International Journal of Research Studies in Psychology
2023 Volume 9 Number 2, 87-96

Risk compromising patient safety: Nurse perspective

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Received: 30 November 2023 **Revised**: 20 December 2023 **Accepted**: 31 December 2023
Available Online: 31 December 2023 **DOI**: 10.5861/ijrsp.2023.2015

ISSN: 2243-7681
Online ISSN: 2243-769X

OPEN ACCESS

Abstract

Patient safety is a critical concern in healthcare systems worldwide. Despite extensive research, much is still unknown about the factors that contribute to patient safety. Nurses play a pivotal role in promoting and ensuring patient safety, and their perspectives are essential for understanding the risks that compromise patient safety. This study adopted a mixed-methods approach to investigate the risks of compromising patient safety from the perspective of nurses. The quantitative component of the study surveyed nurses about their perceptions of the risks to patient safety. The qualitative component of the study conducted interviews with nurses to gain a deeper understanding of their experiences and perspectives on patient safety. The findings of the study suggest that the following factors are associated with an increased risk of patient safety such as high workload and stress, lack of resources and support, communication problems, inadequate training, fatigue, and lack of teamwork among nurses. The findings of this study provide valuable insights into the risks that compromise patient safety from the perspective of nurses. These insights can be used to develop proactive measures to mitigate risks and improve patient safety within healthcare settings. The findings of the study also suggested that nurses had several recommendations for improving patient safety, including reducing workload and stress, increasing resources and support, improving communication, and providing more training among nurses.

Keywords: patient safety, nurses, compromise, risk factors, mixed-methods research

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Risk compromising patient safety: Nurse perspective

1. Introduction

Patient safety remains a global concern in healthcare, with nurses playing a pivotal role in its promotion. Despite extensive research, gaps persist in understanding the multifaceted factors influencing patient safety. According to the World Health Organization (WHO), patient safety involves preventing harm to patients resulting from the care they receive. The complexity of healthcare systems and the evolving nature of medical harm led to the emergence of patient safety as a distinct medical specialty (WHO). Nurses, responsible for 24/7 patient care, are uniquely positioned to identify and mitigate risks to patient safety. Interruptions and operational challenges, such as equipment malfunctions, pose difficulties, especially in drug administration, linking these issues to an increased risk of errors (Sloane et al., 2018).

This study, conducted at St. Frances Cabrini Medical Center, explores the perceived elements contributing to patient safety risks from the perspective of nurses. Utilizing a mixed-methods approach, combining quantitative and qualitative data, the research aims to identify common risk factors and gain a deeper understanding of nurses' experiences and perspectives on patient safety. The findings of this study are expected to provide valuable insights that can inform the development of proactive measures to mitigate risks and enhance patient safety in healthcare settings. The urgency of addressing patient safety aligns with the global concern highlighted by the WHO, emphasizing the significance of this research in contributing to a safer healthcare environment worldwide (WHO).

The Philippines' HRH shortages and inequality result in differences in the quality of health care services provided, which has an influence on crucial PHC services like TB and family planning (FP) (Aytona M. et al., 2022). Baljoon et al. (2019) found that both personal and organizational factors can influence motivation among nurses. Personal aspects, such as perceptions of teamwork, continuous learning, and autonomy, motivate nurses to prioritize patient safety. Once their effectiveness has been established, policies encouraging or mandating such technologies and approaches across diverse healthcare contexts can pave the way for a "Golden Age of Patient Safety" (Bates & Singh, 2018).

