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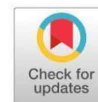
ORIGINAL ARTICLE

Nurses' Experiences in Implementing Patient Safety Programs in Inpatient Settings: A Qualitative Study



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Abstract

Background: Patient safety is a fundamental aspect of healthcare in hospital settings; however, implementing it remains challenging in nursing practice due to factors such as inadequate staffing, heavy workloads, poor communication, and limited resources. While previous studies have primarily focused on these structural and organizational barriers, there is limited understanding of nurses' experiences in implementing patient safety programs, particularly in inpatient settings.
Purpose: This study aimed to explore nurses' experiences in implementing patient safety programs in hospital inpatient settings.
Methods: A descriptive qualitative study was conducted among 22 ward nurses selected using purposive sampling. The inclusion criteria were nurses with at least one year of work experience and a minimum of a bachelor's degree in nursing or equivalent professional nursing qualifications. Data were collected through focus group discussions (FGDs) and analyzed using thematic analysis.
Results: Four main themes were identified: (1) understanding patient safety principles, (2) barriers to patient safety implementation, (3) leadership and organizational support for patient safety, and (4) technology as a facilitator of patient safety. Although nurses demonstrated an understanding of patient safety principles, they continued to encounter barriers, including variations in peer awareness of safety standards, workload constraints, and a blame culture. Furthermore, nurses reported anxiety and demotivation when reporting errors, highlighting the need for stronger leadership and organizational support. Finally, participants emphasized technology's role as a key facilitator in achieving patient safety goals.
Conclusion: Nurses' commitment, patient safety–related workplace culture, and the availability of innovative technology remain critical factors influencing the implementation of patient safety programs. Communication barriers, limited managerial support, and challenges in sustaining patient safety practices persist. Therefore, hospital leadership should strengthen systems and policies, improve resource planning, enhance support and supervision, and provide continuous training to improve patient safety programs.

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1. Introduction

Patient safety is a major component of healthcare and serves as a key indicator of the quality of care (Ahmed et al., 2025; Salih et al., 2021). Strong health systems are built on patient safety, which is essential for timely, equitable, and accessible patient-centered healthcare (World Health Organization [WHO], 2025). The Global Patient Safety Action Plan 2021–2030 outlines strategic steps to promote safety, including error prevention, transparent reporting and learning, standardization and best practices, technology and automation, patient engagement, and fostering a safe organizational culture (WHO, 2021). At the national level, patient safety action plans guide policy implementation, monitoring, planning, and resource allocation to improve the delivery of safe care and prevent harm (WHO, 2024). The level of healthcare advancement is also

fundamental to patient safety (Fukami & Nagao, 2022). However, patient safety remains a significant and growing global public health challenge, as ongoing harm from unsafe care continues to lead to increased mortality and disability in hospitals worldwide (Wake et al., 2021; WHO, 2021; WHO, 2024).

Available data indicate that approximately 134 million adverse events occur annually, contributing to around 2.6 million deaths in hospitals (WHO, 2024). In addition, an estimated 10% of patients experience adverse events during hospital stay (WHO, 2025). Common adverse events affecting patients across various healthcare settings, including medication errors and healthcare-associated infections, are largely attributable to healthcare professionals (Dhingra-kumar et al., 2021). However, significant gaps remain; one study found that only 35.2% of nurses had a positive perception of patient safety, particularly regarding staff adequacy, professional communication, and participation in quality improvement (Mihdawi et al., 2020). Similarly, another study reported that only 39.7% of nurses were actively engaged in quality improvement programs (Assaye, 2026).

In previous research, nurses rated 52.9% of safety procedures as effective in preventing errors, while 27.4% were perceived as posing no safety issues in clinical units (Mihdawi et al., 2020). These findings underscore the need to improve nurses' compliance with patient safety procedures. Inadequate staffing, environmental factors, and limited insight into personal and professional accountability have been associated with reduced levels of nursing care (Mills & Duddle, 2022). A gap persists in the implementation of patient safety programs among direct-care nurses. Research conducted in Iran indicates that several factors contribute to nurses' silence regarding patient safety, including a lack of participation in decision-making, differing perceptions of nurses' roles in care quality, inadequate staffing and facilities, ineffective communication, and hierarchical structures within hospitals (Hashemian et al., 2025). Similarly, research in Europe found that 40% of nurses reported poor work environments characterized by inadequate work-life balance and severe burnout, which contribute to high staff turnover and negatively affect the quality of care and patient safety (Aiken et al., 2024). In Indonesia, studies have shown that missed nursing care and adverse events significantly contribute to patient safety issues in hospitals (Putra et al., 2025). Contributing factors to reduced standard of nursing care include inadequate staffing, communication barriers, and challenges in identifying early signs of infection (Henderson et al., 2020). Collectively, these findings highlight persistent gaps in the implementation of patient safety practices and underscore the need for more comprehensive strategies to support nurses in delivering safe and high-quality care.

