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Patient Safety Attitudes Among Intensive Care Unit Nurses In An Indonesian Islamic Hospital: A Mixed-Methods Study

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Abstract

Background: Patient safety culture plays a crucial role in intensive care units (ICUs), where nurses play a central role in ensuring safe and quality care. Evaluation of patient safety attitudes in nurses is important to reduce medical errors and improve service quality. *Objective:* This study aims to evaluate patient safety attitudes in nurses in the ICU of islamic hospital and propose a strategy for improvement based on the Theory of Planned Behavior (TPB). Methods: Mixed-methods with sequential explanatory model approach, using the Safety Attitudes Questionnaire (SAQ-INA). Quantitative data from ICU nurses were complemented by qualitative interviews, analyzed using the TPB framework. The number of respondents in this study was 14 respondents from both quantitative and qualitative research. Results: ICU nurses showed a positive attitude with high scores on the teamwork climate (82.7%), safety climate (76.3%), and job satisfaction (90.4%). However, low scores on stress recognition (61.6%), unit management perception (66.8%), hospital management (68.6%), and working conditions (74.4%) indicate challenges such as high workload, staff shortages, and lack of management support. The qualitative findings emphasize the need for non-punitive reporting and collaboration between professions. Conclusion: ICU nurses are strongly committed to patient safety, but stress and resource limitations hinder them. Recommendations include stress management training, non-punitive reporting systems, management engagement, and resource optimization to strengthen patient safety attitudes.

Keyword: Patient Safety Attitudes, ICU Nurses, Safety Attitudes Questionnaire, Theory of Planned Behaviour

INTRODUCTION

Patient safety culture has become a major focus in the healthcare sector and has been getting attention in various countries in the last decade caution (Olesen et al., 2024). Patient safety culture can be understood as a set of values, attitudes, beliefs, and behaviors shared by healthcare providers in the process of ensuring patient safety (Huang et al., 2022). To improve patient safety, an understanding of patient safety culture is indispensable to improve the values, attitudes and behaviors of the workforce that are undesirable such as miscommunication about undesirable events and maintain the quality of care (Yesilyaprak& Demir Korkmaz, 2023)

Extensive efforts are currently being made to improve patient safety and the quality of care in hospitals. Various developed countries have adopted the "Quality-Safety" paradigm, replacing the previous "Quality" approach. This concept includes consistently improving the quality of care as well as maintaining patient safety. Safety has emerged as a global concern,

including in healthcare institutions (Mandriani et al., 2019). In response to this challenge, the World Alliance for Patient Safety was established in 2004 by the World Health Organization (WHO), an initiative that collaborates with various countries to improve patient safety in healthcare facilities (Hanafi, 2020).

Regulation of the Minister of Health No.11 of 2017 concerning Patient Safety in Hospitals, issued by the Ministry of Health of the Republic of Indonesia, serves as the main standard for patient safety practices in Indonesian hospitals (Kemenkes, 2017). This regulation provides guidance for hospital management in applying the principles of patient safety across the board. Although hospitals in Indonesia strive to improve patient safety, the success of these efforts depends on hospital management's understanding of patient safety principles (Hanafi, 2020).

Several patient safety programs have been successfully launched in the United States that have helped change a perspective. One of them is an effort to create a culture of patient safety, requiring teamwork, better leadership support, and changing the focus of individual blaming behavior into a weakness of a system (Ahmed et al., 2023). Despite global efforts to reduce harm to patients, it remains a significant public health challenge, ranking at the top among the leading causes of disability and death worldwide (Abuosi et al., 2022). Every year, about 421 million people are hospitalized worldwide, 42.7 million of whom experience adverse events during hospitalization. It is estimated that 1 in 10 patients admitted to advanced healthcare facilities have an injury, with at least 50% of these cases preventable (Yayehrad et al., 2024). More than 1 in 10 patients continue to be harmed by safety negligence during their treatment. Globally, unsafe care results in more than 3 million deaths each year. In developing countries, as many as 4 out of 100 people die from unsafe care and A study found that 38.8% of adverse events occurred during 100 days in the ICU (Ein-Gal et al., 2023).