Interestingly, a Swedish study conducted on surgical wards discovered that nurses with extensive job experience exhibited lower adherence to the use of disposable gloves, which was an unexpected finding (Bahar S., 2020). Additionally, nurses' positive attitudes toward the culture of patient safety can influence long-term patient safety practices. Implementing suitable interventions, such as staff-to-patient safety culture orientation and effective event reporting systems, is crucial for enhancing and sustaining quality improvement (Abdelaliem & Alsenany, 2022). These contributing elements often interact with each other, albeit differently, for different populations experiencing severe outcomes. Closing the skill gap becomes crucial, as resident safety heavily relies on qualified staff and accurate health records. Unfortunately, healthcare professionals often underestimate this gap (Anderson et al. 2022). Regarding documentation duties, some employees admitted to occasionally neglecting important information, leading to adverse events. Lack of time and shared responsibility contribute to consistent or complete documentation (Bjerkan, Valderaune, & Olsen, 2021). Systematic reviews, such as the one conducted by da Fonseca et al. (2021), contribute to the targeted implementation of techniques and technologies in different healthcare processes while considering the context of each country.

The theory can also be used to develop training programs that allow nurses to acquire practical signal-detecting skills (Despins, et al. 010). Inadequate staffing has consistently been identified as a significant factor associated with an increased risk of nosocomial infections (Di Muzio et al., 2019; Saville et al., 2019; Shang et al., 2019). Nurses believe prolonged stays in the emergency room harm patient care and safety, as well as their emotional well-being. Balancing essential nursing care with workload becomes challenging, often

resulting in feelings of loss of control (Eriksson et al., 2018). Fischer, et al (2018) systematically evaluated leadership and safety literature in collaboration with a panel of 20 international experts. These findings emphasize how crucial it is to solve staffing concerns and strengthen the professionalism and competency of nurses to get the best results for patient safety (Feliciano A. et al., 2020). Patient harm during treatment, resulting from nursing mistakes and negligence, ranks among the top ten global causes of disability and mortality (Harvard Global Health Institute, 2020).

As part of their career, nurses constantly seek to understand, acquire, improve, and apply these skills needed to improve patient care (Hancock K., 2018). Themes are regular patterns that appear in numerous data sets, are essential for characterizing a phenomenon, and are associated with a specific area of study (Javadi & Zarea, 2016). Liu, et al. (2019) conducted a study demonstrating a significant association between adverse nurse outcomes (e.g., job dissatisfaction and burnout) and the provision of unsafe patient care. The ability of an individual to successfully differentiate signals from a vast number of distinct stimuli is measured by sensitivity (Wickens, MacMillan, & Creelman 2005). Furthermore, Manag (2021), concluded in her study that during the COVID-19 pandemic, nurses' mental workload increased. Signal detection theory (SDT) is a psychological paradigm that studies the cognitive processes underpinning the perception and recognition of external signals such as sounds, images, and language (Phillips et al,, 2001). Inadequate staffing has consistently been identified as a significant factor associated with an increased risk of nosocomial infections (Di Muzio et al., 2019; Saville et al., 2019; Shang et al., 2019). Additionally, the lack of competence and professionalism among staff nurses has been found to profoundly impact patient safety, affecting physical, emotional, and psychological aspects (Sholl et al., 2019). These interruptions have been associated with an elevated risk of errors, particularly those involving the administration of drugs. However, some breaks are essential for patient care (Sloane, Smith, McHugh, et al., 2018). For example, research by Willcocks (2020) suggests that nurses prioritize learning new strategies to improve team dynamics and promote teamwork, contributing to better patient safety outcomes.

2. Methods

The study utilized a mixed-methods approach, integrating both qualitative and quantitative methodologies. Quantitative methods were employed to assess hospital safety policies and identify patient safety risk factors, while qualitative methods were used to explore nurses' perspectives on patient safety. Conducted in a private hospital in Sto.Tomas, Batangas, the study focused on all nurses currently practicing in various specialty areas such as operating room, hemodialysis unit, emergency room, oncology unit, general ward, intensive care unit and nursing service department. The study involved cooperation from nurses at St. Frances Cabrini Medical Center, with all practicing nurses included (n=64) using purposive sampling. Additionally, 15 nurses were selected for in-depth interviews to provide qualitative data. Participants were assured of anonymity, confidentiality, and voluntary participation. Individual profiles of 15 nurses who participated in qualitative interviews were provided, offering diverse demographic backgrounds, experiences, and roles within the hospital.

