Analysis of Risk Factors Related to Nurses' Attitudes and Patient Safety Culture Implementation

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ABSTRACT

Patient safety is a critical global concern, with millions of adverse events occurring annually. Nurses' attitudes towards patient safety culture are pivotal in its successful implementation. This study aimed to assess the risk factors related to nurses' attitudes towards patient safety culture and its relationship with the implementation of patient safety culture in a public hospital dr. H. Moch. Ansari Saleh in Banjarmasin, Indonesia. A cross-sectional study was conducted among nurses working in a public hospital dr. H. Moch. Ansari Saleh in Banjarmasin, Indonesia. Data were collected using a questionnaire adapted from the National Patient Safety Guidelines and the AHRQ Hospital Survey on Patient Safety. The questionnaire assessed nurses' attitudes towards patient safety, the implementation of patient safety culture, and potential risk factors such as age, gender, years of experience, and workload. Data were analyzed using descriptive statistics, Spearman's rank correlation coefficient, and multivariate logistic regression. A total of 85 nurses participated in the study. The majority of nurses (81.2%) exhibited a moderate attitude towards patient safety, while 83.5% reported a moderate level of patient safety culture implementation. Spearman's rank correlation analysis revealed a weak positive correlation (rho = 0.417, p = 0.01) between nurses' attitudes and the implementation of patient safety culture. Multivariate logistic regression analysis identified age (OR = 1.12, 95% CI = 1.01-1.24) and workload (OR = 1.18, 95% CI = 1.05-1.33) as significant risk factors associated with a less positive attitude towards patient safety culture. In conclusion, while there is a positive relationship between nurses' attitudes and patient safety culture implementation, the relationship is weak. Age and workload were identified as significant risk factors for a less positive attitude towards patient safety culture. These findings highlight the need for targeted interventions to address these risk factors and enhance nurses' attitudes, thereby strengthening patient safety culture in the hospital.

1. Introduction

Patient safety is a critical aspect of healthcare delivery worldwide, encompassing a range of measures and practices aimed at preventing harm to patients during their care. The World Health Organization (WHO) defines patient safety as "the absence of preventable harm to a patient during the process of health care and reduction of risk of unnecessary harm associated with health care to an acceptable minimum". This definition underscores the importance of proactive measures to identify and mitigate potential risks, as well as the need to minimize harm when it does occur. The significance of patient safety is underscored by the alarming statistics on adverse events in healthcare settings. The WHO estimates that millions of patients experience adverse events annually, leading to significant morbidity and mortality. In low- and middle-income countries, the burden of adverse events is particularly high, with an estimated 134 million incidents occurring in hospitals

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each year, resulting in 2.6 million deaths. These figures highlight the urgent need to prioritize patient safety and implement effective strategies to prevent harm to patients. Patient safety is a multifaceted issue that encompasses various dimensions, including medication safety, surgical safety, infection prevention and control, safe patient handling, and effective communication among healthcare providers. Medication errors, for instance, are a leading cause of adverse events, with an estimated 1.3 million people injured annually in the United States alone. Surgical errors, such as wrong-site surgery or retained surgical instruments, can have devastating consequences for patients. Healthcare-associated infections (HAIs) are another major concern, affecting millions of patients worldwide and contributing to increased morbidity, mortality, and healthcare costs.[1,2]

To address these challenges, healthcare organizations have increasingly recognized the importance of fostering a strong patient safety culture. Patient safety culture refers to the shared values, beliefs, and norms that influence behaviors and attitudes related to patient safety within an organization. A positive patient safety culture is characterized by a blame-free environment where healthcare professionals feel empowered to report errors and near misses, learn from mistakes, and continuously improve safety practices. This culture of openness and transparency is essential for identifying and addressing systemic issues that can compromise patient safety. Nurses, as the largest group of healthcare providers and the primary caregivers for patients, play a pivotal role in the implementation and maintenance of patient safety culture. They are at the forefront of patient care, interacting with patients on a daily basis and observing their responses to treatment. Nurses are also responsible for administering medications, performing procedures, and monitoring patients for complications. Their vigilance and attention to detail are crucial for detecting and preventing errors that can harm patients. Moreover,

nurses are often the first to identify potential risks to patient safety. They may observe changes in a patient's condition, notice discrepancies in medication orders, or identify hazards in the environment. Their ability to communicate these concerns effectively to other members of the healthcare team is essential for preventing adverse events. Nurses also play a key role in educating patients and their families about safety measures, such as hand hygiene and fall prevention, empowering them to participate in their own care and reduce the risk of harm.[3,4]