In recent times, the safety of patients of all age groups has become of paramount importance in relation to the quality of healthcare on a global scale (Sarhadi et al., 2023). Improved quality of the Intensive Care Unit (ICU), improved health care assurance, and better outages are additional benefits of activities that focus on patient safety. In line with that, various recent studies show that healthcare workers, particularly ICU nurses, play a crucial role in maintaining patient safety through the professional attitudes, perceptions, and behaviors shown during service delivery (Yayehrad et al., 2024).

Research by Olesen et al. (2024) found that safety attitudes have a significant effect on the low rate of medical errors through effective communication and adherence to safety procedures. Likewise, Gleeson et al. (2023) emphasized that nurses' safety attitudes are greatly influenced by the work climate, management conditions, work stress, and high workload in intensive care units. To assess these safety attitudes, the most widely used instrument is the Safety Attitudes Questionnaire (SAQ) which measures six dimensions: teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions.

Although studies on patient safety attitudes continue to grow, research focusing on ICU nurses in Indonesia especially in Islamic-based hospitals remains very limited. Existing studies in Islamic hospitals have generally highlighted service quality, organizational values, and accreditation standards, but have not specifically explored safety attitudes among ICU nurses, even though this unit has the highest risk for medical errors. Most previous studies also relied on descriptive quantitative designs without examining the underlying factors that shape these attitudes. Furthermore, integration between SAQ and behavioral theory frameworks such as the Theory of Planned Behaviour (TPB) is still rarely conducted, despite its relevance in understanding how attitudes, subjective norms, and perceived behavioral control influence safety-related behaviors such as SOP compliance, incident reporting, and clinical risk management. This gap indicates the lack of comprehensive research using a multidimensional approach that connects organizational values of Islamic hospitals with behavioral determinants of safety attitudes. In addition, evidence-based recommendations to strengthen ICU patient safety such as stress management, non-punitive reporting culture, and improving management staff relations are still minimally produced in previous studies, highlighting the urgency of conducting this research.

Based on these scientific gaps, this study offers a novelty in the form of integrating quantitative analysis using SAQ with a qualitative approach based on TPB to provide a deeper understanding of patient safety attitudes in ICU nurses. This mixed methods sequential explanatory approach not only describes the scores of each dimension of safety attitudes, but also explores the reasons, perceptions, and experiences of nurses that influence these quantitative results. Thus, this article makes a theoretical and practical contribution, both through the improvement of the literature on patient safety in the ICU in the context of Islamic hospitals in Indonesia and the preparation of strategic recommendations for strengthening the safety culture at the hospital management level.

In general, this study aims to analyze the safety attitudes of ICU nurses based on the six dimensions of the SAQ and identify the factors influencing them using the Theory of Planned Behavior (TPB) framework. This study is also directed at generating evidence-based recommendations that can be used by hospital management to improve the quality of patient safety in the ICU. Theoretically, this study refers to the concepts of patient safety and TPB, which emphasize that professional behavior is influenced by attitudes, subjective norms, and behavioral control. The results of this study are expected to contribute to the development of internal policies, increasing the capacity of ICU nurses, and strengthening a holistic and evidence-based patient safety culture.

METHODS

This study employed a sequential explanatory mixed-methods design, consisting of a cross-sectional quantitative phase followed by a qualitative phase. This research was conducted in April - May 2025 and the research location was in the ICU of a type C Islamic hospital with a total of 10 beds. The quantitative approach applied is descriptive, aiming to describe patient safety attitudes based on six main dimensions measured through the Safety Attitude Questionnaire (SAQ) instrument, namely cooperation climate, safety climate, job satisfaction, work stress, management perception, and working conditions. The research population is all nurses who serve in the Intensive Care Unit (ICU) *Islamic Hospital* as many as 14 people. Because the population is small, the total sampling technique is used so that the entire population is made as respondents. The validity of the instrument refers to the SAQ-INA which has been validated by Ningrum et al. (2019).The data collection technique in this study used the Safety Attitudes Questionnaire (SAQ) questionnaire which was compiled in Google Form format. To determine the percentage of respondents expressing a positive attitude, one would examine the proportion of respondents who achieved a scale score of 75 or higher. A score of 75 on the scale is equivalent to "slightly agree" on the original 5-point Likert scale (1 = Strongly Disagree, 2 = Slightly Disagree, 3 = Neutral, 4 = Slightly Agree, 5 = Strongly Agree). Converting to a 100-point scale, the following values are assigned: 1 = 0, 2 = 25, 3 = 50, 4 = 75, 5 = 100. Respondents are considered to have a positive attitude if the percentage of respondents achieving a scale score of 75 or higher. A score of 75 on the scale represents the same result as "agree" on the Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). In accordance with the conversion to a 100-point scale, the following values are assigned: 1=0, 2=25, 3=50, 4=75, 5=100.