Permission from hospital administrations was obtained before data collection. A cross-sectional survey, consisting of 20 Likert-scale questions, was administered to the 64 participants, followed by semi-structured interviews with the 15 nurses. Data collection procedures adhered to ethical standards, ensuring participant confidentiality and voluntary participation. Quantitative data underwent descriptive statistical analysis using SPSS version 25, including frequency distribution, weighted mean, and Mann-Whitney tests. Qualitative data were transcribed and analyzed using thematic analysis to identify patterns and themes, providing a comprehensive understanding of nurses' perspectives on patient safety.

The study adhered to ethical standards outlined by general research ethics, obtaining approval from the LPU-B-Research Ethics Review Committee. Participants were informed of the study's objectives, methods, and their voluntary participation. The principles of respect for individuals, beneficence, and justice, as outlined in the Belmont Report, were strictly followed, ensuring participant rights, dignity, and welfare were protected throughout the study.

3. Results

Table 1

Demographic profile of the respondents

	Profile Variables	Frequency	Percentage
Age	20 - 25	16	25.0
	26 - 30	12	18.8
	31 - 35	27	42.2
	36 - 40	7	10.9
	41 and above	2	3.1
Gender	Male	17	26.6
	Female	47	73.4
Years of Experience	Less than 1 year	18	28.1
	1 – 2 years	12	18.8
	3 – 5 years	12	18.8
	6 – 9 years	18	28.1
	10 years and above	4	6.3

From the total respondents of 64, it can be seen from table 1 that the highest percentage of nurses was 27 (42.2%) aged 31-35 years old. Followed by 16 (25%) aged 20-25 years old, 12 (18.8%) nurses aged 26-30 years old while 7(10.9%) aged 36-40 years old, and only 2 (3.1%) were 41 years old and above. The majority of the respondents were females, 47 (73.4%) and males 17 (26.6%). There were an equal number of 18 nurses who worked for less than 1 year and 6-9 years (28.1%) and an equal number of 12 nurses who worked for 1-2 years and 3-5 years (18.8%) while only 4 nurses (6.35) are working for 10 years and above. According to a survey by "UP Population Institute" Young people and women make up the majority of the health profession. The millennial generation, or those under the age of 35, make up 65% of individuals working in the health sector. Only 5% of the nation's health professionals are 60 years of age or older. In the Philippines, medical professionals are on average 35 years old for women and 33 years old for males (HRH, n.d).

Table 2

Hospital Safety Practices

Indicators	WM	VI	Rank
Safety practices signages and fosters were posted in the work unit	4.44	Agree	6.5
Standardized practices across the hospital are utilized by all work units.	4.28	Agree	10
Hospital administration fosters a work environment that supports patient safety	4.47	Agree	4
Hospital policies, safety protocol, and procedure manual about safety practices are available in every unit for easy access.	4.53	Strongly Agree	3
The hospital is undergoing accreditation on patient safety to review the policy to keep up with current technology and best practices	4.56	Strongly Agree	1.5
A policy and hospital safety management software stores all hospital policies and procedures in one central, secure location.	4.44	Agree	6.5
Staff may speak out if they see something that may jeopardize patient care.	4.56	Strongly Agree	1.5
Regular policy review is implemented to see that hospitals are reviewing and maintaining policies to keep up with current technology and best practices.	4.34	Agree	9
The hospital kept track of the stated mistake affecting patient safety for quality improvement.	4.45	Agree	5
The hospital administrations continuously support the staff development program to enhance nurses' skills and ability in patient care which ensures patient safety for free.	4.42	Agree	8
Composite Mean	4.45	Agree	