Healthcare leaders have a responsibility to improve patient safety by reducing and preventing harm (WHO, 2025). Leadership plays a crucial role in encouraging nurses in inpatient wards to prioritize patient safety (den Breejen-de Hooge et al., 2021). Nurses who provide direct patient care play an essential role in identifying safety risks, preventing errors, and supporting patient recovery (Machitidze et al., 2023). They are central to recognizing potential threats to patient safety due to their direct responsibility for care delivery (Hashemian et al., 2025; Kakemam et al., 2022), including preventing risks such as healthcare-associated infections and ensuring effective communication (Hashemian et al., 2025). All healthcare professionals should be aware of the importance of implementing patient safety programs, while nurse managers must demonstrate strong leadership, commitment, and trust (Fukami & Nagao, 2022). Previous studies indicate that effective leadership plays a critical role in shaping safety attitudes and fostering a strong patient safety culture. Teamwork climate, working conditions, and stress recognition have been identified as important factors influencing patient safety (Huang et al., 2024). Therefore, nurse managers play a key role in supporting nurses who deliver direct patient care. Despite the establishment of patient safety systems and procedures, gaps in awareness and compliance persist (Ashokka et al., 2026).

While prior quantitative studies have extensively examined these issues, a notable gap remains. Adverse patient incidents, unfavorable work environments, missed nursing care, and the barriers nurses encounter have not been sufficiently explored from the perspective of nurses' lived experiences. This gap highlights the need for qualitative research to examine how patient safety programs are implemented in practice. By capturing nurses' perspectives, qualitative approaches can provide deeper insights into the real-world challenges they face. Given that patient volume and mortality rates remain high in inpatient settings, this study specifically

focuses on inpatient care. Therefore, this study aimed to explore nurses' experiences in implementing patient safety programs in inpatient hospital settings.

2. Methods

2.1. Research design

A descriptive qualitative design was used to explore nurses' experiences in implementing patient safety programs in inpatient wards. This approach is appropriate for examining real-world phenomena and capturing participants' perspectives in a natural context. It enables the identification and analysis of themes and patterns emerging from narrative data (Polit & Beck, 2018).

2.2. Setting and participants

This study was conducted among nurses working in inpatient wards in a public hospital in Medan, Indonesia. Participants were all women and were recruited based on the following inclusion criteria: at least one year of work experience and at least a bachelor's degree in nursing or a professional nursing qualification. The exclusion criteria included head nurses and nurses who were currently undergoing inpatient orientation. Eligible participants were identified and provided with their names and telephone numbers.

Participants were selected using a purposive sampling method. This sampling technique was chosen to recruit a diverse group of nurses from various inpatient wards involved in implementing the patient safety program, enabling exploration of different perspectives and themes. A total of 22 nurses participated in the study, and data saturation was achieved when no new themes emerged.

2.3. Data collection

Data were collected from October 2021 to February 2022 through focus group discussions (FGDs). The FGD guide was developed in collaboration with the research team and validated by experts in qualitative studies and nursing management. The guide was piloted with three nurses who had characteristics similar to those of the study participants. The results indicated that the questions were clear and required no modifications in wording, number, or order.

Participants meeting the inclusion criteria were contacted by telephone, invited to participate, and provided informed consent prior to data collection. FGDs were conducted online via Zoom due to COVID-19 safety measures. Each session lasted approximately 60 minutes and was audio-recorded, with a moderator assisting the research team throughout the discussions.

Participants were grouped based on similar knowledge and educational backgrounds to form relatively homogeneous groups with shared experiences in patient safety implementation. Each FGD consisted of 4 to 7 participants, and a total of four sessions were conducted. FGDs were selected as participants worked in teams, allowing their experiences to be explored through interaction and discussion. This also enabled the researchers to observe their responses, thought processes, and differing perspectives on patient safety implementation. The discussion began with a brief explanation of patient safety to facilitate understanding and encourage participants to share their experiences. The complete set of FGD questions is presented in Table 1.

Table 1. Focus group discussion (FGD) questions

The FGD Questions
1. Can you describe your experiences in implementing patient safety practices in your ward?
2. How do you understand patient safety in your daily nursing practice?
3. What challenges or barriers have you experienced when implementing patient safety programs?
4. How does leadership and organizational support influence your ability to implement patient safety?
5. How do patient safety practices affect your work and patient care outcomes?
6. What role does technology play in supporting patient safety in your workplace?
7. What suggestions do you have for improving patient safety in the future?

During the discussions, field notes were taken to capture key points and contextual information, and clarification was sought as needed to ensure an accurate understanding of participants' responses. Data collection continued until saturation was achieved, defined as the

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point at which no new themes emerged. All recordings were transcribed verbatim, and identifying information was removed to ensure confidentiality.