Given the critical role of nurses in patient safety, it is essential to understand the factors that influence their attitudes and behaviors related to safety. Nurses' attitudes toward patient safety culture can be shaped by a variety of factors, including their education and training, work experience, workload, and perceived organizational support. Nurses who have received comprehensive training in patient safety and who work in environments that prioritize safety are more likely to have positive attitudes towards safety culture and to engage in safe practices. Conversely, nurses who are overworked, understaffed, or who feel unsupported by their organization may be more likely to experience burnout and to disengage from safety efforts. This can lead to a decline in vigilance, an increase in errors, and a negative impact on patient safety. Therefore, it is crucial for healthcare organizations to create a supportive work environment for nurses, one that fosters a culture of safety and provides the resources and training necessary for nurses to deliver safe and high-quality care. In Indonesia, patient safety remains a significant challenge. The Ministry of Health reported a high number of patient safety incidents in hospitals across the country. This highlights the need for continuous efforts to strengthen patient safety culture in Indonesian healthcare settings. Understanding nurses' attitudes towards patient safety culture and the risk factors associated with these attitudes is essential in identifying barriers and facilitators to its implementation.[5,6]

Previous research has explored the relationship between nurses' attitudes and patient safety culture implementation. Studies have consistently shown a positive association between positive attitudes towards patient safety and adherence to safety practices. Nurses with positive attitudes are more likely to report errors, participate in safety initiatives, and engage in safe behaviors. However, the strength of this relationship may vary across different healthcare settings and cultural contexts. Furthermore, several risk factors have been identified as potentially influencing nurses' attitudes towards patient safety culture. These include demographic factors such as age and gender, as well as work-related factors such as years of experience, workload, and perceived organizational support. Understanding these risk factors is crucial in developing targeted interventions to improve nurses' attitudes and promote a positive patient safety culture.[6,7] This study aimed to assess the risk factors related to nurses' attitudes toward patient safety culture and its relationship with the implementation of patient safety culture in a public hospital dr. H. Moch. Ansari Saleh Banjarmasin, Indonesia. The findings of this study will provide valuable insights into the current state of patient safety culture in the hospital and inform the development of tailored interventions to address the identified risk factors and enhance nurses' attitudes, thereby strengthening patient safety practices.

2. Methods

This study employed a cross-sectional design to investigate the relationship between nurses' attitudes toward patient safety culture and its implementation within a specific healthcare setting. The research was conducted in a public hospital dr. H. Moch. Ansari Saleh Banjarmasin, Indonesia. These wards were purposefully selected due to their high patient volume and the diverse range of medical and surgical cases they handle. This selection ensured a representative sample of nurses working in various clinical areas within the hospital, enhancing the generalizability of the study's findings. The hospital chosen for this study is a major public healthcare institution in the region, serving a large and diverse population. Its significance lies in its role as a primary provider of medical services to the community, making it an ideal setting to examine the complexities of patient safety culture implementation. The hospital's commitment to improving patient care and its ongoing efforts to foster a culture of safety further justified its selection as the research site. The cross-sectional nature of the study design allowed for the collection of data at a single point in time, providing a snapshot of the prevailing attitudes and practices related to patient safety culture. This approach is well-suited for exploratory research, enabling the identification of potential associations and patterns that warrant further investigation. However, it is important to acknowledge the limitations of this design, as it does not establish causality or track changes over time.