Table 2 shows the hospital safety practices with a composite mean of 4.45 verbally interpreted as agree. Two indicators, "The hospital is undergoing accreditation on patient safety to review the policy to keep up with current technology and best practices" and "Staff may speak out if they see something that may jeopardize patient care" both obtained the highest weighted mean of 4.56 followed by "Hospital policies, safety protocol, and procedure manual about safety practices are available in every unit for easy access" (4.53) which were interpreted as strongly agree. The rest of the indicators were interpreted as agree, "Hospital administration fosters a work environment that supports patient safety" (4.47), "The hospital kept track of the stated mistake

affecting patient safety for quality improvement" (4.45), "Safety practices signages and fosters were posted in the work unit" and "A policy and hospital safety management software stores all hospital policies and procedures in one central, secure location" (4.44), "The hospital administrations continuously support the staff development program to enhance nurses' skills and ability in patient care which ensures patient safety for free" (4.42), "Regular policy review is implemented to see that hospitals are reviewing and maintaining policies to keep up with current technology and best practices" (4.34) and "Standardized practices across the hospital are utilized by all work units" (4.28).

Table 3

Risk Factors Compromising Patient Safety

. Indicators	WM	VI	Rank
Delayed implementation of nursing care due to scarcity of supplies and staff.	3.78	Agree	5
Lack of knowledge in the implementation of safe nursing care.	3.44	Neither	8
When there is a lot of pressure, my team leader/supervisor expects us to work quicker, even if it means using shortcuts.	3.06	Neither	10
Longer shifts and working overtime.	4.22	Agree	2
Unclear doctor's order.	3.73	Agree	6
Medication administration error.	3.59	Agree	7
An excess number of patients beyond the nurse-patient ratio.	4.31	Agree	1
Interruptions in the provision of care due to operational failures and malfunctioning equipment.	3.92	Agree	3
Lack of experienced nurses due to nurse turnovers.	3.89	Agree	4
Complications related to Hospital-acquired infections	3.42	Neither	9
Composite Mean	3.71	Agree	

Table 3 shows the Risk Factors Compromising Patient Safety with a composite mean of 3.71 verbally interpreted as agree. The risk factor of "an excess number of patients beyond the nurse-patient" obtained the highest weighted mean of 4.31 which was agreed upon by the nurses. The next indicator was "longer shifts and working overtime" verbally interpreted as agree with a composite mean of 4.22 followed by "interruptions in the provision of care due to operational failures and malfunctioning equipment" (3.92). verbally interpreted as agree. The rest of the indicators were interpreted as agree, "Lack of experienced nurses due to nurse turnovers" (3.89), "Delayed implementation of nursing care due to scarcity of supplies and staff" (3.78), "Unclear doctor's order" (3.73) and "Medication administration error" (3.59). Three indicators were interpreted as neither, "Lack of knowledge in the implementation of safe nursing care" (3.44), "Complications related to Hospital-acquired infections" (3.42), and "When there is a lot of pressure, my team leader/supervisor expects us to work quicker, even if it means using shortcuts" (3.06). Furthermore, Manag (2021), concluded in her study that during the COVID-19 pandemic, nurses' mental workload increased. Given the negative impact of mental workload on nurses' behavior and performance, the improvement in their job performance and its weak positive correlation with their mental workload should be investigated further.

Table 4

Difference of Responses on Hospital Safety Practices When the Respondents Are Grouped According to Profile

Profile Variables	U/ λ^2 c	p-value	Interpretation
Age	18.414	0.001	Significant
Gender	368.000	0.630	Not Significant
Work Experience	1.607	0.398	Not Significant

