International Journal of Health Sciences and Research
[Indexed, Peer-Reviewed Journal]
Volume 15; Issue: 6; June 2025
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Perception on Patient Safety Culture Among Nurses in a Hospital

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DOI: https://doi.org/10.52403/ijhsr.20250623

ABSTRACT

Background: Patient Safety Culture is the vital component of quality health care system. World Health Organization defines Patient Safety as the prevention of errors and adverse effects to patients related to health care. It has been clarified that patient harm is the 14th leading cause of morbidity and mortality. Nurses, being the primary point of contact, play a vital role in patient safety culture. Thus, this study assessed the Patient Safety Culture among the nurses in hospital.

Methodology: A descriptive cross-sectional study was conducted among the 92 nurses from different departments/units/wards at Manmohan Memorial Medical College and Teaching Hospital, Kathmandu. Probability Proportionate to Size sampling technique to select the sample was used. The Self-administered Standard Tool by Agency for Health Care Research and Quality (AHRQ) named Hospital Survey on Patient Safety Culture (HSOPSC) version 2.0 (2019), and self-developed semi-structured were used as research instruments. Data were analyzed with SPSS version 23.0 using descriptive and inferential statistics.

Findings: Out of 92 nurses, more than half (56.5%) nurses responded with a positive perception in Patient Safety Culture. Most of the respondents responded Communication about error domain (72.8%) whereas Handoffs and Information Exchange ranked as least scored domain (43.2%). However, this study shows no significant association between selected independent variables.

Conclusion: More than half of the nurses have positive perception on Patient safety Culture in Hospital. Whereas, nearly half have negative perception towards Patient Safety Culture. Hence, there is a need to conduct in-service education for nurses regarding patient safety culture in hospital.

***Keywords*:** Patient Safety, Patient Safety Culture, Nurses

BACKGROUND

Patient Safety is a fundamental human right and a key component of high-quality healthcare systems. It serves as a vital part in the provision of nursing care. The World Health Organization (WHO) articulates patient safety as the insufficiency of any detriments inflicted upon a patient that could have been prevented alongside the

mitigation of the likelihood of harm linked to healthcare to a tolerable extent. [1]

Patient safety culture is a crucial aspect of healthcare organizations that determines their commitment, style, and ability to ensure patient safety. Agency of Healthcare Research and Quality (AHRQ) [2] model described Patient Safety in 12 dimensions, where updated on 2019 describes Patient Safety in 10 dimensions which includes expectations and actions of managers, organizational learning, cooperation in units, open communication, feedback on errors, non-punitive response to errors, staffing, management support for patient safety efforts, cooperation between units, handoff work and patient transitions, overall perception of hospital staff about patient safety, and reporting frequency. [3]

Globally around 1 among 10 patients experience injury during health care service where Unsafe care is the cause of more than 3 million deaths each year. In low- and middle-income countries, about 134 million adverse events happen in hospitals because of unsafe care, which leads to 2.6 million deaths each year. Regardless, Above half of damage (1 in each 20 patients) is preventable; a big part of this mischief is credited to mishandling of drugs administration. Furthermore 4 in 10 patients experience harm in outpatient and primary health care. Thus, this has led to alert all the health care service providers about the importance of patient safety and application of its principles in their select field. [4]

The World Health Organization (WHO) created "A Decade of Patient Safety 2020-2030" resolution to solve patient safety issues addressing the flaws within healthcare regulations, miscommunication, and medication errors. Patient safety events lead to longer hospital stays, increased healthcare intake, an increased burden on healthcare systems, and substantial costs associated to patient harm, such as legal costs, lost productivity, and increased expenses for healthcare. [1]

The Institute of Medicine (IOM), US puts the focus in health care delivery system of care on patient safety that includes inhibiting mistakes, learning from the errors that transpires and construct a safety culture among the health care service providers and the patients. It is estimated that equivalent number of 98,000 people experience death in hospitals in any unspecified year from medical errors. [5]