2.4. Data analysis

Data were analyzed using thematic analysis as described by Braun and Clarke (2006). The analysis involved six steps, including (1) familiarization with the data by repeatedly reading the transcripts obtained from participants to gain an in-depth understanding; (2) generating initial codes by transcribing the data and systematically coding the entire dataset to identify meaningful units; (3) searching for themes by grouping researcher-determined codes into relevant themes; (4) reviewing themes by verifying their alignment with the transcripts and codes; (5) defining and naming themes by clearly describing each theme; and (6) producing the report by organizing the resulting themes along with corresponding quotations (Ahmed et al., 2025; Braun & Clarke, 2006). The study reporting followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist, a 32-item guideline covering key aspects of qualitative studies.

2.5. Trustworthiness/rigor

The trustworthiness/rigor of the study was established through the criteria of credibility, dependability, confirmability, and transferability (Polit & Beck, 2018). Credibility was achieved through recording FGDs with participants on patient safety programs and transcribing the discussions. In addition, to foster mutual trust, reduce bias, and obtain comprehensive data, researchers interacted with participants over an extended period. Triangulation was applied by combining field observations and FGD data. FGD transcripts were returned to participants for verification of their accuracy and consistency with their experiences as part of the member-checking process. The research team then proceeded to code and analyze the data. The researchers also verified the data's accuracy through field checks, and the findings were consistent with actual conditions. This process helped establish a more open and trusting relationship between the researchers and participants.

Dependability was achieved through consistent data collection and analysis procedures applied throughout the study. Multiple researchers reviewed the data and generated themes to reduce bias. The research process was audited by a supervisor, beginning from problem identification, data collection, selection of data sources, and data analysis. Confirmability was established by ensuring that the findings reflected the objectivity, accuracy, and relevance of the participants' data. An audit trail was maintained to document all stages of the analysis. Researcher bias was documented using reflexive notes during the FGDs. Peer debriefing was also conducted at the end of each data collection cycle, and inter-rater coding comparisons were performed to ensure consistency. The interpretation of the data reflected participants' voices and actual conditions as captured in the transcripts, rather than researchers' assumptions. Moreover, transferability was addressed by providing sufficient context for the study setting and participants, enabling readers to assess the applicability of the findings to other contexts.

2.6. Ethical considerations

Ethical approval was obtained from the Faculty of Nursing, Universitas Indonesia (No: Ket-215/UN2.F12.D1.2.1/PPM.00.02/2021). Permission was also obtained from the hospital director, nurse managers, and head nurses. Participants provided informed consent after being fully informed about the study objectives, procedures, potential risks and benefits, and their right to withdraw at any time without any consequences. Participants were assured of the confidentiality and anonymity of the information provided and consented to the publication of the results.

3. Results

3.1. Participants' characteristics

A total of 22 nurses participated in the study, with a mean age of 31 years. All participants were female, with an average length of service of six years. The majority held professional nursing qualifications, and most worked in direct patient care. Detailed characteristics of the participants are presented in Table 2.

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Table 2. Characteristics of the participants (n=22)

Participant	Age	Gender	Education	Years of Experience	Main Role
P1	24	Female	Bachelor's degree	4	Direct patient care
P2	25	Female	Bachelor's degree	3	Direct patient care
P3	26	Female	Bachelor's degree	5	Direct patient care
P4	26	Female	Bachelor's degree	6	Direct patient care
P5	30	Female	Professional Nurse	6	Direct patient care
P6	31	Female	Professional Nurse	9	Direct patient care
P7	31	Female	Professional Nurse	9	Direct patient care
P8	32	Female	Professional Nurse	10	Direct patient care
P9	32	Female	Professional Nurse	12	Direct patient care
P10	32	Female	Professional Nurse	5	Direct patient care
P11	32	Female	Professional Nurse	5	Direct patient care
P12	32	Female	Professional Nurse	5	Direct patient care
P13	33	Female	Bachelor's degree	5	Direct patient care
P14	33	Female	Professional Nurse	6	Direct patient care
P15	34	Female	Professional Nurse	5	Direct patient care
P16	40	Female	Professional Nurse	10	Team leader
P17	39	Female	Professional Nurse	10	Team leader
P18	42	Female	Professional Nurse	10	Team leader
P19	46	Female	Professional Nurse	10	Team leader
P20	21	Female	Professional Nurse	1	Direct patient care
P21	21	Female	Professional Nurse	1	Direct patient care
P22	21	Female	Professional Nurse	1	Direct patient care

3.2. Qualitative theme

The data analysis revealed nine sub-themes and four main themes: (1) understanding patient safety principles, (2) barriers to patient safety implementation, (3) leadership and organizational support for patient safety, and (4) technology as a facilitator of patient safety. The themes are illustrated in Figure 1.

