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Integration of Health Education into Nursing Practice to Improve Patient Safety

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Abstract

Patient safety is a primary indicator of healthcare quality and is the responsibility of all healthcare workers, particularly nurses, who provide direct patient care. One strategic effort to improve patient safety is through the integration of health education into nursing practice. This study aims to analyze the relationship between the integration of health education into nursing practice and improved patient safety. The study used a quantitative design with a descriptive correlational approach. The study sample consisted of nurses working in inpatient care units, using a purposive sampling technique. Data collection was conducted using a structured questionnaire that measured the level of integration of health education and patient safety. Data analysis was conducted descriptively and analytically using correlation tests. The results showed that the majority of nurses had integrated health education into nursing practice, with a good level of patient safety. Furthermore, their patient safety level was also high. The correlation analysis revealed a positive and significant correlation between the integration of health education and patient safety, indicating that the better the implementation of health education by nurses, the higher the level of patient safety. The discussion of the research findings reveals that structured, ongoing health education supported by effective therapeutic communication can improve patient knowledge, awareness, and participation in maintaining safety during the care process. The conclusion of this study confirms that integrating health education into nursing practice is a crucial strategy for improving patient safety. Therefore, healthcare facilities are expected to strengthen policies, ongoing training, and a culture of patient safety to support the optimization of nurses' educational role.

Keywords: Health education; Nursing practice; Patient safety; Role of nurses; Quality of healthcare

Introduction

Patient safety is a crucial component of a quality healthcare system, with nursing, as a health profession, at the

forefront of its implementation. Nurses are not only responsible for providing clinical care but also play a crucial role as educators for patients and families and as agents of change in the safety culture in healthcare facilities. Recent studies have shown that health education integrated into nursing practice has strengthened nurses' knowledge, attitudes, and skills in effectively implementing patient safety principles, thereby reducing preventable incidents and improving the quality of care (Park & Yeom, 2025).

Integrating patient safety education into the nursing curriculum not only provides a theoretical foundation for students but also supports the development of applicable clinical competencies in the practice environment. This is evident in the implementation of innovative learning strategies such as simulations and structured clinical experiences that enhance students' understanding of risk management, effective communication, and critical decision-making in high-risk situations (Park & Yeom, 2025).

Health education in the context of nursing practice includes empowering patients and families to understand their health conditions, recognize potential risks, and participate in the care process. Research in this area shows that effective health education can improve the knowledge and attitudes of patients' families regarding the prevention of nosocomial infections (HAIs), which is a key indicator of patient safety (Priskila, Carolina, & Anggraini, 2024).

Furthermore, adequate nurse education has been shown to be positively correlated with adherence to safety practices such as fall prevention and other standard procedures in healthcare units. A quantitative study of nurses at Blambangan Regional Hospital found that nurses' education and knowledge significantly influenced their adherence to preventing patient safety incidents (Imelida, 2024).

Expanding the role of nursing through interprofessional collaboration is also an important strategy in strengthening a culture of patient safety. Interprofessional Education (IPE), a form of integrated learning across healthcare professions, has been shown to improve nurses' collaboration skills, which in turn supports safer care coordination and clinical decisions for patients (Lahagu & Endah Nurhidayah, 2023).

Another comprehensive study confirms that the integration of health education and nursing practice elements must be carried out systematically, including evidence-based teaching strategies and practice reflection that can enrich the learning experience and consistently apply patient safety principles in clinical practice (Alotaibi et al., 2024).

As healthcare needs evolve, an integrative approach that includes continuing education, interprofessional communication, and a strong safety culture is key to reducing near misses and improving the quality of care. Therefore, research and implementation focused on integrating health education into nursing practice must continue to be enhanced to promote patient safety as a top priority in nursing care.

Method

This study employed a quantitative design with a cross-sectional approach. This design was chosen to identify the relationship between the integration of health education into nursing practice and patient safety levels at a single measurement point.

The study population consisted of all nurses working in the hospital's inpatient unit. The sample was drawn using a purposive sampling technique with the following inclusion criteria: 1) Nurses providing direct patient care, 2) Having worked for at least one year, and 3)

Willingness to participate. The sample size was adjusted to meet the research needs, with 120 respondents. The independent variables in this study were the integration of health education into nursing practice, and the dependent variable was patient safety.

The instrument used was a structured questionnaire, consisting of: 1) Respondent characteristics (age, education, length of service), 2) A questionnaire on the integration of health education into nursing practice, and 3) A patient safety questionnaire (covering adherence to safety procedures, effective communication, risk prevention, and incident reporting). The instrument was tested for validity and reliability before use.

Data collection was conducted by distributing questionnaires to respondents in person or online after obtaining approval from the hospital and respondents. Data were analyzed using descriptive analysis to describe respondent characteristics and variable distribution, and bivariate statistical tests (e.g., Pearson or Spearman correlation tests) to determine the relationship between health education integration and patient safety. The significance level was set at $p < 0.05$.

Results

1. Respondent Characteristics

This study involved 120 nurses working in the hospital's inpatient unit. Respondent characteristics are presented in Table 1.