In data processing, the results of the SAQ questionnaire were processed descriptively by calculating the average score for each dimension, categorizing the level of safety attitudes, and testing the validity and reliability of the instrument. The qualitative approach was carried out through in-depth interviews with selected ICU nurses using purposive sampling techniques based on at least one years of work experience and the ability to provide relevant information related to patient safety. The number of informants is determined based on the principle of data saturation until no new information is found. Data dikumpulkan melalui wawancara semi-terstruktur dengan durasi minimal 35 menit, sehingga informasi yang diperoleh lebih mendalam dan menggambarkan pengalaman nyata para informan dalam penerapan keselamatan pasien di ICU .The interviews were conducted face-to-face, recorded with the consent of the informant, then transcribed and analyzed using the Miles and Huberman analysis model, namely data reduction, data presentation, and conclusion drawing and verification. This analysis is used to reinforce and provide context to quantitative results so that a comprehensive understanding is obtained. The integration of the two methods is carried out at the interpretation stage, where quantitative results are used as the basis for the preparation of qualitative questions and the results of the two are combined to build a more complete conclusion. This research has also received ethical approval from the Research Ethics Committee 013/Diklat.RSIP/III/2025 issued on March 13, 2025, and all respondents provide informed consent and are guaranteed confidentiality, anonymity, and the right to resign at any time.

RESULTS

Quantitative Results

1. Characteristics of Quantitative Research Respondents

Research Variables	Amount	Presentation
Age		
25 – 30 years	6	42,9
31 – 35 years	1	7,1
36 – 40 years	4	28,6
41 – 45 years	1	7,1
46 – 50 years	2	14,3
Gender		
Male	6	42,9
Female	8	57,1
Education		
Academy (D1,D2,D3)	3	21,4
Bachelor (D4/S1)	4	28,6
Nursing Profession	7	50
Years of service		
< 5 years	5	35,7
> 5 years	9	64,3

The study involved 14 ICU nurses with variations in age, gender, education, and work experience. Most respondents were female (57.1%) and dominated by the 25–30-year age group (42.9%). In terms of education, the majority were nursing graduates (50%). The majority had worked for more than 5 years (64.3%), indicating sufficient experience in patient safety implementation. This combination of characteristics indicates that ICU nurses have adequate competency background to support a culture of patient safety.

2. Assessment of Attitudes to Patient Safety

The assessment of patient safety attitudes was carried out using the Indonesian version of the Safety Attitudes Questionnaire (SAQ-INA) which assessed six main dimensions, namely teamwork climate, safety climate, job satisfaction, stress recognition, management perception, and working conditions. This instrument is relevant for use in the context of intensive care because it is able to describe nurses' perception of safety culture in the ICU unit.

The results of the distribution of safety attitudes showed that the majority of nurses, 11 people (79%), were in the moderate category, indicating that their understanding of the importance of patient safety was at a fairly good level. In addition, 2 people (14%) were in the low category and 1 person (7%) was in the high category. Overall, the safety attitude of ICU nurse patients is in the moderate category. Furthermore, the results of measuring each dimension using SAQ are summarized in the following table.

Table 2. Summary of Attitude Dimension Score to Patient Safety

No.	Dimensions of Attitude to Patient Safety	Average Score
1	Teamwork Climate	82,7
2	Security Climate	76,3
3	Job Satisfaction	90,4
4	Climate of Stress Recognition	61,6
	Management Perception	
5	- Unit Management	66,8
	- Hospital Management	68,6
6	Working Conditions	74,1

The results in the table show that most of the dimensions obtained a score above 75, indicating that ICU nurses have a positive attitude towards patient safety. The highest score was found in the dimension of job satisfaction (90.4), followed by the teamwork climate (82.7) and the safety climate (76.3). These findings show that team collaboration, job satisfaction, and safety culture in ICU units are in good shape. In contrast, scores on

the dimensions of stress recognition (61.6) and management perception (66.8–68.6) were lower than in the other dimensions. This indicates the need to strengthen management support and efforts to improve stress management for ICU nurses. Overall, the patient safety culture in the ICU room of *Islamic Hospital* has been formed quite well, but there is still room for improvement, especially in the aspect of stress control and optimization of the role of management in supporting patient safety.

