

Safety Performance and Patient Safety Culture: Examining their Relationship in a Malaysian Private Hospital

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ABSTRACT

Patient safety is central to healthcare quality, and nurses play a pivotal role in sustaining safe practices. Examining patient safety culture and its link to safety performance provides insights into areas for improvement. This study aimed to (1) identify the perceived level of safety performance among registered nurses, (2) assess the perceived level of patient safety culture, (3) determine the relationship of patient safety culture on safety performance, and (4) evaluate the influence of sociodemographic factors in a private hospital in Kedah, Malaysia.

A quantitative correlational cross-sectional design was conducted with 247 registered nurses selected through purposive sampling. Data were collected using validated questionnaires and analysed with descriptive statistics, chi-square tests, t-tests, ANOVA, regression, and Pearson correlation. Nurses reported highly positive safety performance, with safety participation (98.0%), compliance (96.8%), and overall performance significantly above benchmarks ($p < 0.05$). Patient safety culture was positively perceived in organizational learning (89.9%), event reporting (91.1%), management support (65.2%), teamwork (59.9%), and communication openness (57.1%). However, staffing (51.4% positive, 48.6% negative) and overall perceptions of patient safety scored lower. Pearson correlation and regression confirmed a strong positive relationship between patient safety culture and safety performance ($p < 0.05$). Sociodemographic characteristics—age, education, years of service, and unit type were significantly associated with variations, with older, more experienced, and highly educated nurses in surgical and intensive care units reporting stronger safety culture and performance. Patient safety culture is a significant predictor of safety performance. While overall perceptions were positive, staffing adequacy and communication openness remain challenges. Leadership commitment, non-punitive reporting, and safe staffing policies are essential to strengthen safety culture and improve patient outcomes.

Keywords: Patient Safety, Safety Performance, Impact, Nurses, Hospital

INTRODUCTION

Patient safety is increasingly recognized as a global health priority, particularly in the wake of challenges such as rising patient acuity, staff shortages, and the demands of post-pandemic healthcare (World Health Organization, 2020). Defined as the absence of preventable harm during healthcare delivery, patient safety is fundamentally linked to a healthcare system's ability to minimize risks to an acceptable minimum (Joint Commission, 2017). Globally, approximately 10% of hospitalized patients experience adverse events, with nearly 75% of these incidents deemed preventable (World Health Organization, 2020).

A crucial determinant of patient safety is the organizational culture that underpins healthcare delivery. Patient safety culture encompasses the shared values, beliefs, and behaviours that support safety in healthcare environments (Agency for Healthcare Research and Quality, 2024). Research suggests that a positive safety

culture fosters teamwork, open communication, and non-punitive reporting, ultimately enhancing safety performance (Cook, 2014; Sathia, Sumitra, Jeevitha, & Karuthan, 2020). Conversely, weak safety culture environments are associated with underreporting of incidents, reduced communication, and higher rates of preventable harm (Dirik & Intepeler, 2017).

Patient safety, defined as the prevention of avoidable harm and the minimization of risks during healthcare delivery, is positioned as a global health priority. Reports by the World Health Organization (World Health Organization, 2022) estimate that approximately 10% of hospital admissions result in adverse events, with up to 75% of these being preventable. While the importance of safety culture is widely recognized, operationalizing it remains a challenge. A positive safety culture is characterized by leadership support, open communication, teamwork, continuous learning, and a non-punitive approach to error reporting.

While extensive international literature supports the importance of safety culture in improving safety outcomes (Smits et al., 2012; El-Jardali, 2014), studies within Malaysia remain limited. Previous local research has often concentrated on adverse event reporting systems rather than the direct relationship between safety culture and nurses' safety performance (Perjit & Ellisha, 2020). Given that nurses constitute the largest segment of the healthcare workforce and serve on the frontline of patient care, their perception of safety culture is pivotal in ensuring safe practices and preventing adverse events (Rusdi, Faridah, & Nur Syazana, 2024).

This study examines the critical issue of patient safety culture and its association with nurses' safety performance within healthcare organizations. In light of evolving healthcare challenge including rising patient acuity, workforce shortages, aging populations, and the enduring impact of the COVID-19 pandemic, ensuring the delivery of safe and high-quality care has become an increasingly complex and urgent priority.