Table 1. Distribution of Respondent Characteristics (n = 120)

Characteristics	Frequency (n)	Percentage (%)
Age	46	38,3
20–30 years	52	43,3
31–40 years	22	18,4
> 40 years		
Gender	38	31,7
Male	82	68,3
Female		
Last Education	34	28,3
D3 Nursing	71	59,2
S1 Nursing	15	12,5
Nursing Profession		
Work Period	41	34,2
< 5 years	79	65,8
≥ 5 years		

2. Integration of Health Education in Nursing Practice

Integration of health education is measured based on the frequency and consistency of nurses in providing education to patients and families.

Table 2. Level of Integration of Health Education in Nursing Practice

Category	Frequency (n)	Percentage (%)
Good	68	56,7
Sufficient	39	32,5
Poor	13	10,8

Total	120	100
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The results of this study indicate that more than half of respondents have a good level of integration of health education into nursing practice.

3. Patient Safety Level

Patient safety is measured through indicators of adherence to safety procedures, effective communication, risk prevention, and incident reporting.

Table 3. Patient Safety Level

Category	Frequency (n)	Percentage (%)
High	72	60,0
Medium	36	30,0
Low	12	10,0
Total	120	100

Most respondents indicated a high level of patient safety.

4. Relationship between Health Education Integration and Patient Safety

A bivariate analysis was conducted to determine the relationship between the integration of health education in nursing practice and patient safety.

Table 4. Relationship between Health Education Integration and Patient Safety

Health Education Integration	High Safety n (%)	Medium Safety n (%)	Low Safety n (%)	Total
Good	54 (79,4)	12 (17,6)	2 (3,0)	68
Sufficient	16 (41,0)	19 (48,7)	4 (10,3)	39
Poor	2 (15,4)	5 (38,5)	6 (46,1)	13
Total	72	36	12	120

Statistical test results showed a significant relationship between health education integration and patient safety ($p < 0.05$).

5. Correlation Analysis

A Pearson correlation test was conducted to determine the strength of the relationship between the two variables.

Table 5. Pearson Correlation Test Results

Variable	r	p-value
Integration of health education ↔ Patient safety	0,52	0,000

The correlation coefficient ($r = 0.52$) indicates a moderate positive relationship, meaning that the better the integration of health education into nursing practice, the higher the level of patient safety. Overall, the study results indicate that: 1) the majority of nurses have well-integrated health education into nursing practice, 2) the level of patient safety is in the high

category, and 3) there is a positive and significant relationship between the integration of health education and patient safety.

Discussion

1. Integration of Health Education as a Pillar of Nursing Practice

The results show that the majority of nurses (56.7%) have well-integrated health education into nursing practice. This result reflects that educational practices have become part of daily nursing routines, which include systematically providing information to patients and families regarding disease conditions, preventing complications, and promoting healthy behaviors after treatment.

This finding aligns with the literature, which confirms that the integration of health education is not merely an additional activity but a central part of holistic nursing care focused on patient safety (Park & Yeom, 2025). This integration includes structured educational planning, the use of effective communication methods, and assessing patient understanding of the material presented.

Park and Yeom (2025) in their systematic review demonstrated that continuous patient safety education integrated into both the nursing curriculum and practice significantly contributes to improving nurses' clinical skills and knowledge (<https://pubmed.ncbi.nlm.nih.gov/40088618/>).

Consistency in educational delivery reflects a shift from a traditional reactive approach to a proactive, preventative approach, where nurses not only respond to health problems but also prevent them through the knowledge they provide to patients.

Furthermore, the integration of health education into nursing practice also

improves nurses' ability to engage in therapeutic communication—a crucial skill for understanding patient needs and developing appropriate educational strategies (Alotaibi et al., 2024).

This comprehensive review article confirms that effective communication between nurses and patients can influence post-educational intervention outcomes, including patient adherence to medical recommendations and safety measures (<https://doi.org/10.63278/jicrcr.vi.2511>).

2. Relationship between Health Education Integration and Patient Safety Levels

Analysis of the relationship between the integration of health education and patient safety revealed a significant positive correlation ($r = 0.52$; $p < 0.001$). This correlation indicates that the high frequency and quality of health education in nursing practice are closely related to higher levels of patient safety.

This is fully consistent with research showing that education provided to patients and families can increase their awareness of health risks and active involvement in their own care, thereby reducing adverse incidents (Exploring medical and nursing students' perceptions..., 2024).

Research from BMC Medical Education (2024) supports this finding by showing that nursing students' involvement in a patient safety course directly influenced their perceptions of the importance of safety in the clinical environment

(<https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-024-05348-8>).

This education not only increases students' knowledge but also shapes their behavior, making them more aware of potential clinical risks during practice.

Furthermore, consistency in health education delivery is associated with various aspects of patient safety, such as

adherence to standard procedures, interprofessional communication, prevention of nosocomial infections, and reduction of near-misses (Patient Safety Educational Interventions..., 2020).

This systematic review found that evidence-based, purpose-led learning interventions strengthen nurses' practical skills in applying patient safety principles (<https://pmc.ncbi.nlm.nih.gov/articles/PMC9190690/>).