Quantitative Research Results

1. Characteristics of Qualitative Research Informants

Tabel 3. Characteristics of Qualitative Research Informants

Category	Information	Total (n=16)	Percentage (%)
Role/Position	ICU Nurse	14	87,5
	Assistant Nursing Manager, Division II	1	6,3
	Chair of the Patient Safety Subcommittee	1	6,3
Age (years)	25–30	6	37,5
	31–35	1	6,3
	36–40	4	25,0
	41–45	2	12,5
	46–50	3	18,7
Gender	Male	8	50,0
	Female	8	50,0
Education	Academy (D1/D2/D3)	3	18,7
	Bachelor (D4/S1)	5	31,3
	Nursing Profession	8	50,0
Years of service	< 5 years	5	31,3
	≥ 5 years	11	68,7

This qualitative research involved 16 informants, consisting of 14 ICU nurses as the main informants and 2 supporting informants, namely the Assistant Manager of Nursing Field II and the Chairman of the Patient Safety Subcommittee, were included as key informants to provide in-depth and expert insights relevant to the study who played a role in providing a managerial perspective for the purpose of data triangulation. Most informants were clinical ICU staff of productive age, reflecting a workforce prepared to face intensive work demands. The gender composition was balanced, and the majority had professional education and ≥5 years of service, so their insights reflected strong experience and competence in implementing patient safety in the ICU.

2. Qualitative Analysis Approach

This qualitative study aims to explore the understanding and experience of ICU nurses at Islamic Hospital related to patient safety by using thematic analysis based on the Theory of Planned Behaviour (TPB). This approach allows researchers to deeply

understand how attitudes, subjective norms, and perceptions of behavior control affect nurses' intentions and actions in ensuring patient safety in the intensive care unit.

The main data was obtained through in-depth interviews with ICU nurses as the main informants. To improve the validity of the findings, source triangulation was carried out by interviewing the Chairman of the Patient Safety Subcommittee and the Assistant Manager of Nursing Field II. This process results in a rich narrative regarding nurses' challenges, motivations, and expectations in working in a stressful ICU environment. Thematic analysis is carried out through systematic steps according to Braun and Clarke, starting from data familiarization, initial coding, theme identification, to the preparation of the main themes and sub-themes according to the TPB framework. The thematic coding structure used in this study is presented in the following table.

Table 4. Thematic Coding Structure of Patient Safety Attitudes

Main Theme	Sub-Theme	Main Code	Example of an Informant Statement Quote (Live Excerpt)
Professional attitude towards patient safety	Positive belief in patient safety	Professional commitment	*"Nurses are proud to be able to contribute to saving patients, especially those in the ICU. Furthermore, there's a sense of satisfaction when a patient is saved, and when the actions taken align with the doctor's goals." (I4)*
		Emotional satisfaction	*"The feeling of pride and satisfaction when a patient... when they are having trouble breathing, we put on an ETT, resume breathing when the patient is conscious and move to another room, that is a satisfaction in itself." (I2)*
		Motivation to prevent mistakes	*"There must be a sense of belonging in the work environment, and the team must be truly embraced, truly so that cooperation is strong, and there must be no blaming, and that's what reminding each other is all about." (I13)*
		Stress management	*"I'm confused, sir, what should I do after this? I'm confused about what to do with the patient, and then I go blank... That's because I'm tired, and usually because there are a lot of patients, the work level has to be really optimal." (I13)*
	Impact of stress on patient safety performance	Mistakes due to stress	*"At the time, I was so stressed and exhausted that I almost forgot to verify the dosage of the medication I was given. Luckily, I realized it quickly and asked a colleague to double-check the medication." (I8)*
		Disruption of focus	*"High stress, lots of patients, and fatigue because there are lots of patients and lots of programs, so in the end, you're exhausted and don't have time to rest, for example, you drink until you forget, and then human error occurs, resulting in a lack of focus in treatment." (I6)*
Patient safety culture and support	Peer support	Team collaboration	*"Fortunately, my team of colleagues immediately corrected me, telling me that it was an incorrect input in the patient's vital signs." (I12)*
		Non-punitive culture	*"We are aware that we may have made a mistake, but we are afraid that when we report it, the follow-up will not be to improve things but to be blamed, punished, punished." (I4)*
		Remind each other	*"Not blaming each other, but that's what we're reminding each other about." (I13)*

