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Knowledge and Attitude regarding Patient Safety among Undergraduate Nursing Students: A Cross-Sectional Study

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ABSTRACT

Background

Patient safety as the absence of preventable harm to a patient while providing health care with the reduction of unnecessary harm associated with better health care. It is crucial to evaluate nursing students' knowledge and attitudes toward patient safety to encourage students in patient safety activities. So, this study was carried out to assess the knowledge and attitude regarding patient safety among undergraduate nursing students.

Methods

A cross-sectional analytical study was conducted to assess the knowledge and attitude regarding patient safety among undergraduate nursing students. Total enumerative sampling technique was used to obtain a sample of 131 undergraduate nursing students. The data was collected by using semi-structured self-administered questionnaire, ethical approval was obtained (20240210-02) and analyzed in the statistical package for social science with descriptive statistics (frequency, percent, mean, standard deviation) and inferential statistics (chi-square).

Results

This study showed 48.1% had poor knowledge and only 48.1% of the respondents had positive attitude. There is statistically significance association between level of knowledge regarding patient safety and age (p-value 0.001), educational level (p-value 0.001), experience of clinical practice (p-value 0.001) and statistically significance association between level of attitude regarding patient safety and age (p-value 0.029).

Conclusions

About half of the respondents had poor knowledge regarding patient safety and more than half of the respondents had negative attitude. On the basis of findings, still need to do more focus on the concepts and skills on patient safety among nursing students. First, students' needs to be taught about patient safety along with demonstration in college and before they are exposed for clinical experience.

Keywords: Patient safety; Knowledge; Attitude; Undergraduate nursing students.

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INTRODUCTION

Patient safety is the foundation of good care and the heart of healthcare quality. Effectiveness, access to care, timeliness and the other dimensions of quality are all important,¹ which elimination harm to patients caused by treatments provided with the health care professionals and strategies aim at preventing unintended damage to patients as a result of health care.² It is a fundamental provision in all health care settings. Avoidable adverse events, errors and risks associated with health care remain major challenges globally.³ Annually, 134 million health care-associated adverse events, contributing to 2.6 million deaths in hospitals.⁴ The safety of patients has become a global concern. In the developing countries, overcrowding, shortage of equipment and supplies, shortage of staffs, poor hygiene and sanitation, disinterested leadership and flawed process of care have contributed to unsafe patient care.⁵ Preventable harm in the healthcare system is an urgent public health challenge and alarming situation. Globally, more people die from medical errors or other breakdowns in the quality and safety of healthcare services from lack of access to them.⁶ Nurses as the largest group of healthcare providers are in the best position to improve patient safety. In preparing future nurses, nurse educators have an important role in developing the knowledge, skills and attitudes among nursing students related to patient safety.⁷ Lack of Patient's safety can pose serious health risks, like worsening of the patient's condition, infection. For safer healthcare system, patient safety movement initiates first do not harm, ZERO by 2030 with zero preventable patient harm by disseminate actionable, evidence-based practices, advance their integration by healthcare organizations.⁸ By recognizing outstanding practices and high-impact innovations from healthcare organizations and national health authorities, the program promotes shared learning and accelerates the spread of proven approaches to safer care.⁹ National Patient Safety Goals with leadership support, staff training, patient engagement, and continuous improvement, hospitals can measurably enhance patient safety.¹⁰ Hence, the researcher

is interested to conduct this study to assess the knowledge and attitude regarding patient's safety among undergraduate nursing students.

METHODS

Study Design

An analytical cross-sectional study design was used to assess the knowledge and attitude regarding patient safety among undergraduate nursing students.

Study Area

The study was conducted among nursing colleges of Chitwan district, Nepal. One nursing college was selected through a probability simple random sampling technique using the lottery method.

Study Population

The study population consisted of undergraduate nursing students (PBNS and BNS) studying in the selected nursing college of Chitwan.

Sample Size

A total of 131 undergraduate nursing students were included in the study using a total enumerative sampling technique.

Sampling Technique

A simple random sampling technique was used to select nursing College from Chitwan district by lottery method. Within the selected college, total enumerative sampling was applied to include all eligible undergraduate nursing students ($n = 131$).

Data Collection Tools and Technique

Data were collected using a semi-structured, self-administered questionnaire developed in understandable language based on the study objectives. The instrument consisted of three parts: socio-demographic information, knowledge-related questions, and a Likert scale assessing attitude toward patient safety among undergraduate nursing students. Content validity of the instrument was ensured through consultation with subject experts, research advisors, and by reviewing relevant literature.^{11,13-15} The questionnaire was prepared in English, translated into Nepali, and back-translated into English with the help of experts. Pretesting was conducted among 10% ($n = 14$) of the total sample population. The reliability of the tool was 0.70 for knowledge and 0.65 for attitude. Data were collected

during students' free time after obtaining permission from the year coordinator. Each respondent took approximately 20-25 minutes to complete the questionnaire.