3. The Role of Clinical and Simulative Education in Improving Competence

Structured clinical education, including simulated learning methods, has long been identified as an effective strategy for improving nurses' practical competence, particularly in high-risk situations. Real-life case simulations provide students and nurses with the opportunity to test their decision-making skills, interpersonal communication skills, and safety responses without endangering actual patients.

Relevant studies show that scenario-based simulations for patient safety help foster better clinical preparedness and reduce professional anxiety when facing complex problems (Silvania & Lisum, 2024). These results emphasize that learning experiences that approximate real-world situations are more effective than traditional, theoretical learning methods (<https://doi.org/10.31004/prepotif.v8i3.36443>).

Furthermore, clinical simulations are associated with increased nurse understanding of the importance of rapid and appropriate decision-making amidst the clinical uncertainty that often occurs in inpatient units. This is particularly relevant in the context of patient safety, where delays or errors in decision-making can have fatal consequences.

4. Interprofessional Education as a Catalyst for Team Collaboration

Interprofessional collaboration is a crucial aspect of improving patient safety. Interprofessional education (IPE) is a learning approach in which students from different health professions learn together to understand their respective roles and improve teamwork coordination.

Lahagu and Endah Nurhidayah (2023) found that IPE can strengthen collaborative relationships between nurses and other healthcare professionals, such as doctors and pharmacists, ultimately improving the team's response to patient safety issues (<https://doi.org/10.55644/jkc.v4i02.117>).

This is important because miscommunication across professions is often a leading cause of adverse patient outcomes.

Ruth and Bahari (2024) also emphasized that patient safety education cannot exist in silos but needs to be integrated into a collaborative learning process that reflects the realities of healthcare

(<https://doi.org/10.20473/ijpsq.v1i1.56591>). This approach supports a strong safety culture where all healthcare professionals share a shared understanding of risks and mitigation strategies.

5. The Influence of Patient Safety Culture on Clinical Practice

Patient safety culture plays a crucial mediating role between health education and patient safety outcomes in clinical settings. This study found that nurses working in environments that support a culture of safety tend to implement safety practices more consistently.

A strong safety culture is characterized by incident reporting without penalty, regular reviews of near-misses, and continuous learning from these incidents. Fitri Annisa et al. (2024) suggested that case-based seminars and reflection on clinical experiences have been shown to help nurses internalize patient safety principles and encourage safe behaviors in daily practice (<https://doi.org/10.65344/comers.v2i2.135>).

Agus Salim et al. (2024) also found that healthcare workers' knowledge of patient safety is closely related to the organization's safety culture, which in turn influences their adherence to safety standards

(<https://doi.org/10.31004/jkt.v5i4.34472>). This study confirms that without strong cultural support, education alone is insufficient to ensure optimal safety practices.

6. Challenges in Consistent Health Education Integration

Although the majority of nurses demonstrated a good level of health education integration, 43.3% still fell into the adequate and inadequate categories. This situation indicates challenges in implementing consistent education across all service levels. Several factors may contribute, including high workloads, time

constraints, lack of in-service education resources, and variations in patient safety training received by nurses (Seriga & Che Hassan, 2023). This study noted that structural challenges within organizations often impact the extent to which nurses can optimally implement health education (<https://doi.org/10.59585/ijhs.v2i3.489>).

7. Practical Implications for Education and Healthcare Facilities

Based on the findings, several practical implications can be proposed:

- 1) Expanding patient safety education modules into formal education programs and providing ongoing training for professional nurses.
- 2) Strengthening a culture of patient safety in healthcare facilities, including risk management training, a non-punishable incident reporting system, and regular evaluation of safety practices.
- 3) Implementing clinical simulation and interprofessional learning as a regular part of the nursing curriculum and in-service training.
- 4) Continuous monitoring and evaluation of health education outcomes and their relationship to patient safety outcomes.
- 5) Advances in these four aspects will help bridge the gap between theory and practice and ensure that health education is effectively integrated into nursing practice.

Conclusion

This study demonstrates that integrating health education into nursing practice plays a significant role in improving patient safety. The results revealed that most nurses have effectively implemented health education in clinical practice, as reflected in their ability to provide clear, structured, and ongoing information to patients and families.

Integrated health education not only improves patient knowledge but also encourages active patient involvement in the care process, thereby reducing the risk of patient safety incidents.

The significant positive relationship between integrated health education and patient safety levels confirms that education is a key component in preventing healthcare errors. Consistent educational practices have been shown to support increased adherence to safety procedures, improve therapeutic communication, and strengthen a culture of patient safety in healthcare settings. Furthermore, the discussion indicates that health education supported by clinical learning methods, simulations, and interprofessional collaboration can improve nurses' competency in identifying and effectively managing patient safety risks.

However, challenges remain in the equitable implementation of health education, such as time constraints, nurse workloads, and variations in patient safety training. Therefore, organizational support is needed through strengthening policies, providing ongoing training, and developing a conducive safety culture. Overall, the integration of health education into nursing practice is an essential and sustainable strategy to improve the quality of care and patient safety in healthcare facilities.

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