Nursing is a discipline encompassing both the artistic and scientific domain, necessitating not only educative preparation, but also unwavering moral strength and dedication to the individuals under care and the establishment being assisted. This entails sticking to all endorsed benchmarks of ethical principles of the profession. Nevertheless, nurses encounter allegations of negligence on patient safety within their clinical area. The experiences of hospitalization and outpatient visits exhibit variability when it comes to the level of care provided to patients. Despite the presence of a highly commendable healthcare system, patients continue to undergo a significant number of distressing encounters that arise because of deficiencies and errors within their patient safety through the provision of healthcare services. A multitude of issues are encountered by patients in relation to their safety: medication errors, incidents of falls and accidents, infections steaming from substandard care, the absence of relevant documents due to inadequate communication among staff members, and the occurrence of hospital-acquired infections due to the frequent undertaking of invasive procedures. This serves to highlight the crucial nature of patient safety, with the comprehension of its complexity and how its quality is upheld dependent upon the foundational level of education imparted to nursing participants. As a result, the knowledge of nursing participants determines the efficacy in delivery of high-quality patient care. [6]

Nurses are more likely to witness breaches in patient safety; they participate passively due to the fear of obligations to demonstrate the skills actively. The common nursing mistakes that we see in day to day practice

includes medication errors such as administering wrong dosage, inadequate communication and documentation resulting in delay of treatment and failure of follow up , falls among elderly populations during their hospital stay resulting in complications, Hospital Acquired Infection due to the failure to adhere the appropriate Infection Prevention Control Practice and Surgical Site Infections due to errors in patient preparation, failure to follow standard protocols. [7]

A systematic review of 21 studies conducted in Southeast Asian countries, including Indonesia, Thailand, Malaysia, Vietnam, Singapore, and the Philippines revealed the level of patient safety culture in these countries was found to be low to moderate, with variations in practice and research compared to developed countries. The findings emphasized the importance of strengthening patient safety culture in the Southeast region for sustainable health system development. [8] A comprehensive examination of the articles published from 2009 to 2018 in four online databases that includes ScienceDirect, Emerald Insight, Wiley Online, and EBSCO, revealed a total of eleven articles illuminates various strengths of the culture of patient safety, which can be classified into four dimensions deficiencies in the patient safety culture were identified, including assumptions about the overall safety of patients, handover and transfer processes, transparent communication, staffing challenges, non-punitive response to errors, and collaboration across different hospital units. [9]

However, there are low sufficient information, including out-of-date data about patient safety. To lower patient health risk and the threat of injury in all acknowledgements, it was crucial to conduct a study on nursing knowledge on patient safety culture.

RESEARCH OBJECTIVE This study aimed to assess the perception of patient safety culture among nurses working in a hospital and to measure the association between perception of patient safety culture of nurses and the selected variables.

RESEARCH QUESTIONS: What was the perception of patient safety culture among nurses working in a hospital?

METHODOLOGY

A descriptive cross-sectional study was adopted to assess the perception of patient safety culture among the nurses working in different departments of Manmohan Memorial Medical College and Teaching Hospital (MMTH). This research design guided the researcher to gather quantifiable data from the subject directly on the point of time in their natural setting for the researcher's academic purpose. The reason behind choosing this study design is that responses from the respondents were collected within a single period of time.

Research Site, Population, and Sampling and sample size of the Study

The research area for this study was conducted in Manmohan Memorial Medical College and Teaching Hospital. It is a 300 bedded hospital that has been functioning since 13th July 2013 with all the specialties and some sub-specialties service. The study population was the registered nurses working in the MMTH from PCL nursing level to Master degree in nursing from different units of Manmohan Memorial Medical College and Teaching Hospital. The final sample size is 92 including 10% non-response rate. Probability sampling technique was used to select the nurses of Manmohan Memorial Medical College and Teaching Hospital.

Tools and Instrumentation.

A Self-administered standard tool developed by Agency for Health Care Research and Quality (AHRQ) named Hospital Survey on Patient Safety Culture (HSOPSC) and self-developed semi-structured socio-demographic related questionnaires was used as research instruments. The questionnaire holds following parts:

Part I: Questionnaire related Socio-demographic Information
Part II: Questionnaire related to Work related Information.
Part IV: Questionnaire related to Safety Culture of Patients.

Data Collection Procedure

Firstly, permission was taken from the Nursing Director of the Manmohan Memorial Medical College and Teaching Hospital and with the respective hospital authority and administration. The nurses in-charge of all departments were informed about the title and the objective of the study and got permission to collect the data in their wards. The data was collected from the registered nurses (RNs) working at MMTH from different departments. Data was collected using a self-developed structured questionnaire within the allocated time of two weeks (20 Jestha to 32 Jestha 2081), to gather information on EBP. The participants were informed about the objectives of the study, and assured confidentiality, and verbal and written consent were taken. The researcher herself distributed and collected the questionnaire and to avoid data contamination, staff were kept separate and allowed to fill in the responses in front of the researcher and return on the same day. Approximately 20-25 minutes were given to each respondent to fill up the questionnaires, 7-8 respondents were included per day. Lastly, the questionnaires were rechecked for their completeness before leaving the data collection area.