Main Theme	Sub-Theme	Main Code	Example of an Informant Statement Quote (Live Excerpt)
Resource availability and control	Management expectations	Management involvement	*"He's very open about patient safety, sir. He often reminds us of the importance of patient safety, but he's not always there in critical situations." (I12)*
		Management feedback	*"From the hospital side, they sometimes give a response, but that response sometimes doesn't include a term, a solution." (I3)*
		Management policy	*"The policy itself is quite complete in terms of documentation, but in some cases its implementation is not yet consistent." (I14)*
	Management support	Dukungan manajemen tidak langsung	*"The reporting system has been created to make it easier for staff to make reports, there are several cases where reports related to patient safety incidents have become a problem so they are not reported to the committee." (T2)*
	Availability of resources	Staff shortage	*"So far, the staff has not been sufficient, very, very much so. The impact could be that, for example, if there are a lot of patients, there are a lot of procedures, so we become stressed, confused, what to do, so if it's like that, the actions will be slow." (I13)*
		Tool limitations	*"It's still not fully adequate. Equipment like the syringe pumps aren't working properly, and the number of ventilators isn't optimal either, and sometimes some ventilators are even broken." (I14)*
	Training and supervision	New staff training	*"Training for new staff needs to be more intensive… they need longer support to develop their daily work habits in the ICU because the ICU is different from regular wards." (I10)*
		Intensive mentoring	*"New staff in the ICU may need more guidance than senior staff to build habits and confidence in working, especially in handling critical emergency patients." (I9)*
		Safety training	*"Training for new staff has been going quite well, sir, but it is more focused on technique. Overall patient safety needs to be improved even though there has been an initial orientation for new employees." (I12)*

The table shows the process of categorizing interview data into key themes relevant to the TPB framework. Each key code reflects the essence of the narrative conveyed by the informant, ranging from professional commitment, stress challenges, peer support, management involvement, to resource availability issues and training needs. This method ensures that the analysis not only emphasizes on the theoretical aspects, but also describes the real conditions that nurses face in the field, including their obstacles, motivations, and expectations in enforcing a culture of safety. The next section will elaborate in depth on the qualitative findings based on these themes to provide a more complete understanding of the dynamics of patient safety in the ICU.

DISCUSSION

The results of the evaluation showed that the work climate of the ICU nurse team was in the positive category, especially related to cooperation, communication, and coordination

in services. These findings indicate that ICUs already have a strong foundation of teamwork, which is an important element in improving the quality of service. Theoretically, a good teamwork climate plays a big role in the effectiveness of ICU services, especially to support quick and precise decision-making. This is in line with Chen & Gong (2022) who assert that effective collaboration can lower the risk of clinical errors and improve the efficiency of medical procedures. In addition, a supportive work environment also has an impact on patient safety and the welfare of health workers. However, the study also found that not all aspects of collaboration run optimally. There are still obstacles in expressing opinions on patient care issues, which indicate that there are psychological constraints or work structures that do not fully support inclusivity. This condition is in line with the findings of Thethwayo et al. (2024) that communication between professions in ICUs is often limited due to hierarchical organizational structures. The success of teamwork is largely determined by the supporting organizational system. Factors such as consistent supervision, role clarity, and interprofessional training contribute to effective team coordination. Permanasari & Oktamianti (2022) emphasized that collaborative organizational structures, teamwork training, and daily briefings have been proven to improve the quality of clinical interactions and decision-making. Therefore, hospital management support is crucial to ensure the creation of a safe and efficient work environment