3.2.1 Theme 1: Understanding patient safety principles

Knowledge is a fundamental component in implementing patient safety programs. However, some nurses still lack a thorough understanding of patient safety. Nurses' awareness of patient safety goals and issues is essential for effective implementation on the wards. The implementation of a patient safety program reflects the overall quality of nursing care. This theme is therefore divided into two sub-themes: awareness of patient safety goals and understanding of patient safety issues in clinical practice.

3.2.1.1 Sub-theme 1: Awareness of patient safety goals

Participants reported that knowledge of patient safety goals includes six key targets. These targets serve as policy guidelines for patient care and represent essential competencies that should be introduced during orientation and reinforced throughout employment. Most nurses demonstrated a good understanding of the patient safety programs, as reflected in the following statements:

> *I implement the patient safety programs by paying attention to patient safety goals, which is standard practice in every hospital, and nurses' competency. For example, if a patient's identification tag is damaged, I replace it, and we always ensure the safety of elderly patients to reduce the risk of falls.* (P21)

> *We recognize the importance of patient safety and the need to implement patient safety goals. However, honestly, sometimes we overlook patient safety standards. We strive to prevent unexpected events involving patients and to maintain patient safety, although we recognize there is still room for improvement.* (P14)

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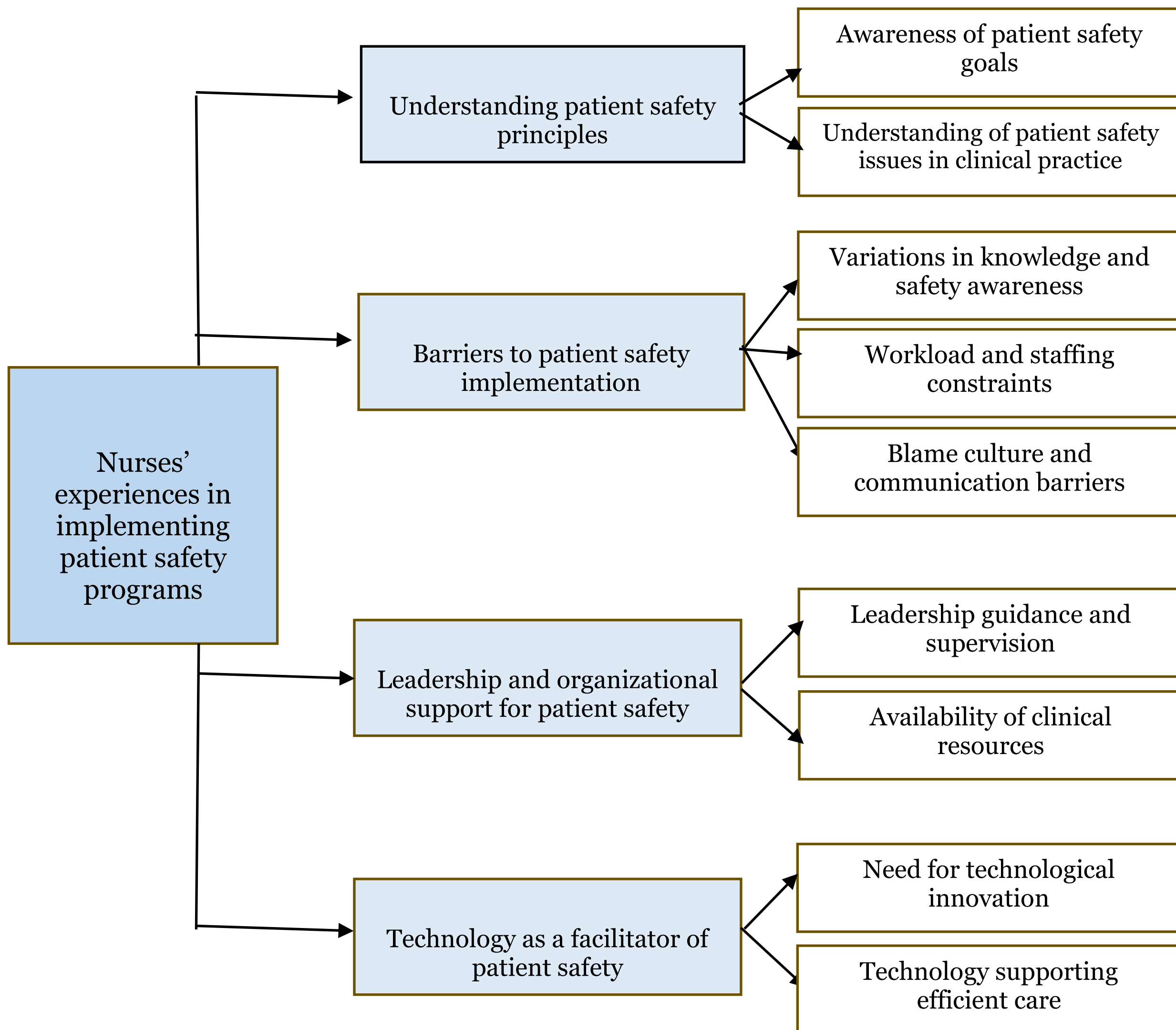