Data Analysis Procedure

The collected data was organized and recorded by editing, coding and entering in the Statistical Package for Social Sciences (SPSS) version 23 for further analysis. The data was analyzed based on the study objectives and research questions. Data was analyzed by using descriptive statistics (frequency, mean, standard deviation and percentage), the normality of total score of perception on Patient Safety Culture was tested analytically by using the Shapiro-Wilk Test method. The data was normally distributed so, mean cutoff value was considered to differentiate the level of perception which was 113 and inferential statistics (chi-square and Fisher's Exact test) was used to measure the association between the perception level and selected variables

Ethical Considerations

The written approval for the conduct of research was provided by the Institutional Review Committee of Manmohan Memorial Institute of Health Science (MMIHS), Soalteemode. The formal written permission for the research was obtained by the Institutional Review Committee of Manmohan Memorial Medical College and Teaching Hospital (MMMCTH), Swayambhu. The informed written consent was taken from all the participants before the collection of data. Confidentiality was maintained by not disclosing the information of respondents. Anonymity was maintained by providing code numbers to each respondents' questionnaires.

Validity and Reliability

The adequacy and appropriateness of the contents of the instrument were decided through an analysis of the literature, seeking guidance from research advisors and experts, and consulting with relevant educators. Valid tools were used based on the study's objectives. The instrumentation is formulated in the English language. Reliability of the tool was done by pretesting in similar setting on 10% (8 respondents) of sample size meeting all the inclusion criteria; nurses working in Green City Hospital.

RESULT

TABLE 1 Socio-Demographic Variables of Respondents. n=92

Variables	Number	Percent
Age (in completed year)		
< 25years	49	53.3
≥ 25 years	43	46.7
Median ± IQR = 25 ± 5		
Ethnicity		
Brahmin/ Chhetri	49	53.3
Adhibashi/Jana Jati	34	37
Madhesi	5	5.4
Dalit	4	4.3
Muslim	-	-
Religion		
Hindu	82	89.1
Buddhist	9	9.8
Christian	1	1.1
Muslim	-	-
Marital Status		
Never Married	55	59.8
Married	36	39.1
Widow	1	1.1
Divorce	-	-

Table 1 illustrates the sociodemographic variables of the respondents. The median age of respondents was 25. More than half of the respondents belonged to the age group ≤ 25years (53.3%). Similarly, more than half of the respondents (53.3%) were from Brahmin/Chhetri ethnic group. Whereas most of the respondents followed Hindu religion (89.1%) and more than half of the respondents (59.8%) were never married.

TABLE 2 Work Related Variables of Respondents. n=92

Variables	Number	Percent
Level of Education		
PCL	54	58.7
B.Sc. Nursing	19	20.7
BNS	18	19.6
MN	1	1.1
Designation		
Staff Nurse	87	94.6
Senior Nurse	2	2.2
In-charge/Nursing officer	2	2.2
Nursing supervisor	1	1.1
Department		
ICU	23	25.0
Surgical Ward	11	12.0
Dialysis	11	12.0
Medical Ward	10	11
Cabin	9	10
Emergency	7	8
Cubical	6	6.5
OT	6	6.5
Post-Operative Ward	5	5
OPD	4	4
Work Experience		
< 4 years	58	63
≥ 4 years	34	37

Mean score ± SD = 4 ± 3.89		
Training		
Yes	7	7.6
No	85	92.4
If yes, type of training (n=7)		
Critical Care Training	7	7.6

Table 2 illustrates the Work-related variables of respondents. More than half of respondents (58.7%) had a PCL degree, whereas almost all the respondents were working in the post of Staff Nurse (94.6%). Majority of respondents had an experience of less than 4 years (63%) in this hospital. Whereas most of the respondents did not take any training related to Patient Safety Culture.

