and support was reported as another barrier to students speaking up. As reported in previous studies, nursing students need more guidance from their teachers or mentors to develop the communication skills necessary to speak up. As a result, many of them feel unprepared to voice their opinions [16]. Nursing students' perceptions of mentoring in patient safety issues revealed that mentors are important in helping students enhance their communication skills through constructive feedback [25]. They can create a supportive environment where students feel safe in expressing their thoughts and asking questions. Additionally, mentors can facilitate practice scenarios that help students gain confidence in speaking up [38].

Lack of awareness regarding professional responsibilities for speaking up was identified as a major barrier faced by nursing students, highlighting a significant gap in the nursing curriculum [39]. Similarly, a study conducted by Dehkordi et al. revealed that a lack of awareness of the professional responsibility to disclose safety concerns could lead to a lack of reporting of safety concerns, leading to increased patient harm [40]. Most students stated that patient safety education was primarily provided through lectures instead of clinical rotations or simulation sessions [41]. Additionally, fostering a culture of open communication and support within healthcare education can empower students to prioritize patient safety without hesitation [8]. Based on the results of Kim's study, improving patient safety management activities requires applying what is learned through empirical interactions with patients in the clinical field rather than relying on knowledge and skills [42].

Following the nursing students' experiences, there was a significant difference between what students learned in theory and what they observed in practice regarding patient safety. They emphasized that this mismatch contrasted with the realities they encountered during their clinical rotations. Consistent with this finding, Afaneh et al. reported that students may have expected to speak up when they disagreed with something, but in reality, they were often discouraged from doing so [43]. This transition can be difficult, as students are expected to take initiative and speak up in clinical settings. However, instructors or peers may discourage them from doing so [44].

Consistent with our findings, the significant gap between theory and practice is frequently cited as a major barrier to voicing patient safety issues [37]. Previous studies highlighted a disconnect between students' experiences in the classroom and the skills required in clinical settings to speak up for patient safety [28, 42]. While theory provides a foundational understanding of concepts and principles, it often lacks the details required for effective real-world application [43]. To bridge this gap, it is crucial to provide nursing students with real-world examples and hands-on activities [45]. Therefore, nursing education on patient safety should integrate theoretical

and clinical learning opportunities [46]. Bressan et al. reported that the nursing program has failed to enhance students' knowledge of patient safety. However, integrating theoretical courses with clinical rotations has effectively mitigated the expected decline in expertise from the classroom. These findings demonstrate the necessity of maintaining this combination to safeguard student learning and performance [12].

Limitations

This study has several limitations. Its focus on a single institution in Iran may also limit its generalizability to other contexts. Additionally, methodological limitations should be considered when interpreting the results. Incorporating field notes alongside interviews could enhance the validity of research findings.

Conclusion

The results highlight significant barriers to nursing students speaking up about patient safety, including a lack of communication and collaboration between healthcare professionals and students, inadequate preparation for advocating for patients' safety, and the disconnect between theory and practice in nursing education. These findings emphasize the need for better integrating theoretical training with practical skills, fostering better communication channels, and ensuring comprehensive preparation for real-world clinical demands. Given nursing students' critical role in identifying and addressing patient safety concerns, healthcare managers should introduce interprofessional rounding, where healthcare professionals from different disciplines collaborate to discuss patient care, providing nursing students with opportunities for involvement. Additionally, it is vital to strengthen collaborations between healthcare education and clinical practice. By promoting open communication and providing mentorship and practical experiences, these partnerships can help build a safety culture within healthcare settings. This strategy ensures that the perspectives of future nurses are considered in the pursuit of optimal patient care. Healthcare professionals can act as mentors, guest lecturers, or clinical preceptors, providing students real-life examples and insights into patient safety practices.

Declarations

Ethics approval and consent to participate

This study was approved by the ethical committee of Tabriz University of Medical Sciences (Number: TBZMED. REC.1401.987). All methods were conducted in accordance with relevant research guidelines and regulations, including the Declaration of Helsinki. The purpose and nature of the study were explained to the nursing students who met the eligibility criteria, and they were encouraged to participate voluntarily. Informed consent was obtained from the participants. A unique identifier number was used to protect participants' confidentiality.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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