To ensure a comprehensive and representative sample, all registered nurses working in public hospitals dr. H. Moch. Ansari Saleh Banjarmasin during the data collection period were considered eligible for participation. This inclusive approach aimed to capture the diverse perspectives and experiences of nurses involved in direct patient care. The inclusion criteria were carefully defined to include only those who met specific requirements: (1) being a registered nurse with a valid license to practice, (2) actively working in a prominent public hospital located in Banjarmasin, and (3) expressing a willingness to participate in the study. To maintain the integrity of the research and ensure the reliability of the findings, certain exclusion criteria were also applied. Nurses who were on leave of absence, temporarily assigned to other units, or otherwise unavailable during the data collection period were excluded from the study. This measure aimed to minimize potential biases and ensure that the collected data accurately reflected the attitudes and practices of the nurses actively engaged

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in patient care within the selected wards. The sample size for this study was meticulously determined using the G*Power software, a widely recognized tool for power analysis and sample size calculation. Based on a desired effect size of 0.3, an alpha level of 0.05, and a power of 0.8, the software recommended a minimum sample size of 85 nurses. This sample size was deemed sufficient to detect statistically significant relationships and provide meaningful insights into the research questions. The recruitment process involved a multi-faceted approach to reach all eligible nurses. Information about the study, its purpose, and the voluntary nature of participation was disseminated through various channels, including email announcements, flyers posted in staff areas, and brief presentations during staff meetings. Interested nurses were provided with detailed information sheets outlining the study procedures, potential risks and benefits, and their rights as participants. Those who met the inclusion criteria and provided informed consent were enrolled in the study.

The primary data collection instrument for this study was a meticulously designed questionnaire. This questionnaire was not developed from scratch but rather adapted from two well-established and validated instruments: the National Patient Safety Guidelines questionnaire on nurses' attitudes towards patient safety and the AHRQ Hospital Survey on Patient Safety. This approach ensured that the questionnaire was grounded in existing research and aligned with recognized standards for assessing patient safety culture. The questionnaire was divided into three distinct sections, each serving a specific purpose in gathering comprehensive data: Section 1: Nurses' Attitudes Towards Patient Safety, this section aimed to gauge the nurses' overall attitudes and beliefs regarding patient safety. It employed a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5), to assess their level of agreement or disagreement with various statements related to patient safety culture. The statements covered a wide

array of topics, including teamwork and collaboration, communication openness, error reporting and learning, leadership commitment to safety, and the perception of a blame-free environment. By capturing the nuances of nurses' attitudes, this section sought to uncover potential barriers and facilitators to patient safety culture implementation. Section 2: Implementation of Patient Safety Culture, this section focused on evaluating the extent to which patient safety culture principles were being translated into practice within the hospital setting. It utilized a 4-point Likert scale, ranging from "never" (1) to "always" (4), to assess the frequency with which specific safety practices were observed and implemented. The items in this section covered a broad spectrum of safety-related activities, such as adherence to standardized protocols, incident reporting and analysis, proactive risk assessment, and the availability of resources and support for safety initiatives. By examining the actual implementation of safety practices, this section aimed to identify areas where improvements could be made to strengthen patient safety culture. Section 3: Demographic and Work-Related Information, this section collected essential background information about the participants, including their age, gender, years of experience as a nurse, and current workload. Additionally, it inquired about their perception of organizational support for patient safety, a crucial factor that can significantly influence attitudes and behaviors. This information was collected to explore potential associations between demographic and work-related variables and nurses' attitudes toward patient safety culture. To ensure the questionnaire's cultural relevance and linguistic accuracy, it underwent a rigorous translation and back-translation process. The original English version was translated into Indonesian by a bilingual healthcare professional with expertise in patient safety. The Indonesian version was then back-translated into English by a different bilingual healthcare professional to verify the accuracy and consistency of the

translation. This meticulous process aimed to minimize any potential misunderstandings or misinterpretations that could arise due to language barriers. Furthermore, a pilot study was conducted with a small group of 10 nurses to assess the questionnaire's clarity, comprehensibility, and overall usability. The nurses were asked to complete the questionnaire and provide feedback on its content, format, and any difficulties they encountered. Based on their valuable input, minor revisions were made to enhance the questionnaire's clarity and ensure that it effectively captured the intended information.