Variables/Measurements

The independent variables comprised the socio-demographic characteristics of the respondents. The dependent variables were the knowledge and attitude regarding patient safety among undergraduate nursing students. Knowledge was assessed using structured questions, whereas attitude was measured using a Likert scale.

Statistical Analysis

The collected data were checked, reviewed, and organized for accuracy, completeness, and consistency. Data were coded and entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics such as frequency, percentage, mean and standard deviation were used. Inferential statistics, including Pearson Chi-square test. P-value <0.05 was considered as statistically significant

Ethical Consideration

Ethical approval was taken (Ref. No.: 20240210-02) from IRC of Shree College of Technology. Written informed consent was obtained from each respondent before data collection. The purpose of the study was clearly explained in simple and understandable language. Confidentiality was maintained by ensuring that personal information was not disclosed and data were used only for research purposes. Anonymity was ensured by using code numbers instead of names. Participants were informed that participation was voluntary and they could withdraw at any time during data collection without any consequences.

RESULTS

Socio demographic characteristics of respondents, regarding age majority 85.5% were in the age group 15-25 years with least 1.5% respondents were in the age group 35-45 years. The minimum and maximum age was 17 and 40 years respectively. The mean $\pm$ SD of age were 21.97 $\pm$ 3.77. Similarly, in religion majority of respondents 91.5% belongs to Hindu

and least 0.8% were Christian and 0.8% were Islam. Likewise in ethnicity majority of respondents 72.5% were Brahmin/Chhetri and least 0.8% were Muslim. Regarding in the level of education majority of the respondents 45.8% were in BSN 1st year and least of the respondents 8.4% were in BSN 2nd year. Regarding experience of clinical practice majority of respondents 93.1% were between the group 0-36 months (Table 1).

Level of knowledge and attitude of the respondents.

Table 1. Socio demographic characteristics of the respondents (n=131).

Variables	Frequency (%)
Age	
15-25	112 (85.5)
25-35	17 (13)
35-45	2 (1.5)
Mean $\pm$ SD Minimum (Maximum)	21.97 $\pm$ 3.770, 17(40)
Religion	
Hinduism	120 (91.5)
Buddhism	9 (6.9)
Christianity	1 (0.8)
Islam	1 (0.8)
Ethnicity	
Janajati	29 (22.1)
Madhesi	3 (2.3)
Muslim	1 (0.8)
Brahmin/Chhetri	95 (72.5)
Thakuri	3 (2.3)
Level of education	
BSN 1st year	60 (45.8)
BSN 2nd Year	11 (8.4)
PBNS 1st year	23 (17.5)
PBNS 2nd year	20 (15.3)
PBNS 3rd year	17 (13)
Experience of clinical practice (In months)	
0-36	122 (93.1)
36-72	5 (3.8)
>72	4 (3.1)

In which 51.9% of the respondents had good knowledge while 48.1% respondent's had poor knowledge. The mean $\pm$ S.D of knowledge score was 18.82 $\pm$ 3.741. The minimum score was 12 and maximum score was 26. Whereas 48.1% of the respondents had positive attitude were 51.9% had negative attitude. The overall mean $\pm$ S.D of attitude

score was 41.5 ± 4.92 . The minimum score in attitude was 26 while maximum score was 55 (Table 2).

Knowledge on patient safety was statistically significant with age (p-value 0.001), level of education (p-value 0.001), and experience of clinical practice (p-value 0.001) of the respondents (Table 3).

Attitude of patient safety was statistically significant with age (p-value 0.029) of the respondents only (Table 4).

Table 2. Respondent's knowledge and attitude towards patient safety (n=131).

Variables	Frequency (%)
Level of Knowledge	
Good	68 (51.90)
Poor	63 (48.10)
Mean $\pm$ S.D, Minimum (maximum)	18.82 $\pm$ 3.741, 12(26)
Level of Attitude	
Positive	63 (48.10)
Negative	68 (51.90)
Mean $\pm$ S.D, Minimum (Maximum)	41.5 $\pm$ 4.92, 26(55)

Table 3. Association between knowledge regarding patient safety and selected variables (n=131).