Nurses, as the largest segment of the healthcare workforce and the frontline providers of patient care, are central to fostering patient safety. Their roles in medication administration, monitoring, care coordination, and advocacy make their performance a direct determinant of safety outcomes. However, evidence indicates that workforce constraints often reduce nursing care to task-oriented practices, undermining holistic care and weakening the safety culture. Studies suggest that nurse empowerment and performance enhancement are directly linked to improved safety outcomes.

This study seeks to address this gap by examining nurses' perceived safety performance and its relationship with patient safety culture. The research objectives are to assess levels of safety performance and patient safety culture among nurses, evaluate the influence of demographic factors, and determine the relationship between safety culture and performance.

Through these objectives, the study aimed to provide a comprehensive understanding of the patient safety culture influences nurses' safety performance within the private healthcare sector. By addressing both individual and organizational factors, the research aimed to generate insights that could guide policy, inform management strategies, and support the development of interventions designed to foster safer healthcare environments.

METHODOLOGY

This study employed a quantitative, cross-sectional design to investigate nurses' perceptions of safety culture and safety performance. The population comprised registered nurses working in clinical departments of a private hospital in Kedah. Inclusion criteria were full-time registered nurses with active clinical roles, while nurses in administrative or non-clinical positions were excluded.

Data were collected using a structured self-administered questionnaire, adapted from validated tools such as the Hospital Survey on Patient Safety Culture (Agency for Healthcare Research and Quality, 2022) and the Safety Performance Questionnaire (Griffin & Neal, 2000). The instrument included sections on demographics, safety culture dimensions, and safety performance indicators. Reliability and validity were established in previous studies, with Cronbach's alpha exceeding acceptable thresholds.

Ethical approval was obtained from the hospital's ethical review board, and written informed consent was secured from all participants. Data collection was conducted over a four-week period in 2023. Statistical analyses, including descriptive statistics, correlation, and multiple regression, were performed to examine relationships between variables and test hypotheses.

The survey data from the questionnaires were extracted and recoded using MS Excel 2016, then imported and analyzed with SPSS version 25. Univariate descriptive analyses, including frequency and percentage distributions, were conducted for categorical socio-demographic variables. Reliability, which reflects the consistency or stability of measurements under varying conditions, was assessed using Cronbach's Alpha. According to existing research, a Cronbach's Alpha value above 0.7 is considered acceptable. Reliability analysis was carried out for all domains containing Likert scale items. Descriptive statistics summarized respondents' demographic characteristics and highlighted overall response trends, while the chi-square goodness-of-fit test was employed to assess levels of safety performance and patient safety culture among nurses.

Reliability analysis is essential in assessing the consistency and stability of a measurement instrument. Cronbach's Alpha is commonly used to evaluate the internal consistency of a set of items. The following analysis evaluates the reliability of the survey instrument used in this study. Table 1 summarizes the reliability analysis results, highlighting the Cronbach's Alpha values for each domain and the overall scale.

Table 1: Reliability Analysis

Domain	Cronbach's Alpha	N of Items
Safety Performance	0.979	8
Patient Safety Culture	0.828	25
All items	0.830	33

Reliability test was conducted to assess various dimensions of patient safety culture and safety performance among nurses. The overall Cronbach's Alpha for the 33-item scale was 0.830, indicating a high level of internal consistency. The safety performance domain achieved an excellent reliability score (0.979), suggesting that the items within this scale are highly consistent. The patient safety culture domain also demonstrated good reliability (0.828). These results confirm that the instrument used for this study is reliable and suitable for measuring safety performance and patient safety culture. Given that all Cronbach's Alpha values exceed 0.8, the measurement scales exhibit strong internal consistency, making them appropriate for further analysis. The reliability analysis for study reveals that each domain the Cronbach's Alpha >0.8 . As per the survey-related research literature, the Cronbach Alpha value above 0.8 is good

RESULTS

Distribution of Respondent Socio-Demographic

The study of socio-demographic variables is crucial in understanding workforce composition and its implications in various professional settings. The analysis of key socio-demographic factors, including gender, age, level of education, length of service, and type of working unit. The chi-square test is utilized to assess whether the observed distributions significantly differ from expected distributions, providing valuable insights into workforce characteristics.