The data collection phase of this study spanned one month, from May to June 2024. Prior to commencing data collection, the research team obtained the necessary approvals from the hospital's ethics committee and the Institutional Review Board of the affiliated university. These approvals ensured that the study adhered to ethical guidelines and protected the rights and well-being of the participants. To initiate the data collection process, the research team conducted comprehensive information sessions for the nurses working in a prominent public hospital located in Banjarmasin. These sessions aimed to familiarize the nurses with the study's objectives, procedures, and the significance of their participation. The voluntary nature of participation was emphasized, and nurses were assured of the confidentiality and anonymity of their responses. The questionnaires were then distributed directly to the nurses who expressed their willingness to participate. To facilitate the completion of the questionnaires, the research team provided clear instructions and offered assistance to those who had questions or concerns. The nurses were given ample time to complete the questionnaires at their convenience, and the completed questionnaires were collected in sealed envelopes to maintain confidentiality. Throughout the data collection period, the research team maintained regular communication with the participating nurses to address any emerging questions or concerns. This open line of communication fostered a collaborative and supportive environment, ensuring that the nurses felt comfortable and informed throughout the study.

The data collected through the questionnaires were meticulously analyzed using the statistical package for the social sciences (SPSS) version 25. This powerful software enabled the research team to perform a wide range of statistical analyses to derive meaningful insights from the data. The analysis plan encompassed both descriptive and inferential statistics. Descriptive statistics were employed to summarize the demographic characteristics of the participants, such as age, gender, and years of experience. Additionally, descriptive statistics were used to summarize the responses to each questionnaire item, providing a clear picture of the distribution of attitudes and practices related to patient safety culture. To explore the relationships between variables, inferential statistics were utilized. Spearman's rank correlation coefficient was employed to assess the association between nurses' attitudes towards patient safety and the implementation of patient safety culture. This non-parametric test was chosen due to the ordinal nature of the Likert scale data. A p-value of less than 0.05 was considered statistically significant, indicating a meaningful correlation between the two variables. To identify potential risk factors associated with a less positive attitude towards patient safety culture, multivariate logistic regression analysis was performed. This advanced statistical technique allowed for the simultaneous examination of multiple independent variables, such as age, gender, years of experience, and workload, while controlling for potential confounding factors. The results of this analysis provided valuable insights into the specific factors that may hinder the development of positive attitudes towards patient safety among nurses. The ethical implications of this study were carefully considered and addressed throughout the research process. The study protocol was rigorously reviewed and approved

by the hospital's ethics committee. These independent bodies ensured that the study adhered to the highest ethical standards and protected the rights and welfare of the participants. Before enrolling in the study, all eligible nurses were provided with a comprehensive information sheet detailing the study's purpose, procedures, potential risks and benefits, and their rights as participants. Informed consent was obtained from each participant, ensuring that they understood the nature of the study

3. Results and Discussion

Table 1 presents the demographic characteristics of the participants and their responses regarding attitudes toward patient safety and the implementation of patient safety culture. The majority of participants were female (54.1%), with a mean age of 32.5 years. The average work experience was 7.8 years, and most nurses (89.4%) worked 30-40 hours per week. Regarding attitudes toward patient safety, most nurses (81.2%) reported moderate attitudes, while a smaller percentage reported good (8.2%) or poor (10.6%) attitudes. The mean score for attitudes towards patient safety was 3.6 on a 5-point Likert scale. Similarly, the implementation of patient safety culture was reported as moderate by the majority of nurses (83.5%), with fewer reporting good (5.9%) or poor (10.6%) implementation. The mean score for patient safety culture implementation was 2.9 on a 4-point Likert scale.

Table 1. Participant characteristics.