The results of the study showed that the safety climate in the ICU of Islamic Hospital was in the category of quite good, with a positive perception from most nurses on the importance of patient safety. These findings are in line with previous research that stated that the perception of safety is influenced by workload factors, management support, and clinical experience (Hong, 2025). A high score on the medical error handling indicator indicates that the incident reporting system in the unit has been effective, supporting the results of Fukami et al. (2020) study that emphasizes the importance of clear and non-punitive reporting mechanisms. However, it was found that there was a variation in perceptions between nurses, especially in the aspect of the influence of work stress and emotional fatigue, according to the findings of Lee et al. (2024). This shows the need for interventions in the form of stress management training or psychological support to reduce disparities in safety perceptions. In addition, although nurses understand the reporting pathway well, the feedback mechanism is considered not optimal. This gap is in line with the research of Noble et al. (2020), which affirms that continuous feedback and real-time information are key elements in improving communication and collaboration. A culture of learning from mistakes is beginning to

develop, but openness to discussing mistakes is still limited. The study of Pfeifer et al. (2023) emphasized that the level of psychological safety plays a big role in encouraging incident reporting. The low support between colleagues shows that team dynamics still need strengthening. Teamwork training approaches as proposed by Alsabri et al. (2022) can aid improvement, while the implementation of Just Culture (Murray et al., 2023) is important for reducing fear of punishment and encouraging collective learning.

The evaluation of nurses' job satisfaction at the ICU of Islamic Hospital showed very positive results. Nurses generally have a high intrinsic satisfaction with their work, an important finding given the high workload in intensive care units. These results are in line with the research of Hashem & Zeinoun (2020)) and the intrinsic motivation theory of Ryan & Deci (2020) which emphasizes the role of personal values and love of the profession in increasing work resilience. Pride in the institution and positive perception of the work environment are also prominent aspects. These findings support the results of Labrague et al. (2022) research on the role of organizational identity in work commitments, and are in line with Dall'Ora et al. (2020) who highlight the importance of belonging as a coping mechanism in a stressful work environment. Strong interpersonal relationships, family atmosphere, and social support between teams are also key factors in increasing job satisfaction. This is consistent with the study of Zhang et al. (2023), which showed that a positive team climate has a direct impact on clinical resilience and performance. Overall, these findings suggest that job satisfaction at the individual level, strength of team dynamics, and institutional pride can be an important basis for the development of retention programs, increased professionalism, and strengthening the quality of services in ICUs.

The results of the study show that ICU nurses face complex work stress dynamics, especially related to workload, fatigue, and the risk of clinical error. The majority of nurses admit that a high workload negatively impacts performance, in line with the findings of Dall'Ora et al. (2020) which stated that excessive workload increases the risk of decreased quality of care and medical errors. This also reinforces the theory of Conservation of Resources which explains that prolonged stress drains the psychological resources of health workers. Burnout emerged as an important factor that affects work effectiveness. The study's findings are in line with research by Jun et al. (2021) which showed that emotional fatigue can lower clinical alertness. Variations in coping ability between nurses were also identified, as reported by Gómez-Salgado et al. (2020), showing differences in the level of psychological resilience. Tense work situations in the ICU were found to be a significant risk

factor for clinical error, supporting a study by Byrne et al. (2020) that revealed that acute stress can interfere with cognitive function and decision-making. This condition confirms the importance of maintaining patient safety through better stress management. In practical terms, these findings emphasize the need for the development of stress management programs at the individual level, a review of the distribution of workload and psychological support at the organizational level, as well as the implementation of stricter mental health protection standards at the policy level, as recommended in previous research.

The evaluation of nurses' perception of management at the ICU of Islamic Hospital showed that there was a significant gap between the expectations of staff and the support provided by management. At the unit level, nurses assessed that managerial support for daily clinical activities was still lacking, in line with the findings of Colbenson et al. (2021) who linked the lack of frontline support to increased burnout. Unit management's response to patient safety issues was also considered inadequate, reflecting the challenges of safety culture as described in the study Aldawood et al. (2020). Communication gaps also worsen the effectiveness of teamwork in the ICU environment. At the hospital management level, nurses feel that there is a mismatch between the understanding of top management and operational conditions in the field. This is in line with the findings of Alsaqqa (2023) regarding the perception gap between executives and clinical staff. Ineffective problem-solving mechanisms demonstrate the need for a more participatory conflict management approach, as recommended by Raykova & Semerdjieva (2019). Comparatively, unit management is considered to be more understanding of field conditions but has limitations in making strategic changes. In contrast, hospital management has greater authority, but is less connected to the dynamics of daily operations. Therefore, it is necessary to strengthen the capacity of transformational leadership in unit managers (Aung & Preudhikulpradab, 2021) as well as the development of feedback and knowledge management systems at the hospital level to improve collaboration and service quality (Schneider et al., 2024).