Figure 1. Thematic structure of nurses' experiences in implementing patient safety programs in inpatient settings

3.2.1.2 Sub-theme 2: Understanding of patient safety issues in clinical practice

Participants demonstrated an understanding of patient safety issues encountered in clinical practice. They acknowledged that such issues are often unavoidable and emphasized the importance of close patient monitoring to minimize risks. While most nurses demonstrated an understanding of patient safety issues, some also highlighted the challenges in preventing them, as illustrated in the following statements:

> *I realize that patient safety issues are still frequently encountered, such as adverse events, infections, and communication issues. We cannot avoid all of these issues, ma'am.* (P9)

> *I understand that patient safety is our responsibility when providing care. Patient safety issues that are still frequently encountered in this ward include adverse events, healthcare-associated infections, and poor communication.* (P6)

3.2.2 Theme 2: Barriers to patient safety implementation

Participants reported that barriers to patient safety implementation include variations in knowledge and safety awareness, workload and staffing constraints, and a blame culture and communication barriers, all of which contribute to suboptimal patient safety efforts. They also noted that when an unexpected incident occurs with a patient, nurses may blame the previous shift, leading to demotivation and anxiety. Insufficient close monitoring was also identified as

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another contributing factor to patient safety incidents. Three sub-themes were identified as follows:

3.2.2.1 Sub-theme 1: Variations in knowledge and safety awareness

Participants indicated that differences in nurses' understanding of patient safety implementation still exist, even though all nurses had received information on patient safety. They highlighted that this variation affects the consistent application of patient safety practices, as reflected in the following statements:

> *I realize that what nurses know about patient safety cannot yet be fully implemented effectively in this room. Nurses' reluctance to report unexpected events or risks of injury to patients still occurs.* (P1)

> *Nurses are largely unaware of the impact that neglected patient health issues or missed interventions can have on patient safety during hospitalization. They can even prolong a patient's hospital stay. (*P5)

3.2.2.2 Sub-theme 2: Workload and staffing constraints

Participants reported that heavy workloads limited the time available to monitor patients' conditions. They described their experiences of maintaining patient safety under these conditions as being affected by fatigue, a lack of energy, incomplete patient monitoring, and limited medical resources, as stated by the participants below:

> *I feel that our efforts are sometimes suboptimal because the patient volume is too high to effectively manage early detection and prevent patient safety issues. Feeling tired and lacking energy caused me to lose focus while providing nursing care.* (P13)

> *With so many patients, continuously monitoring everyone leaves insufficient time for other necessary tasks. To maximize efficiency, we sometimes only monitor patients with moderate-to-high dependency levels. We often take action only after a patient safety issue arises, such as when a patient develops phlebitis or a urinary tract infection.* (P8)

3.2.2.3 Sub-theme 3: Blame culture and communication barriers

Participants emphasized that commitment to preventing adverse events, such as infections in the ward, needs to be strengthened. They highlighted the importance of a supportive work culture for ensuring patient safety, including shared responsibility for monitoring patients' conditions and effective communication. However, a blame culture and communication barriers were still evident, as reflected in the following statements:

> *I once had a disagreement with the morning nursing team. I was on the afternoon shift, and the patient had not been properly observed during the morning. This resulted in a situation of mutual blame, and a sense of indifference still occurs among us.* (P2)

> *I feel that communication among nurses needs improvement; we should avoid blaming one another at work. However, due to our heavy responsibilities, it is sometimes unavoidable.* (P15)

3.2.3 Theme 3: Leadership and organizational support for patient safety

Participants reported that leadership support is essential for implementing patient safety programs. This includes providing motivation, facilitating open communication with staff, and ensuring adequate facilities and equipment, all of which are critical for safe patient care. They also stated that leadership direction, supervision, monitoring, and motivational support are important for achieving high-quality services. Nurses require ongoing management support to uphold patient safety standards. The findings are divided into two sub-themes:

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3.2.3.1 Sub-theme 1: Leadership guidance and supervision

Participants indicated that the management team supports nurses in implementing patient safety through supervision, monitoring, and motivation. They highlighted the importance of continuous guidance and leadership support, as reflected in the following statements:

> *Support from the head of the ward is always available, including assistance with medical equipment, regular meetings, and opportunities to discuss problems. We feel that we are not dealing with the patients alone, but we really need motivation from our leaders.* (P16)

> *I feel that providing patient care requires support and motivation from leadership, especially since we have a great responsibility to ensure patient safety, for example, preventing adverse events, particularly in patients with a high level of dependency. We need constant support from leadership.* (P22)

3.2.3.2 Sub-theme 2: Availability of clinical resources

Participants stated that managers support patient safety by facilitating the availability of equipment. This support enables nurses to implement patient safety programs more effectively. However, they also expressed dissatisfaction with the condition and usability of some equipment, despite the availability of vital signs monitoring devices, as illustrated in the following statements:

> *Motivation is always provided by the head nurses, especially during the COVID-19 pandemic. However, some equipment is sometimes damaged or runs out of batteries, which affects our ability to complete tasks more efficiently.* (P17)

> *I realize that the conditions in this inpatient are affected by damaged equipment, which can lead to patient safety problems. This situation makes me dissatisfied with my work. We need support from leaders, including access to complete, fully functional medical equipment.* (P6)

3.2.4 Theme 4: Technology as a facilitator of patient safety

Participants reported that technology supports the implementation of patient safety programs by improving work effectiveness. They highlighted that technology helps minimize errors by improving data accuracy and streamlining workflows in the ward. The findings also suggest that implementing a patient safety program requires not only systems and human resources but also adequate technological support. Two sub-themes were identified: the need for technological innovation and technology supporting efficient care.

3.2.4.1 Sub-Theme 1: Need for technological innovation

Participants emphasized that the use of technology became particularly important during the pandemic, as nurses often faced uncertainty regarding the onset of infection-related problems. They also highlighted the need for non-contact technological solutions that enable effective patient care while minimizing physical interaction. In addition, participants expressed the continued need for innovative technologies in the post-pandemic period to support patient safety, as illustrated in the following statements:

> *Of course, we need it (the technology) in a pandemic situation. We need technology that does not require direct contact with the patient during care.* (P8)

> *Sophisticated tools are needed so that nurses' perceptions in determining the initial incidence can be more accurate, allowing us to maintain patient safety.* (P20)

3.2.4.2 Sub-theme 2: Technology supporting efficient care

Participants reported that technology facilitates their work, making the tasks easier and increasing job satisfaction. They noted that technology supports patient safety programs by improving efficiency, although the need for adequate resources continues to grow. The participants provided the following statements:

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In my experience, using technology has greatly sped up patient data entry compared to manual methods. Although the equipment in the ward sometimes malfunctions, using it remains more effective given the high patient volume. (P12)

I agree with the other nurses that technology has made our work easier and assisted with our tasks, despite some remaining obstacles. Sometimes the equipment breaks down unexpectedly during use, forcing us to borrow from another ward. (P19)

4. Discussion

This study aimed to explore nurses' experiences of patient safety program implementation in hospital inpatient settings. Four main themes were identified from the data, which show how participants navigated their experiences, including (1) understanding patient safety principles; (2) barriers to patient safety implementation; (3) leadership and organizational support for patient safety; and (4) technology as a facilitator of patient safety. Further discussion on each theme is presented in the following sections.

4.1 Understanding patient safety principles

Patient safety is a fundamental component of healthcare quality, with Patient Safety Goals serving as key guidelines for delivering safe nursing care. These goals provide a structured framework for implementing patient safety practices in clinical services (Despotou et al., 2020). Consistent with previous research, nurses' knowledge of the six patient safety goals has improved over time (Kheder, 2018). However, effective implementation remains highly dependent on nurses' clinical competence. Evidence suggests that nurses with strong clinical knowledge, technical skills, and a positive professional attitude are more likely to consistently apply patient safety standards, including accurate patient identification, safe medication administration, effective communication, infection prevention, and fall risk management (Risanty & Buwono, 2026). The findings of this study indicate that nurses generally demonstrate awareness of patient safety principles, particularly regarding patient safety goals and routine clinical practices. This reflects the cognitive dimension of patient safety, in which nurses are familiar with institutional guidelines and recognize their importance in maintaining the quality of care. These findings align with previous research highlighting nurses' central role as the primary link among patients, doctors, and other healthcare professionals (Kwame & Petrucka, 2021).

However, despite this awareness, the study's findings also reveal that nurses understand patient safety issues encountered in clinical practice, such as adverse events, healthcare-associated infections, and communication challenges. A previous study has shown that knowledge in specific areas, such as infection control, remains inadequate among nurses (Askeroğlu et al., 2022). Similarly, only 46.2% of nurses can recognize and respond to adverse events (Han et al., 2020), and awareness may not always translate into positive perceptions or adherence to institutional policies and procedures (AL-Mugheed et al., 2022). These findings suggest that while foundational knowledge of patient safety exists, it is not consistently translated into practice. This discrepancy reflects the complexity of implementing patient safety, where knowledge alone is insufficient without continuous reinforcement, supervision, and organizational support. Therefore, strengthening nurses' understanding of patient safety principles, particularly their application in clinical practice, remains a critical step in improving patient safety outcomes.