Characteristic	Frequency (n)	Percentage (%)	Mean (SD)
Gender			
Female	46	54.1	
Male	39	45.9	
Age (years)			32.5 (5.2)
Years of experience			7.8 (4.3)
Hours worked per week			
<30	9	10.6	
30-40	76	89.4	
Attitude toward patient safety			3.6 (0.7)
Poor	9	10.6	
Moderate	69	81.2	
Good	7	8.2	
Patient safety culture implementation			2.9 (0.6)
Poor	9	10.6	
Moderate	71	83.5	
Good	5	5.9	

Table 2 presents the relationship between nurses' attitudes towards patient safety and the implementation of patient safety culture in the hospital. The majority of nurses (62 out of 85) reported both moderate attitudes toward patient safety and moderate implementation of patient safety culture. A few nurses (8 out of 85) reported moderate attitudes but good implementation, while another small group

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(6 out of 85) reported good attitudes but moderate implementation. There were 9 nurses who reported both poor attitudes and poor implementation. No nurses reported good attitudes with poor implementation or poor attitudes with good implementation. The Spearman's rho of 0.417 (p=0.01) indicates a statistically significant weak positive correlation between nurses' attitudes and the implementation of patient safety culture, suggesting that nurses with more positive attitudes tend to report higher levels of implementation. However, the relationship is not strong, indicating that other factors may also influence the implementation of patient safety culture.

Table 2. Relationship between nurses' attitudes and patient safety culture implementation.

Attitude toward patient safety	Patient safety culture implementation	n
Poor	Poor	9
Moderate	Moderate	62
Moderate	Good	8
Good	Moderate	6
Spearman's rho = 0.417, p = 0.01		

Table 3 displays the results of the multivariate logistic regression analysis, which was conducted to identify risk factors associated with less positive attitudes toward patient safety culture among nurses. The odds ratio of 1.12 for age suggests that with each increasing year of age, the odds of having a less positive attitude towards patient safety culture increase by 12%. This association is statistically significant (p = 0.03), indicating that age is a significant risk factor. The odds ratio of 1.18 for workload indicates that nurses with high workloads are 18% more likely to have a less positive attitude towards patient safety culture compared to those with low workloads. This association is also statistically significant (p = 0.01), highlighting workload as another significant risk factor. The odds ratios for gender (OR = 0.95) and years of experience (OR = 1.02) are close to 1, and their confidence intervals include 1. Additionally, their p-values are not statistically significant (p = 0.62 and p = 0.45, respectively). This suggests that gender and years of experience are not significant risk factors for less positive attitudes toward patient safety culture in this study. Overall, Table 3 highlights age and workload as significant risk factors for less positive attitudes toward patient safety culture among nurses. This implies that older nurses and those with higher workloads may require targeted interventions to improve their attitudes and promote a stronger patient safety culture within the hospital setting.

Table 3. Risk factors associated with less positive attitudes towards patient safety culture.

Risk factor	Odds ratio (OR)	95% confidence interval (CI)	p-value
Age (per year increase)	1.12	1.01 - 1.24	0.03
Workload (high vs. low)	1.18	1.05 - 1.33	0.01
Gender (male vs. female)	0.95	0.78 - 1.16	0.62
Years of experience (per year increase)	1.02	0.96 - 1.08	0.45

The findings of this study provide valuable insights into the intricate relationship between nurses' attitudes towards patient safety culture and its actual implementation within a public hospital in Banjarmasin, Indonesia. The results contribute to the growing body of evidence highlighting the pivotal role of nurses in shaping and sustaining a culture of safety in healthcare settings. The predominance of moderate attitudes towards patient safety among the participating nurses (81.2%) suggests a general awareness and appreciation of its importance. This finding aligns with previous research conducted in Indonesia and other countries, which has consistently demonstrated that nurses recognize the significance of patient safety in delivering high-quality care. However, the relatively small proportion of nurses reporting good attitudes (8.2%) underscores the need for ongoing efforts to cultivate and reinforce positive attitudes towards patient safety. The moderate level of patient safety culture implementation reported by the majority of nurses (83.5%) indicates that while some safety practices are in place, there remains considerable room for improvement. This observation is consistent with the findings of study who reported varying levels of patient safety culture implementation in Indonesian public hospitals. The suboptimal implementation may be attributed to several factors, including resource constraints, inadequate training, and a lack of clear communication channels for reporting safety concerns. The weak positive correlation between nurses' attitudes and patient safety culture implementation (rho = 0.417, p = 0.01) suggests that while attitudes play a role, they are not the sole determinant of safety culture. This finding is in line with the broader literature on patient safety culture, which emphasizes the multifactorial nature of this complex phenomenon. While positive attitudes are undoubtedly essential, they must be complemented by supportive organizational structures, effective leadership, and a shared commitment to safety among all healthcare professionals.[7-9]