The evaluation of the working conditions of nurses in the ICU of Islamic Hospital shows that there is a variation in perception of important elements of the work environment. One of the key findings was concerns about an imbalance between workload and staffing, which has the potential to trigger burnout and reduce service quality. These results are in line with previous research that confirms that a non-optimal patient-nurse ratio negatively impacts patient safety and clinical outcomes. On the other hand, the training and development aspects showed positive results. Nurses assessed that the orientation program for new staff had run

quite well, supporting the readiness of health workers in facing the complexity of ICU services. The availability of clinical information is also considered adequate, indicating that the information systems in this unit have assisted in the evidence-based decision-making process. These findings carry important implications for improving operations in the ICU. It is necessary to conduct further evaluation of human resource allocation, strengthening mentoring programs, and optimizing information technology to support collaboration and work effectiveness. Overall, the results of the study confirm the need for a comprehensive approach to improve the welfare of nurses while maintaining the quality of service in the ICU.

The results of the study showed that ICU nurses have a high professional commitment to patient safety, in line with the Theory of Planned Behaviour (TPB) which emphasizes the importance of attitudes, subjective norms, and perceptions of behavior control in determining action. Based on these findings, several strategic recommendations can be implemented. In terms of attitudes, it is important to strengthen stress management training, reward outstanding nurses, and hold simulations of critical situations to increase confidence. In the aspect of subjective norms, it is necessary to build a culture of non-punitive incident reporting, increase collaboration between professions through joint training, and encourage active involvement of management in providing feedback and support. Meanwhile, in the aspect of perceived behavioral control, hospitals need to optimize the number of staff and the availability of equipment, organize patient safety training on an ongoing basis, and strengthen mentoring programs for new nurses. The implementation of these recommendations is expected to strengthen the culture of patient safety and improve the quality of services in the ICU on an ongoing basis.

CONCLUSIONS

This study shows that ICU nurses at Islamic Hospital have a positive attitude towards patient safety, especially in the aspects of teamwork, safety climate, and job satisfaction. The professional commitment of nurses in maintaining patient safety looks strong, supported by good team collaboration and a sense of pride in the profession and institution. However, the findings also reveal a number of important challenges that can hinder patient safety optimization, namely high levels of stress, heavy workloads, limited resources, and a lack of support and feedback from management. The integration of quantitative methods through SAQ and qualitative analysis based on the Theory of Planned Behavior (TPB) showed that nurses' attitudes, subjective norms, and perceptions of behavioral control were influenced by

organizational conditions and the work environment. Low scores on the dimensions of stress recognition, management perception, and working conditions indicate the need for more systematic intervention from hospital management. In addition, a culture of non-punitive reporting and open communication still needs to be strengthened to support learning from mistakes and prevent patient safety incidents. Overall, the patient safety culture in the ICU is at a fairly good level but still needs continued strengthening. Stress management training, increased collaboration between professions, more responsive management support, and optimization of human resources and infrastructure are recommended strategic steps. The implementation of this recommendation is expected to significantly improve patient safety and strengthen the quality of services in intensive care units.

RESEARCH SUGGESTIONS

Based on the study's conclusions, improving patient safety attitudes among ICU nurses at RSI PKU Muhammadiyah Pekajangan can be achieved through several key strategies. First, attitudes toward patient safety need to be strengthened through scheduled stress management training, rewarding nurses who consistently implement safety practices, and conducting emergency simulations to increase preparedness and confidence. Second, subjective norms can be improved by establishing a culture of non-punitive reporting, strengthening interprofessional collaboration through communication training, and increasing management involvement in providing feedback and support for safety efforts. Third, perceived behavioral control can be improved by ensuring adequate resources, providing ongoing patient safety training, and developing a mentoring program for new nurses to help them adapt to the ICU environment. This series of recommendations is expected to strengthen patient safety culture comprehensively.

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