4.2 Barriers to patient safety implementation

This study showed that a culture of blame among nurses in the workplace is still evident and remains a significant barrier to implementing patient safety. Previous research findings have shown that non-compliance with clinical guidelines, poor communication, fear of being blamed, inadequate documentation, distrust of reporting systems, and high workload hinder the reporting of adverse events (Tolobisa et al., 2026). In line with these findings, low reporting of adverse events was also found in another study (Aouicha et al., 2021), accompanied by inadequate knowledge of patient safety incidents and a lack of commitment and motivation to report them (Hamed & Konstantinidis, 2022; Tolobisa et al., 2026). However, this contrasts with studies reporting improvements in non-blame culture, error reporting, and leadership support (Badran et al., 2026).

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In addition, variations in nurses' knowledge and safety awareness were identified as an important barrier. Although nurses have been exposed to patient safety principles, differences in understanding and application persist in clinical practice. This inconsistency may lead to suboptimal adherence to patient safety standards and increase the risk of errors (AL-Mugheed et al., 2022; Askeroğlu et al., 2022; Han et al., 2020). In line with previous findings, inadequate knowledge of patient safety incidents and lack of awareness remain challenges in ensuring consistent implementation (Tolobisa et al., 2026).

The findings also revealed that, as healthcare professionals, nurses are often the first to witness medical errors; yet, a blame-oriented environment discourages open communication and reporting. The lack of psychological safety prevents nurses from voicing concerns and reporting adverse events without fear of negative consequences (Badran et al., 2026). As reflected in the findings, such conditions contribute not only to underreporting but also to nurses' emotional distress, reduced job satisfaction, and decreased engagement in patient safety practices. These situations can lead to work stress and demotivation among nurses. Previous research indicates that work stress negatively affects perceptions of patient safety culture (Zabin et al., 2025) and may lead to emotional exhaustion, depersonalization, and a diminished sense of professional accomplishment. Furthermore, these conditions can affect patient safety competencies (Ma et al., 2025), while a punitive culture may increase negative emotional responses (Lee et al., 2025). A study by Buivydienė et al. (2025) reported that nearly one-third of nurses experienced stress or depression, and almost half reported anxiety, particularly among nurses with heavy workloads. Despite this, support for managing job stress remains limited and is primarily focused at the individual level rather than through organizational interventions.

The findings also highlight workload as a major barrier to patient safety. Previous research has shown that a large number of patients contributes to excessive workload (Janatolmakan & Khatony, 2022), while insufficient staffing negatively affects patient outcomes, increases fatigue, reduces motivation, and limits professional performance (Žiaková et al., 2023). Creating a supportive work environment, both physically and psychologically, is essential to reducing burnout at work (Ziarukh & Sabir, 2024). Therefore, nurses emphasized the need for leadership support in monitoring and motivating staff. In addition, ineffective management and lack of resources, including inadequate equipment, have been identified as factors contributing to non-compliance with patient safety standards (Janatolmakan & Khatony, 2022). Nurses' awareness is also influenced by their attitudes toward patient safety standards, which can shape patient safety culture. Overall, these findings indicate that gaps remain in the implementation of patient safety programs, highlighting the need to strengthen organizational policies, resource allocation, and supportive systems.

4.3 Leadership and organizational support for patient safety

Leadership support is key to the successful implementation of patient safety programs. However, barriers remain related to human factors, including teamwork and nurse workload, as well as management-related factors. This is consistent with other research showing that positive working relationships between nurses and managers have the greatest impact on nurses' perceptions of care quality and patient safety. However, personal relationships between nurses and managers do not necessarily have a positive impact (Tlhako et al., 2025). Working relationships are part of patient safety culture and are reflected in teamwork during clinical practice.

One form of managerial support for patient safety is teamwork. Research shows that teamwork has the highest average positive response rate (Serongwa & Matlhaba, 2025). Other studies have also shown that teamwork within units is generally good and positively perceived by nurses (Henderson et al., 2020; Inácio & Rodrigues, 2022). A positive attitude toward teamwork and effective communication has been shown to reduce infections (Alanazi et al., 2022). Effective communication within teams and a shared sense of responsibility are essential for maintaining patient safety. However, these efforts may be limited when staffing is insufficient to manage the workload (Aouicha et al., 2021).

The large number of patients contributes to excessive workload among nurses (Janatolmakan & Khatony, 2022), which may limit the effectiveness of supervision and patient safety practices. Effective communication within the work team and an adequate number of nursing staff can help reduce patient safety incidents. However, workload remains a challenge in implementing patient

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safety measures. Support, supervision, and adequate resources can help address the challenges nurses face in ensuring patient safety.

In this study, nurses stated that ward leaders need to monitor and motivate staff to maintain patient safety. Managers can motivate nurses through rewards and recognition (Gaughan et al., 2021) and by sharing information about barriers to patient safety practices (McAlearney et al., 2022). In line with previous findings, leadership competence and managerial support do not always contribute positively to care quality and patient safety (Tlhako et al., 2025), highlighting the need for more effective leadership strategies. Managers play a role in supervision, work motivation, open communication, and recognition, which can improve patient safety, performance, and nurse satisfaction.