Variables	Level of knowledge		Chi-square	P-value
	Good (%)	Poor (%)		
Age (years)			23.09	0.001*
<20	20 (30.8)	45 (69.2)		
≥ 20	48 (51.9)	18 (48.1)		
Level of education				
BSN 1st	17 (28.3)	43 (71.7)	33.7	0.001**
BSN 2 nd	4 (36)	7 (63.6)		
PBNS 1 st	16 (69.6)	7 (30.4)		
PBNS 2 nd	15 (75)	5 (25)		
PBNS 3 rd	16 (94.1)	1 (5.9)		

Pearson Chi-square* Likelihood Ratio** Significant level at 0.05

Table 4. Association between attitude regarding patient safety and selected variables (n=131).

Variables	Level of Attitude		Chi-square	P-value
	Positive (%)	Negative (%)		
Age(years)			3.194	0.029*
<20	50 (44.6)	62 (55.4)		
≥20	13 (76.5)	4 (23.5)		
Level of education				
BSN 1st	23 (38.3)	37 (61.7)	4.99	0.288**
BSN 2nd	5 (45.5)	5 (54.5)		
PBNS 1st	14 (60.9)	9 (39.1)		
PBNS 2nd	11 (55)	9 (45)		
PBNS 3rd	10 (58.8)	7 (41.5)		
Experience of clinical practice (months)				
<12	32 (41.6)	45 (58.4)	4.793	0.074*
≥12	31 (57.4)	23 (42.6)		

Pearson Chi-square* Likelihood Ratio** Significant level at 0.05

DISCUSSION

Study on knowledge and attitude regarding patient safety was done among 131 respondents. In the age majority of the respondents 85.5% were group 15-25 years. The mean $\pm$ S.D of age was 21.97 ± 3.77 ,

while a study conducted in Malaysian private college shows that majority of the respondents were in the age group 19-20 years and the mean $\pm$ S.D of age group was 1.39 ± 0.67 .¹¹ A study revealed that majority of the respondents 45.8% belongs

to 1st year of bachelor of nursing and this findings contrast with the study conducted in Malaysian private college which revealed that majority 52% of the respondents belongs to 2nd year of nursing. ¹¹ Another study conducted among undergraduate nurse students in Cyprus and Greece which revealed that majority 55 % of the respondents belongs to 4th year. ¹² A study revealed that majority 51.9% had good knowledge. The mean±S.D of knowledge was 18.82±3.741 while the findings contrast to the study conducted in Malaysian private college shows which revealed that majority 98.9% had good knowledge and the mean±S.D of knowledge was 11.01±0.14. ¹¹ Another study was conducted in medical education: students revealed that majority 60% of the respondents had good knowledge. ¹³ While in the study conducted among undergraduate health science students in South West Ethiopia revealed that 43.2% had good knowledge toward patient safety. ¹⁴ In this study there was statistically significant association between level of knowledge regarding Patient Safety and age ($p=0.001$), level of education (0.001) and experience of clinical practice (p -value 0.001) whereas a study conducted in Malaysian private college shows that there was no statistically significant association between level of knowledge regarding patient safety and socio demographic variables. ¹¹ Study revealed that only 48.1% had positive attitude. The mean±S.D of attitude was 41.5±4.92. This findings contrast to the study conducted in Malaysian private college shows that majority of the respondents 90.3% had positive attitude. ¹¹ Similar findings in a study conducted among a group of undergraduate medical students in Saudi Arabia which revealed that less than 50% of total respondents of nursing students had a positive attitude towards patient safety. ¹⁴ Similarly, a study conducted by undergraduate health science students in South West Ethiopia revealed that 45.4% had positive attitudes toward patient safety. ¹⁵ In this study there was statistically significant association between level of attitude regarding Patient Safety and age ($p=0.029$) whereas a study conducted by (Sen, et al., 2019) shows that there was a significant positive correlation between the safety of the health-

care system and personal influence over safety and attitudes toward patient safety ($P < 0.05$).

Limitations

This study was cross sectional, conducted only among nursing students of nursing college.

Conclusions

The study was conducted for the purpose of determining Patient Safety among undergraduate nursing students. The study showed that about half of the respondents had poor knowledge regarding patient safety and more than half of the respondents had negative attitude. On the basis of findings, there is still need to do more focus on the concepts and skills on patient safety among nursing students. If nurses have high patient safety skill then that will improve patient satisfaction.

Recommendation

On the basis of findings, still need to do more focus on the concepts and skills on patient safety among nursing students. Since the study has covered only a small group, a large scale Multi faculties and multi cantered study can be done to generalize the study to different settings.

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Availability of data and materials: All data analyzed during this study will be available from the corresponding author upon reasonable request.

Authors' Contributions

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