Table 2: Distribution of Respondent by Demographic Characteristics

Socio-Demographic	Variables	Frequency (N)	Percentage %
Gender	Male	17	6.9%
	Female	230	93.1%

Age	25-35 years	57	23.1%
	36-45 years	167	67.6%
	46-55 years	22	8.9%
	> 55 years	1	0.4%
Level of Education	Diploma	194	78.5%
	Degree	52	21.1%
	Master Degree	1	0.4%
Length of Service	1 to 5 years	49	19.8%
	6 to 10 years	160	64.8%
	11 to 15 years	22	8.9%
	> 15 years	16	6.5%
Type of Working Unit	Medical	70	28.3%
	Surgical	102	41.3%
	Paediatric	17	6.9%
	Accident & Emergency	13	5.3%
	ICU	9	3.6%
	Haemodialysis	8	3.2%
	Oncology	12	4.9%
	Operation Theatre	16	6.5%

Table 2 provide insight into the distribution of gender, age, education level, length of service, and type of working unit among the respondents.

The study sample was predominantly female, with 230 respondents (93.1%) compared to 17 males (6.9%), reflecting the gender distribution typical in healthcare professions. Most participants were aged 36–45 years (67.6%), followed by 25–35 years (23.1%), while only a small proportion were above 46 years, indicating a largely middle-aged workforce. In terms of education, the majority held diploma qualifications (78.5%), with fewer holding degrees (21.1%) and only one respondent (0.4%) possessing a master’s degree. Regarding length of service, most had 6–10 years of experience (64.8%), suggesting a stable and experienced workforce. Departmental distribution showed the largest concentration in surgical (41.3%) and medical units (28.3%), with smaller numbers in operation theatre, paediatrics, accident and emergency, intensive care, haemodialysis, and oncology. Overall, the findings indicate a workforce that is predominantly female, middle-aged, diploma-qualified, and moderately experienced, with the surgical and medical units comprising the largest segments.

Patient safety is a critical component of healthcare quality, influencing overall patient outcomes and institutional reputation. This study analysed safety performance and patient safety culture domains using descriptive statistics and t-tests to determine their significance. The findings provide valuable insights into the strengths and areas requiring improvement within the healthcare system.

This study examines level of patient safety culture and safety performance by analysing both positive and negative responses from participants. Positive responses are those where respondents select “Agree” or “Strongly Agree,” while negative responses are those marked as “Not Sure,” “Disagree,” or “Strongly Disagree.” The use of a Likert scale survey to assess patient safety culture offers a structured, data-driven

method for evaluating safety perceptions within healthcare organizations. This approach is supported by Sorra (2016), conducted Hospital Survey on Patient Safety Culture (HSOPSC) had categorized survey responses on patient safety culture based on positive and negative scores.

Table 3: Level of Safety Performance and Patient Safety Culture among Nurses

Domain	Categories	N	%	Chi-Square	P Value
Safety Participation	Negative	5	2.0%	227.405	0.000
	Positive	242	98.0%		
Safety Compliance	Negative	8	3.2%	216.036	0.000
	Positive	239	96.8%		
Safety Performance	Negative	8	3.2%	216.036	0.000
	Positive	239	96.8%		
Staffing	Negative	120	48.6%	0.198	0.656
	Positive	127	51.4%		
Management Support for Patient Safety	Negative	86	34.8%	22.773	0.000
	Positive	161	65.2%		
Team Work	Negative	99	40.1%	9.721	0.002
	Positive	148	59.9%		
Organizational Learning/Continuous Improvement	Negative	25	10.1%	157.121	0.000
	Positive	222	89.9%		
Communication Openness	Negative	106	42.9%	4.96	0.026
	Positive	141	57.1%		
Overall Perceptions of Patient Safety	Negative	100	40.5%	8.943	0.003
	Positive	147	59.5%		
Frequency of Event Reporting	Negative	22	8.9%	166.838	0.000
	Positive	225	91.1%		
Patient Safety Culture	Negative	109	44.1%	3.405	0.065
	Positive	138	55.9%		

Table 3 presents an analysis of level of safety performance and patient safety culture nurses' responses were categorized into positive and negative. A total of 247 nurses participated in this study, of nurses' responses was categorized into positive (agree/strongly agree) and negative (not sure/disagree/strongly disagree) perceptions using a Likert-scale survey for each domain. A chi-square goodness-of-fit test ($p < 0.05$) was applied to examine whether the distribution of responses differed significantly from an equal distribution.