In addition to leadership guidance, the availability of clinical resources is a critical component of organizational support for patient safety. Nurses in this study emphasized the importance of adequate, functional equipment and sufficient clinical resources to support safe patient care. Limited or malfunctioning equipment may hinder patient monitoring and reduce the effectiveness of patient safety practices, highlighting the need for consistent resource provision and maintenance (Janatolmakan & Khatony, 2022). Nursing managers can also support the implementation of technology, including AI, to improve patient safety while protecting professional integrity and public trust. Continued progress in patient safety depends on evidence-based practices supported by strong managerial leadership, as also reflected in this study, where leadership guidance and support were essential for effective patient safety implementation (Glarcher & Vaismoradi, 2026).

4.4 Technology as a facilitator of patient safety

Nurses expressed the need for successful implementation of patient safety programs, particularly due to dissatisfaction with existing monitoring tools. In line with other research, nurses' dissatisfaction with nursing care may be related to the need for more effective technology to prevent infection (Lee et al., 2018). Technology is an important tool for supporting nurses in implementing patient safety programs. Research has shown that technological innovation positively influences job satisfaction (Vainieri et al., 2020), which, in turn, is associated with improved organizational performance, effectiveness, and efficiency in the digital era (Putriyadi et al., 2020). Nurses also demonstrate a positive inclination toward using new technologies to enhance job satisfaction and performance (Fadel et al., 2020).

The findings of this study also highlight the need for continuous technological innovation to support patient safety practices. Nurses' negative perceptions of existing tools suggest that current systems may not fully meet clinical needs, underscoring the importance of developing more advanced, user-friendly technologies, such as artificial intelligence (AI). Currently, AI-based healthcare technology offers a viable option for enhancing patient monitoring and supporting safer clinical decision-making, thereby mitigating patient safety risks and improving core patient safety competencies (Doyon & Raymond, 2024). Incident reporting systems should also accommodate technology-related errors, including AI-related incidents, and distinguish between human error and system failure to maintain trust in the technology (Glarcher & Vaismoradi, 2026). The results of this study also demonstrate the importance of digital healthcare technology in ensuring patient safety, improving the quality of medical services, and optimizing nurses' work processes (Fayzilloyevna, 2026). Nurses' negative perceptions of existing technology indicate a need for ongoing technological innovation, including AI. Such technologies can enhance clinical awareness and decision-making, while improved system support may increase nurses' job satisfaction and performance, ultimately strengthening patient safety outcomes.

5. Implications and limitations

This research has implications for nurses, as patient safety programs can strengthen the work climate, motivation, commitment, leadership support, and availability of healthcare equipment. In addition, these programs can help establish a patient safety culture based on recognized standards, which contributes to improving patient and nurse performance and satisfaction. Therefore, nurses can provide care in accordance with hospital patient safety standards aligned with international guidelines. This approach contributes to the development of comprehensive and holistic healthcare policies and highlights the need for innovative tools to support the quality of patient safety programs. The implications for education include strengthening the conceptual

and theoretical foundations of patient safety programs and supporting their integration into policy development and into academic and professional curricula.

However, this study has limitations. The data collection process was conducted during the COVID-19 pandemic. The FGDs were conducted online using Zoom, which made it difficult to observe participants' responses and may have introduced bias. This study was also limited to a single setting, and all participants were female. The data may not fully capture the complexity of patient safety implementation. Therefore, the findings may not be generalized to other hospital settings due to the study's limited scope. Despite these limitations, this study provides valuable insights into nurses' experiences implementing patient safety programs and contributes to understanding patient safety practices in hospital settings. Future research should include multiple locations and more diverse participants, including both genders, to explore the implementation of patient safety programs better. Further exploration of patient safety programs at the nursing managerial and student levels is also recommended.

6. Conclusion

Four themes were identified in this study regarding nurses' experiences and expectations in achieving patient safety, including understanding patient safety principles, barriers to patient safety implementation, leadership and organizational support for patient safety, and technology as a facilitator of patient safety. Self-awareness, effective communication, and work commitment among nurses need to be strengthened to support the development of effective patient safety programs. In addition, innovative technologies are required to help nurses implement patient safety programs more effectively. Hospital leaders are also encouraged to strengthen policies and systems to support patient safety program development, and the availability of innovative medical devices may facilitate effective implementation. Furthermore, educational institutions are expected to strengthen patient safety concepts and theories, grounded in research findings, for application in clinical practice.

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Author contribution

All authors (DA, SS, HH, and AAK) contributed to the study design, data collection, data analysis, and interpretation of results. All authors contributed to the preparation of the manuscript.

Conflict of interest

The authors declare no competing interests.

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Declaration of Use of AI in Scientific Writing

The authors declare that generative AI and AI-assisted technologies (Grammarly, QuillBot) were used to support language editing and grammatical refinement of the manuscript. The authors take full responsibility for the final content and affirm adherence to ethical standards in scientific writing.

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