TABLE 3 Perception on Number of Events Reported in the past 12 months by Respondents. n=92

Items	Frequency	Percent
No event reported	36	39.1
1 to 2 event reports	23	25.0
3 to 5 event reports	13	14.1
6 to 10 event reports	16	17.4
11 to 20 event reports	3	3.3
21 event reports or more	1	1.1
Total	92	100

Table 3 shows the number of events reported in the past one year. It shows most of the events were not reported (39.1%). 25% of respondents reported 1 to 2 events.

TABLE 4 Perception on Different Domains of Patient Safety Culture according to Mean Score. n=92

Patient Safety Culture Domains	Mean	SD	Mean Percent
Communication Error	3.64	0.32	72.8%
Organizational Learning - Continuous Improvement	3.53	0.29	70.6%
Supervisor, Manager or Clinical Leader Support	3.48	0.31	69.6%
Staffing and Workplace	3.35	0.28	67%
Hospital Management Support	3.43	0.26	68.6%
Teamwork	3.11	0.33	62.2%
Communication Openness	3.11	0.33	62.2%
Frequency of Events Reported	2.96	0.27	59.2%
Response to Errors	2.96	0.27	59.2%
Handoffs and Information Exchange	2.16	0.35	43.2%

Table 4 presents the mean scores and mean percentages of different domains of patient safety culture as perceived by the respondents. The highest-rated domain was Communication Error (M = 3.64, 72.8%), indicating a strong culture of openness in discussing mistakes. This was followed by Organizational Learning – Continuous Improvement (70.6%) and Supervisor/Manager Support *(*69.6%), reflecting positive attitudes toward continuous improvement and leadership support. In contrast, Handoffs and Information Exchange had the lowest mean score (M = 2.16, 43.2%), highlighting a critical weakness in the transfer of patient information. Moderate perceptions were observed in Staffing, Teamwork, and Communication Openness. The findings suggest strengths in communication and leadership support, but also underscore the need for improvements in handoffs, event reporting, and responses to errors.

TABLE 5 Perception on Patient Safety Culture. n=92

Level of Patient Safety	Frequency	Percent
Positive	52	56.5
Negative	40	43.5
Total	92	100
Mean Score ± SD= 113±9.10		

Table 5 shows the perception on Patient Safety Culture based on an average mean score of 113. The average mean score ranging below 113 was considered as Negative, whereas the score above the average mean score is considered positive perception on patient safety culture.

TABLE 6 Association of Patient Safety Culture and Socio-Demographic Variables of the Respondents. n=92

Variables	Perception		x^2	P- Value
	Positive	Negative		
	No. (%)	No. (%)		
Age				
<25	28(53.8)	21(52.5)	0.16	0.898
≥ 25 years	24(46.2)	19(47.5)		
Median ± IQR = 25 ± 5				
Ethnicity				
Brahmin/ Chhetri	29(55.8)	20(50)	0.302	0.582
Others	23(44.2)	20(50)		
Religion				
Hindu	43(82.7)	39(97.5)	-	0.24#
Non-Hindu	9(17.3)	1(2.5)		
Marital Status				
Never Married	30(57.7)	26(65)	0.507	0.476
Married	22(42.3)	14(35)		

Note: x^2 value is obtained from Pearson Chi square

**** Denotes P value significant at<0.05*** ***# Fisher's Exact Test***

Table 6 shows the association between the level of patient safety culture and socio-demographic variables. The association between the level of patient safety culture and socio-demographic variables showed no significant in any variables.

TABLE 7 Association of Patient Safety Culture and Work-related Variables of the Respondents. n=92

Variables	Perception		x^2	P- Value
	Positive	Negative		
	No. (%)	No. (%)		
Level of Education				
Diploma	33(63.5)	21(52.5)	1.121	0.290
Bachelors	19(36.5)	19(47.5)		
Working Department				
Critical	29(55.8)	23(57.5)	0.302	0.582
Non-Critical	23(44.2)	17(42.5)		
Designation				
Staff Nurse	49(94.2)	39(97.5)	-	0.446#
Nursing Officer	3(5.8)	1(2.5)		
Work Experience				
<4 years	30(57.7)	28(70)	1.470	0.225
≥4years	22(42.3)	12(30)		
Mean score ± SD = 4 ± 3.89				
Training				
Yes	6(11.5)	1(2.5)	-	0.105 #
No	46(88.5)	39(97.5)		

Note: x^2 value is obtained from Pearson Chi square ****Denotes P value significant at <0.05***

 # Fisher's Exact Test

Table 7 shows the association between the level of patient safety culture and work-related variables. The association between the level of patient safety culture and work-related variables showed no significant in any variables.