Legend; Significant at p-value<0.05

There was statistically no significant difference in hospital safety practices when the respondents were grouped according to gender and work experience because the computed p-values were greater than 0.05. The hospital safety practices were the same regardless of the respondents' gender and work experience. However, there was a statistically significant difference in hospital safety practices (p=0.001) when the respondents were grouped according to age because the computed p-value was less than 0.05. Post hoc test revealed that there was a significant difference in responses between the age group 20-25 and the age group 31-35. The respondents from the age group 20-25 have better hospital safety practices than respondents from group 31-35. Post hoc test also revealed that there was a significant difference in responses between the age group 31-35 and age group 41

and above. The respondents from age group 41 and above have better hospital safety practices than respondents from group 31-35. Two possible explanations were proposed for this finding. Firstly, experienced nurses may possess a more critical evaluation of safety issues compared to inexperienced nurses. Secondly, it is speculated that younger nurses receive more support from management due to their lack of experience. Interestingly, a Swedish study conducted on surgical wards discovered that nurses with extensive job experience exhibited lower adherence to the use of disposable gloves, which was an unexpected finding (Bahar S., 2020).

Table 5

Difference of Responses on Risk Factors Compromising Patient Safety When the Respondents Are Grouped According to Profile

Profile Variables	U/ λ^2 c	p-value	Interpretation
Age	5.811	0.214	Not Significant
Gender	344.000	0.398	Not Significant
Work Experience	0.115	0.735	Not Significant

Legend; Significant at p-value<0.05

There was statistically no significant difference in risk factors compromising patient safety when the respondents were grouped according to age, gender, and work experience because the computed p-values were greater than 0.05. The risk factors compromising patient safety are the same regardless of the respondent's age, gender, and work experience.

Table 6

Relationship Between Hospital Safety Practices and Risk Factors Compromising Patient Safety

Variables	Spearman's Rho	p-value	Interpretation
Hospital Safety Practices and Risk Factors Compromising Patient Safety	0.078	0.542	Not Significant

Legend: Significant at p-value < 0.01

There was statistically no significant relationship between the hospital safety practices and risk factors compromising patient safety because the computed p-value was greater than 0.01. The risk factors compromising patient safety were not dependent on hospital safety practices. A total of 15 nurses were successfully interviewed for qualitative data. Of those interviewed 9 were ward nurses, 1 from the ICU, 1 from the Emergency Department, 2 from Operating Room Department, 1 from the Hemodialysis, and 1 from the Nursing Service Department. Nurse perspectives on patient safety were thematically categorized into themes.

Theme 1: Patient Safety at Risk

When some elements or circumstances could endanger or harm patients, patient safety in healthcare is at risk. Several things, such as medical errors, poor communication, equipment breakdowns, or a disregard for set rules and guidelines, could cause these dangers. Patients may experience negative occurrences, such as prescription errors, surgical complications, infections, or falls when safety is in danger. Profound implications from these occurrences may include harm, disabling conditions, extended hospital stays, or even death. As a result, healthcare institutions must evaluate patient safety hazards continuously, educate and train employees, apply evidence-based guidelines and practices, and use safety systems and technology.

3.1.1 Sub-Theme 1: Infection Control Protocols. The theme underscores the critical role of adhering to infection control protocols, emphasizing routine handwashing, appropriate use of gloves and masks, and sanitation practices. Respondents highlighted the importance of these protocols in safeguarding patients, healthcare workers, and visitors from infectious threats. Adherence to these guidelines creates a secure healthcare environment.

3.1.2 Sub-Theme 2: Equipment Malfunction. This sub-theme emphasizes the significant threat posed by equipment malfunctions, as noted by multiple respondents. Malfunctioning equipment, improper use, and defects were identified as risk factors for patient safety. The potential consequences include patient harm, delayed

treatment, increased costs, reduced efficiency, and damage to the healthcare organization's reputation. Mitigating these risks involves effective maintenance, routine inspections, and staff training.

3.1.3 Sub-Theme 3: Miscalculations. The sub-theme highlights medication and laboratory errors as a significant risk to patient safety, with potential adverse effects such as allergic reactions or pharmaceutical toxicity and inaccurate diagnosis. Medication errors can occur at various stages, including prescribing, dispensing, and administration. Implementing safety protocols, computerized physician order entry systems, and promoting effective communication among healthcare professionals are essential to mitigate these risks.