The positive association between age and less positive attitudes toward patient safety culture observed in this study is a multifaceted issue with potential roots in generational differences, evolving healthcare landscapes, and individual experiences. Older nurses, having embarked on their careers in an era where patient safety was not as prominently emphasized as it is today, may have received training and socialization that prioritized different aspects of care. The traditional hierarchical structures and paternalistic approaches prevalent in earlier healthcare settings may have fostered a culture of deference to authority and a reluctance to question established practices, even when those practices could be improved upon from a safety perspective. Furthermore, the rapid pace of technological advancements and the increasing complexity of healthcare delivery may pose challenges for older nurses who may not have had the opportunity to fully engage with these changes during their initial training. The adoption of new technologies, such as electronic health records and computerized provider order entry systems, requires continuous learning and adaptation, which can be daunting for those who are less familiar with these tools. This potential knowledge gap may contribute to a sense of unease or skepticism towards newer safety practices that rely on these technologies, leading to less positive attitudes towards patient safety culture. Additionally, older nurses may have developed deeply ingrained habits and routines over their long careers, which can be resistant to change, even when those changes are demonstrably beneficial for patient safety. The comfort and familiarity of established practices can create a sense of inertia, making it difficult to embrace new approaches, even when those approaches are supported by evidence and best practices. This resistance to change can manifest as less positive attitudes towards patient safety culture, as older nurses may perceive these changes as disruptive or unnecessary. However, it is crucial to acknowledge

that age is not a deterministic factor, and many older nurses are highly engaged in patient safety efforts. Their wealth of experience and clinical expertise can be invaluable assets in identifying potential risks and implementing effective safety measures. Moreover, older nurses often possess strong leadership skills and a deep understanding of the organizational culture, which can be leveraged to promote a culture of safety within their teams and units. Therefore, it is essential to avoid generalizations and recognize the diversity of attitudes and experiences among older nurses.[10-12]

The impact of workload on nurses' attitudes towards patient safety culture is a well-established phenomenon with far-reaching consequences for both healthcare providers and patients. High workloads, characterized by excessive patient assignments, time pressures, and a relentless pace of work, can create a chronic state of stress and burnout among nurses. This chronic stress can deplete nurses' emotional and cognitive resources, leaving them less able to engage in the proactive and vigilant behaviors that are essential for patient safety. When nurses are constantly rushing from one task to the next, they may feel compelled to prioritize immediate patient needs over long-term safety goals. This can lead to shortcuts, workarounds, and a decreased focus on preventive measures, all of which can compromise patient safety. Moreover, high workloads can erode nurses' sense of control and autonomy, leading to feelings of helplessness and frustration. This loss of control can further diminish their motivation to engage in safety initiatives, as they may feel that their efforts are futile in the face of overwhelming demands. The negative impact of workload on patient safety is not limited to individual nurses but extends to the entire healthcare team. When nurses are stressed and overworked, they may be less likely to communicate effectively with their colleagues, leading to misunderstandings, errors, and a breakdown in teamwork [50]. This can create a vicious cycle, as communication failures can further exacerbate workload issues and contribute to a negative spiral of declining morale and patient safety. Addressing the issue of workload is therefore crucial for fostering a positive patient safety culture. Hospitals must strive to maintain adequate staffing levels, optimize workflows, and provide nurses with the resources and support they need to manage their workload effectively. This may involve implementing innovative staffing models, such as flexible scheduling and team-based care, as well as providing opportunities for nurses to debrief and de-stress after challenging shifts. By prioritizing the well-being of nurses and creating a sustainable work environment, hospitals can empower nurses to focus on patient safety and contribute to a culture of continuous improvement.[13-15]