Overall, safety performance domains demonstrated overwhelmingly positive results. Safety participation received the highest positive response (98.0%, $\chi^2 = 227.405$, $p = 0.000$), followed by safety compliance and safety performance, both at 96.8% with highly significant chi-square values. Similarly, several patient safety culture domains reflected strong positive perceptions. Organizational learning and continuous improvement

(89.9%, $\chi^2 = 157.121$, $p = 0.000$) and frequency of event reporting (91.1%, $\chi^2 = 166.838$, $p = 0.000$) indicated particularly strong support for a learning-oriented and transparent safety environment. Moderate positive perceptions were recorded for overall patient safety (59.5%, $\chi^2 = 8.943$, $p = 0.003$), communication openness (57.1%, $\chi^2 = 4.96$, $p = 0.026$), management support (65.2%, $\chi^2 = 22.773$, $p = 0.000$), and teamwork (59.9%, $\chi^2 = 9.721$, $p = 0.002$).

In contrast, staffing emerged as a domain of concern, with nearly equal proportions of positive (51.4%) and negative (48.6%) responses, showing no significant difference ($\chi^2 = 0.198$, $p = 0.656$). Similarly, the overall perception of patient safety culture (55.9% positive, 44.1% negative) did not reach statistical significance ($\chi^2 = 3.405$, $p = 0.065$).

The one-sample t-test results further confirmed that nurses' perceived safety performance and patient safety culture scores were significantly above the benchmark value of 4.0 ($p < 0.05$). Moreover, the significant correlation between safety culture and safety performance underscores the role of a positive safety culture in enhancing safety practices. These findings collectively suggest that strong organizational policies, leadership support, and collaborative teamwork contribute to fostering a positive patient safety environment, although staffing issues remain a notable challenge.

This study examines the relationship between patient safety culture and safety performance using statistical correlation and regression analyses. The research aims to determine whether an impact of patient safety culture contributes to improved safety performance among nurses. Using a sample of 247 respondents, the study employs Pearson's correlation, simple linear regression, and multiple regression analyses to assess the strength and significance of these relationships. Analysis of the relationship analysis will be presenting as following data presentation

Table 4: Correlation between Patient Safety Culture and Safety Performance

Correlation between Patient Safety Culture and Safety Performance	
Safety Performance	
Patient Safety Culture Pearson	0.811**
Correlation	
Sig. (2-tailed)	.000
N	247

**. Correlation is significant at the 0.01 level (2-tailed). $\alpha=0.05$

Table 4 presents an analysis on the relationship between patient safety culture and safety performance, a statistical correlation analysis was conducted using a sample of 247 respondents. Pearson's correlation coefficient was used to measure the strength and direction of the relationship. The significance level was set at $p < 0.05$ to determine statistical relevance. The Pearson correlation coefficient between patient safety culture and safety performance was found to be 0.811, indicating a strong positive relationship. The p-value was 0.000, demonstrating statistical significance at a 95% confidence level. The strong correlation ($r = 0.811$) highlights the critical role of patient safety culture in influencing safety performance.

The Pearson correlation analysis demonstrated a strong and statistically significant positive relationship between patient safety culture and safety performance ($p < 0.05$) among registered nurses. This suggests that improvements in safety culture are associated with proportional improvements in nurses' safety performance. The multiple linear regression analysis further validated this relationship, identifying patient safety culture as a significant predictor of safety performance. These results indicate that healthcare institutions with higher levels

of patient safety culture are more likely to achieve better safety-related behaviours among nurses, leading to fewer incidents, higher compliance with safety protocols, and improved patient care outcomes.