3.1.4 Sub-Theme 4: Patient Education and Teamwork. This sub-theme emphasizes the importance of patient education to prevent adverse outcomes. Lack of patient comprehension can lead to self-medication, non-adherence to treatment plans, and failure to recognize warning signs. Effective health education should include information about illnesses, treatment plans, and lifestyle choices. Additionally, fostering a culture of high dependability through effective teamwork and communication is crucial for patient safety.

Theme 2: Sufficient Staffing and Staff Skills and Demeanor

3.2.1 Sub-Theme 1: Nurse-patient Ratios and Staffing Shortages. This theme emphasizes the impact of staffing levels on patient safety, highlighting that under-staffing limits time for patient care and increases the risk of errors and injuries. Adequate staffing is crucial for managing patient care, responding to emergencies, and preventing compromised patient safety.

3.2.2 Sub-Theme 2: Lack of Knowledge and Skills. The sub-theme underscores the risks associated with a nurse's lack of knowledge or skills, leading to potential patient harm. Organizational support in the form of ongoing education, training, and resource provision is essential to empower nurses in delivering safe and effective patient care.

3.2.3 Sub-Theme 3: Healthcare Worker Safety and Personal Protective Equipment (PPE) This sub-theme emphasizes the importance of healthcare worker safety, particularly during the COVID-19 pandemic. A shortage of personal protective equipment (PPE) can compromise the safety of both healthcare workers and patients. Ensuring an adequate supply of PPE and proper training on its use is crucial for maintaining a safe working environment.

4. Conclusion and Recommendations

The surveyed nurses, primarily aged 31-35 years (42.2%) and predominantly female (73.4%), exhibited diverse work experiences, with equal representation in various experience brackets. The majority had less than one year or 6-9 years of experience, while smaller proportions fell into other categories. The nurses generally adhered to implemented hospital safety practices, evidenced by a composite mean of 4.5 and unanimous agreement among respondents. No statistically significant differences were observed when grouping respondents by gender and work experience. A lack of a significant relationship between hospital safety practices and patient safety risk factors suggested that other healthcare system factors also influenced patient safety, extending beyond adherence to safety practices. Nurses identified critical patient safety risk factors, including lapses in infection control, equipment malfunctions, staffing shortages, knowledge gaps, errors, and miscommunication. These insights emphasized the multifaceted nature of patient safety challenges. Safeguarding patient safety requires a collaborative, multifaceted approach involving healthcare professionals, institutions, and patients. By prioritizing patient safety and implementing proactive measures, healthcare organizations can foster a safety culture and ensure optimal patient care.

The following are the suggested strategies to be taken to ensure and promote patient safety in healthcare settings; these include Establish Safety Committees and Training: Create safety committees to address patient safety issues and provide practical staff orientation and training programs. Implement Strict Policies and

Protocols: Develop clear policies and protocols for infection control, medication administration, and equipment handling. Ensure Proper Nurse-Patient Ratios: Adequate staffing levels are crucial to providing safe and effective patient care. Healthcare organizations should strive to maintain appropriate nurse-patient ratios to prevent fatigue and allow healthcare professionals to provide optimal care. Foster a Safety Culture and Teamwork Environment: Encourage personnel to report safety issues, maintain open communication, and build a friendly and cooperative team environment. Utilize Technology and Advanced Equipment: Embrace technological advancements like electronic medical record systems, barcode medication administration, and automated monitoring systems. Prioritize Mental Health and Education: Recognize the importance of mental health and adequate rest for healthcare workers and offer continuing education and professional development programs. To enhance patient safety, healthcare organizations should establish comprehensive policies and procedures, provide adequate education and training to healthcare professionals, implement strict protocols, foster a culture of safety and teamwork, leverage technology, and ensure appropriate staffing and time management. Additionally, patient education and awareness, reinforcement of disinfection protocols, and continuous monitoring of quality care are essential components of ensuring patient safety.

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