The findings of this study have significant implications for nursing practice, education, and policy. For nursing practice, the study underscores the importance of ongoing professional development and education on patient safety. This includes not only providing nurses with the knowledge and skills to identify and mitigate risks but also fostering a positive attitude towards safety culture. Educational interventions should be tailored to the specific needs and challenges faced by different groups of nurses, such as older nurses and those with high workloads. For nursing education, the study highlights the need to integrate patient safety principles into the curriculum from the earliest stages of training. By instilling a strong foundation in patient safety, nursing programs can prepare future nurses to be active participants in creating and sustaining a culture of safety. Additionally, nursing education should emphasize the importance of lifelong learning and adaptability, equipping nurses with the skills to navigate the ever-changing healthcare landscape and embrace new safety practices. For hospital management and policymakers, the study emphasizes the need to create a supportive work environment that prioritizes the well-being of nurses. This includes ensuring adequate staffing levels, providing resources

and training, and fostering a culture of open communication and collaboration. By investing in the nursing workforce and creating a positive work environment, hospitals can improve not only the attitudes of nurses towards patient safety but also the overall quality and safety of patient care. The identification of age and workload as significant risk factors for less positive attitudes towards patient safety culture is a critical finding of this study. By understanding the complex interplay between these factors, healthcare organizations can develop targeted interventions to enhance nurses' attitudes and promote a stronger culture of safety.[15-17]

The absence of a significant association between gender and years of experience with attitudes towards patient safety culture is somewhat surprising, given that previous research has reported mixed findings on these variables. However, it is important to note that the sample size of this study may have limited the power to detect subtle differences based on gender or experience. Further research with larger and more diverse samples is needed to fully elucidate the role of these factors in shaping nurses' attitudes toward patient safety. The findings of this study have several implications for nursing practice, education, and hospital management. First and foremost, they underscore the need for targeted interventions to enhance nurses' attitudes toward patient safety, particularly among older nurses and those with high workloads. These interventions may include tailored educational programs, mentorship opportunities, and stress management workshops. By addressing the specific needs and challenges faced by these groups, hospitals can foster a more positive and proactive safety culture.[16-18]

Second, the study highlights the importance of creating a supportive work environment that empowers nurses to prioritize patient safety. This includes providing adequate staffing levels, ensuring access to necessary resources and training, and fostering a culture of open communication and

collaboration. When nurses feel valued, supported, and empowered, they are more likely to embrace safety practices and contribute to a positive safety culture. Third, the findings emphasize the need for continuous evaluation and improvement of patient safety culture implementation. Hospitals should regularly assess their safety practices, identify areas for improvement, and implement evidence-based interventions to address any deficiencies. This ongoing process of evaluation and improvement is essential for sustaining a culture of safety and ensuring that patient safety remains a top priority. Finally, this study contributes to the growing body of knowledge on patient safety culture in Indonesia. By shedding light on the specific challenges and risk factors faced by nurses in this context, the study provides valuable insights for policymakers, healthcare leaders, and educators. These insights can inform the development of culturally relevant and context-specific interventions to strengthen patient safety culture and improve the quality of care delivered to patients in Indonesia.[19,20]

4. Conclusion

This study has revealed a complex interplay between nurses' attitudes, risk factors, and the implementation of patient safety culture in public hospitals dr. H. Moch. Ansari Saleh Banjarmasin, Indonesia. While the majority of nurses exhibited moderate attitudes towards patient safety, the level of implementation remains suboptimal. Age and workload were identified as significant risk factors for less positive attitudes, highlighting the need for targeted interventions to address these challenges. By fostering positive attitudes, creating a supportive work environment, and continuously evaluating and improving safety practices, hospitals can cultivate a robust patient safety culture that prioritizes the well-being of both patients and healthcare providers.

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