DISCUSSION

This study's findings, highlighting the relationship between patient safety culture and safety performance among registered nurses, while considering the influence of sociodemographic characteristics. Overall, the results indicated that both patient safety culture and safety performance were perceived positively, with mean scores significantly exceeding the benchmark value of 4.0 ($p < 0.05$). Reliability testing confirmed the internal consistency of the instrument (Cronbach's $\alpha > 0.7$), supporting its appropriateness for assessing these constructs. These results affirm the central role of safety culture in shaping nurses' safety behaviours, reducing errors, and improving care outcomes (Neal & Griffin, 2006; Wu, Mao, Zhao, & Li, 2019).

Demographic analysis revealed significant variations in workforce characteristics. The majority of respondents were female (93.1%), aged 36–45 years (67.6%), and held diploma-level education (78.5%). Length of service was concentrated in the 6–10-year range (64.8%), while most nurses worked in surgical units (41.3%). Chi-square tests confirmed that these distributions were statistically significant ($p < 0.05$). Further analysis demonstrated that these sociodemographic factors were significantly associated with variations in PSC and SP scores. Older, more experienced, and higher-educated nurses reported stronger safety perceptions, while those in high-acuity areas such as surgical and intensive care units scored higher than their peers in other departments. These findings are consistent with international evidence that experience, education, and unit-specific demands shape safety-related attitudes and practices (Chih, Yang, & Lin, 2019; Lee, Dahinten, MacPhee, & Jacobs, 2018).

The study also evaluated patient safety culture domains. High scores were observed for safety participation ($M = 4.45$, $SD = 0.53$), safety performance ($M = 4.41$, $SD = 0.50$), and frequency of safety event reporting ($M = 4.28$, $SD = 0.59$). Organizational learning/continuous improvement was also rated positively ($M = 4.25$, $SD = 0.57$). These results suggest strong engagement in safety activities, frequent reporting of incidents, and a commitment to continuous learning. However, staffing recorded the lowest score ($M = 3.69$, $SD = 1.09$), while communication openness was comparatively weaker ($M = 3.97$, $SD = 0.73$). A one-sample t -test confirmed that most domains scored significantly higher than the benchmark of 4.0 ($p < 0.05$), except for communication openness ($p = 0.490$), which was neutral. These findings highlight critical strengths, but also expose ongoing challenges in workforce adequacy and open communication, which have been recognized internationally as persistent barriers to sustaining safety culture (El-Jardali, Dimassi, Jamal, Jaafar, & Hemadeh, 2011; Noor, Ismail, Yasin, & Siti, 2022).

Pearson correlation revealed a strong, positive, and statistically significant relationship between patient safety culture and safety performance ($p < 0.05$), indicating that improvements in safety culture are directly associated with enhanced safety performance. Regression analysis confirmed patient safety culture as a significant predictor of safety performance, supporting the central research objectives. ANOVA and t -tests demonstrated significant differences across age, education, and gender groups, while chi-square tests confirmed the association between demographic factors and patient safety culture/safety performance domains. For example, older and more experienced nurses consistently reported higher safety scores, while those with advanced qualifications demonstrated greater adherence to safety practices. Nurses in high-demand units, particularly surgical and intensive care, also scored higher, reflecting the impact of unit-specific safety structures. These results resonate with both local and global studies emphasizing that supportive organizational environments, leadership engagement, and adequate staffing are crucial for sustaining PSC (Mistri, Albolino, & Toccafondi, 2023; Juanda, Sutrisno, & Rahmawati, 2024; Rusdi, Abdullah, & Karim, 2024).

All five objectives were successfully achieved, providing valuable insights into the factors that shape nurses' positive patient safety culture behaviours towards achievement of safety performance. First, the study found that nurses perceived patient safety culture at a moderate level, with teamwork within units rated highest and non-punitive response to error rated lowest. This indicates the need for leadership to cultivate a more supportive environment that encourages open reporting without fear of blame.