DISCUSSION

The present descriptive cross-sectional study involving 92 nurses revealed that the overall perception of patient safety culture was adequate. A significant proportion of participants were young (under 25 years), mostly Brahmin/Chhetri, unmarried, and held a Proficiency Certificate Level (PCL) qualification with less than four years of work experience. Such demographic features are crucial, as studies have shown that younger and less experienced nurses may demonstrate higher confidence in protocols but limited awareness of latent systemic issues that affect patient safety outcomes. [1]

A comparable study conducted in Bale Zone, Ethiopia, identified teamwork within units as the highest-rated domain of patient safety culture, while staffing received the lowest ratings. [10] These findings are consistent with our study, suggesting that interpersonal collaboration is a shared strength in healthcare environments, while resource constraints remain a pressing challenge. In a study from Brazil conducted in public hospital ICUs, positive perceptions were reported for teamwork and managerial support, whereas communication openness and error feedback scored poorly. [11] This reveals a contrast where staff trust each other and management but lack confidence in the system's transparency and accountability processes.

Within Nepal, a study at Kathmandu Medical College showed that only 16% of participants viewed the patient safety culture as adequate. The teamwork domain again emerged as the strongest area, whereas staffing and supervisory expectations received low ratings [12] This emphasizes the critical role of leadership and adequate human resources in fostering a positive safety culture. Portugal showed similar strengths in teamwork and supervisor support, with weaknesses in error reporting and staffing, especially among older and more experienced nurses. [13] This might suggest that increased professional exposure enhances awareness of gaps in safety practices, which is less evident among the predominantly younger nurses in the current study.

In Indonesia, organizational learning and teamwork were perceived positively, while staffing was once again identified as a weak point, influenced by long shifts and uneven nurse distribution. [14] These issues mirror the staff-related concerns in our findings, demonstrating a recurring pattern in many developing healthcare systems. In Qatar, although teamwork and continuous improvement were positively perceived, non-punitive responses to errors and staffing adequacy were the lowest-rated areas. [15] This underscores a global issue where fear of blame discourages open discussion of errors, compromising efforts to learn from mistakes and improve safety protocols.

Collectively, these international comparisons suggest that while teamwork and intra-unit support are commonly recognized strengths, staff shortages and fear of punitive repercussions are persistent weaknesses. Addressing these weaknesses through institutional policy changes, supportive leadership, and capacity-building initiatives is critical to strengthening the overall patient safety culture.

CONCLUSION

This study shows no significant association between the level of patient safety Culture and selected independent variables. The study revealed that nurses perceived the overall patient safety culture as adequate, with particular strengths in teamwork and organizational learning. However, consistent with findings from various international studies, significant challenges remain in areas such as staffing and non-punitive responses to errors. These weaknesses suggest that while nurses value cooperation and mutual support within units, systemic issues such as inadequate staffing levels, communication gaps, and a lack of supportive management practices continue to hinder the development of a strong patient safety culture. To enhance patient safety, hospital administrations must

prioritize sufficient staffing, promote open and blame-free communication, and strengthen managerial support for safety initiatives.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: We are grateful to the administration and nursing staff of Manmohan Memorial Institute of Health Sciences for their support and participation. Special thanks to Professor Dr. Dharma Prasad Khanal and Professor Mandira Onta for their support. We also appreciate the contributions statisticians for their technical and moral support. Lastly, we thank all nurse participants whose responses were vital to this study. This research is dedicated to enhancing patient safety culture among nursing professionals.

Sources Of Funding: This research was conducted with self-funding by the researcher. No external financial support, grants, or institutional funding were received. All expenses related to data collection, analysis, and documentation were personally borne by the researchers to ensure the independent conduct of the study.

Conflict Of Interest: The authors declare no conflict of interest related to this study. There are no financial, personal, or professional relationships that could have influenced the research process, findings, or interpretation. The study was conducted independently, and all conclusions are based solely on the data and analysis presented.

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How to cite this article: Krishna Kumari Paudel Subedi, Jamuna Laxmi Maharjan, Sunita Shrestha, Sabitri Kumari Paudel, Heena Shrestha. Perception on patient safety culture among nurses in a hospital. *Int J Health Sci Res.* 2025; 15(6):176-185.
DOI: *https://doi.org/10.52403/ijhsr.20250623*

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