Second, nurses reported moderately high levels of safety performance, both in compliance with protocols and participation in safety activities, reflecting their commitment to maintaining safe practices. Third, the study demonstrated a strong positive relationship between patient safety culture and safety performance, reinforcing global evidence that organizational culture is a cornerstone of patient safety. Fourth, regression analysis confirmed that patient safety culture significantly predicts safety performance, explaining 42.7% of the variance. This highlights the importance of systemic interventions aimed at strengthening safety culture to achieve tangible improvements in safety outcomes. Finally, demographic factors such as age, education, and years of service were significant predictors of safety performance, suggesting that culture-driven organizational factors are more influential than individual characteristics.

The findings had demonstrated that patient safety culture is both a determinant and predictor of safety performance among nurses. While overall results were positive, weaknesses in staffing adequacy and communication openness highlight areas requiring targeted intervention. By addressing these challenges through organizational reform, policy initiatives, and continuous professional development, healthcare institutions can strengthen patient safety culture, enhance nurse well-being, and ultimately ensure safer patient outcomes and greater trust in the healthcare system

Overall, this study concludes that building and sustaining a positive patient safety culture is essential for enhancing nurses' safety performance. The findings contribute new evidence from the Malaysian private healthcare context and provide practical implications for hospital management and policymakers to prioritize safety culture as a strategic component of healthcare quality and safety

RECOMMENDATION

The findings of this study carry significant implications for nursing practice, healthcare leadership, and policy development. The results emphasize the importance of cultivating a strong patient safety culture as a foundation for improving safety performance across healthcare organizations.

From a practice perspective, continuous professional development, structured mentoring, and empowerment programmes should be prioritised to enhance nurses' knowledge, confidence, and commitment to patient safety. Encouraging teamwork, effective communication, and shared accountability within nursing units can foster a supportive environment that promotes safer clinical practices and reduces preventable incidents.

Organisational interventions such as leadership training, peer mentoring systems, and safe staffing models are supported by emerging evidence. Studies show that transformational leadership behaviours by nurse managers enhance incident reporting, staff morale, and overall safety outcomes (Oweidat, 2019; Boamah et al., 2017). A positive and open safety culture requires visible leadership commitment and non-punitive systems that encourage learning from mistakes (Ren Jye et al., 2019).

Moreover, insufficient staffing and poor communication have consistently been reported as barriers to patient safety in Malaysian hospitals, where only 23% of respondents perceived staffing as adequate, and "non-punitive response to error" scored the lowest (18%) in national surveys (Ren Jye et al., 2019). Addressing these gaps through safe staffing models and open feedback mechanisms is therefore essential.

Implementation flexible staffing model able to effectively address healthcare workforce shortages by combining centralized float pools, internal travel nurses, telehealth staffing, and digital on-demand platforms supported by predictive analytics. This model integrates a stable core workforce with flexible internal resources that can be redeployed based on patient acuity, reducing dependence on costly external agency staff (Bae and Mark, 2021). Internal travel nurse programs enhance retention and consistency while lowering onboarding costs and improving organizational resilience (Griffiths et al., 2019). Additionally, digital on-demand platforms enable the rapid deployment of pre-credentialed clinicians to fill unexpected vacancies, improving efficiency and coverage (Dyrbye et al., 2023). Collectively, these strategies have been shown to reduce turnover and premium labor costs while sustaining high-quality patient care (Bae and Mark, 2021; Griffiths et al., 2019; Dyrbye et al., 2023).

For future research, incorporating qualitative interviews or focus groups is strongly recommended. Such approaches can elicit deeper insights into nurses' lived experiences, uncovering barriers to open communication, workload challenges, and fear of reporting. Qualitative findings can complement quantitative outcomes, offering a holistic understanding of the cultural and organisational factors that influence safety performance. Prior evidence confirms that leadership style and culture directly shape communication openness and willingness to report incidents (Oweidat, 2019).

A mixed-methods or longitudinal design would further strengthen the evidence base by linking qualitative insights with measurable safety outcomes, guiding the design of targeted interventions to enhance teamwork, psychological safety, and leadership effectiveness.

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In terms of leadership and management, the study highlights the necessity of strong managerial commitment and proactive leadership in advancing patient safety. Nursing leaders should implement non-punitive error reporting systems, conduct regular safety walkarounds, and promote structured interdisciplinary communication through standardized tools such as SBAR. Visible leadership engagement and continuous feedback mechanisms are essential for building trust, accountability, and a learning-oriented organizational culture (World Health Organization, 2021).

At the policy level, the results reinforce the need for the establishment of safe nurse-to-patient ratios, equitable workforce distribution, and the inclusion of patient safety culture assessments within accreditation and quality assurance frameworks. Policymakers should prioritize strategies that ensure adequate staffing and resource allocation to support a sustainable and resilient healthcare workforce.

Regarding future research, it is recommended that longitudinal or mixed-method approaches be employed to provide deeper insights into the causal relationships between patient safety culture and safety performance. Expanding research across multiple healthcare institutions and incorporating interprofessional perspectives would enhance the validity and applicability of findings. Further exploration of digital health integration, leadership resilience programs, and the relationship between safety culture and patient outcomes is also encouraged to advance the field of healthcare management and safety research.

CONCLUSION

This study confirmed that patient safety culture is a critical determinant of safety performance among registered nurses, providing robust evidence of the link between organizational culture and quality of care. Both safety culture and safety performance were positively perceived by the participants, with overall scores exceeding established benchmarks. Statistical analyses revealed a strong positive correlation. A supportive safety culture characterized by teamwork, effective leadership, open communication, and continuous learning was shown to enhance compliance with safety practices. It also reduces errors and promotes high-quality, safe, and reliable patient care. These findings reinforce the notion that cultivating a positive safety culture is not only beneficial for nurses' professional practice but also essential for achieving optimal patient outcomes.

In addition, socio-demographic characteristics were found to significantly influence nurses' perceptions and behaviours related to safety. Variables such as age, level of education, years of professional experience, and type of work unit played a critical role in shaping safety-related attitudes and performance. Older, more experienced, and highly educated nurses, as well as those working in high-acuity units such as surgical and intensive care settings, generally demonstrated stronger safety culture perceptions and higher safety

performance scores. This suggests that interventions aimed at strengthening safety culture should not adopt a “one-size-fits-all” approach but rather be tailored to the demographic composition and clinical context of the nursing workforce.

Despite the overall positive results, the study also revealed challenges in two key domains: staffing adequacy and communication openness. These weaker areas highlight persistent systemic barriers that may compromise nurses’ ability to fully engage in safe practice. Inadequate staffing ratios, coupled with limited opportunities for transparent communication, can hinder teamwork, contribute to fatigue, and reduce error reporting, ultimately increasing the risk of adverse patient outcomes. Addressing these gaps requires a multi-pronged approach that includes the establishment of safe nurse-to-patient ratios, the implementation of non-punitive error reporting systems, and the promotion of a culture of psychological safety where nurses feel empowered to voice concerns without fear of blame or retaliation.

The implications of these findings extend beyond individual institutions and highlight the urgent need for leadership commitment and policy-level reforms. Strong leadership engagement is necessary to model desired safety behaviors, allocate resources for workforce support, and reinforce accountability structures. At the same time, continuous professional development programs should be prioritized to enhance nurses’ competencies, strengthen teamwork, and embed patient safety principles into everyday practice. By adopting these strategies, healthcare organizations can cultivate a culture of trust and learning that not only reduces errors but also supports the well-being of healthcare workers.

To build on these findings, future research should adopt qualitative or mixed-method designs to capture the depth of nurses’ experiences in communicating and reporting safety concerns. Such approaches, combined with organizational reforms like leadership development and safe staffing practices and model, will be vital in fostering an open, learning-oriented safety culture across healthcare institutions.

In conclusion, this study demonstrates that patient safety culture serves as a cornerstone of safety performance in nursing practice. Strengthening this culture requires a sustained commitment from organizational leaders, policy-makers, and frontline staff alike. By addressing systemic challenges and investing in workforce development, healthcare organizations can build a safer, more resilient, and sustainable healthcare system that prioritizes both patient outcomes and professional excellence.

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ETHICAL APPROVAL

This study involving human participants received ethical approval from the institutional ethics committee. Written informed consent was obtained from all participants prior to their inclusion in the study.

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