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Nurses' Knowledge and Attitudes Regarding Patient Restraint in a Tertiary Care Hospital of Bharatpur, Chitwan, Nepal

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ABSTRACT

Background

Patient restraint is a critical nursing practice in tertiary care settings, requiring adequate knowledge and appropriate attitudes to ensure patient safety and ethical care. This study assessed nurses' knowledge and attitudes regarding patient restraint in a tertiary care hospital in Bharatpur, Chitwan, Nepal.

Methods

A descriptive cross-sectional study was conducted among 239 nurses selected from various clinical departments. Data were collected using a structured questionnaire and analyzed using descriptive and inferential statistics, including Chi-square test to determine associations. A p-value < 0.05 was considered statistically significant.

Results

Among 239 nurses, 64.4% were aged 20-25 years and 89.5% had PCL qualification. More than one-third (34.3%) worked in the ICU, and 77.0% had no training on patient restraint. Good knowledge was found in 46.0% (95% CI: 39.7%-52.3%), while 54.0% (95% CI: 47.7%-60.3%) had poor knowledge. Positive attitude was observed in 64.9% (95% CI: 58.9%-70.9%), whereas 35.1% (95% CI: 29.1%-41.1%) had negative attitude. Knowledge was significantly associated with age, working area, and training status. Attitude was significantly associated with age, working area, training, protocol availability, and work experience. Knowledge was also significantly associated with attitude ($\chi^2 = 7.89$, $p = 0.005$).

Conclusions

Although most nurses demonstrated a positive attitude, a considerable proportion had inadequate knowledge regarding patient restraint. Knowledge and attitude were significantly influenced by age, working area, and training. Strengthening training programs and ensuring implementation of clinical protocols may improve nurses' competency in patient restraint practices.

Keywords: Patient restraint; Nurses; Knowledge; Attitude; Tertiary care hospital; Nepal.

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INTRODUCTION

Restraint refers to the use of force, authority, or interventions to prevent, suppress, or control certain actions.[1] It is broadly classified into physical, mechanical, chemical, and psychological restraint. Physical restraint involves direct holding of a patient by staff to restrict movement and prevent harm to self or others. Mechanical restraint uses devices or environmental modifications such as bed rails, furniture arrangement, or mechanical locks to limit mobility.[2] Chemical restraint involves administering medications to control behaviors related to psychological or medical conditions, commonly including sedatives, anxiolytics, antipsychotics, and antimuscarinic agents. Psychological restraint includes non-physical approaches such as repeated verbal instructions, restriction of personal belongings, or withholding assistive devices like glasses or hearing aids, thereby limiting independence.[3] Restraints are generally applied when patient safety or the safety of others is at risk, particularly in cases of violent or disruptive behavior such as pulling out tubes, drains, or intravenous lines. In such situations, restraint acts as a nursing intervention to prevent harm and ensure continuity of treatment.[4] However, its use requires careful ethical consideration and clinical justification. Indications for restraint include prevention of imminent harm to patients or others, avoidance of treatment disruption, and support for behavioral management in therapeutic care. Contraindications include severely unstable medical conditions, suicidal tendencies, severe drug reactions or overdose, and use for punishment or staff convenience.[5] Restraint guidelines emphasize continuous assessment, regular review, and timely modification according to patient condition. Nursing care includes hourly monitoring of skin integrity, circulation, temperature, color, and sensation of restrained limbs, along with frequent patient orientation. During release, nurses should assess for complications such as pressure injuries, muscle weakness, psychological distress, confusion, aggression, and ensure correct positioning of medical devices and catheters.[6] A cross-sectional descriptive study in Portugal assessed nurses' knowledge of physical and chemical restraint using a survey among 156 nurses selected by convenience sampling. The findings showed that 46.9% had good knowledge, 6.2% had reasonable knowledge, and 46.9% had poor knowledge regarding restraint practices.[7] This study assessed nurses' knowledge and attitudes regarding patient restraint in a tertiary care hospital in Bharatpur, Chitwan, Nepal.

METHODS

Study Area

The study was conducted among the Nurses working at College of Medical Sciences-Teaching Hospital, Bharatpur, Chitwan, Nepal, which is a tertiary-level teaching hospital providing specialized health services to patients from different parts of Nepal.

Study Design

An analytical cross-sectional study design was used to assess nurses' knowledge and attitude regarding patient restraint.

Sample size and sampling

The study population included all registered nurses working in different clinical/OPD units of CMS-TH during the study period who were directly involved in patient care. The sample size was calculated using a standard statistical formula at a 95% confidence level and 5% margin of error based on the estimated proportion from previous studies. An additional 10% was added to minimize the risk of non-response This study was conducted among 239 nurses. A proportionate random sampling technique was used to ensure adequate representation of nurses from different clinical departments such as medicine, surgery, ICU, emergency, and pediatric units.

Data Collection

The study was conduceted from Ethical approval for the study was obtained from the Institutional Review Committee of CMS-TH before data collection (Ref. No.: COMSTH-IRC2023-24). Confidentiality and anonymity of participants were strictly maintained. Participation was voluntary, and informed consent was obtained from all respondents. Data were collected using a structured self-administered

questionnaire that included socio-demographic characteristics, knowledge-related items, and attitude-related statements regarding patient restraint. The tool was pre-tested before the actual data collection to ensure clarity and validity. Written informed consent was obtained from all participants prior to data collection, and confidentiality and anonymity were strictly maintained. Participation in the study was voluntary, and respondents were allowed to withdraw at any time without any consequence. The dependent variables were level of knowledge and level of attitude regarding patient restraint among nurses. Level of knowledge was categorized based on the mean score as high knowledge (≥ mean) and low knowledge (< mean), while level of attitude was categorized as positive attitude (≥ mean) and negative attitude (< mean). The independent variables included socio-demographic and organizational factors such as age, educational qualification, working area/department, receipt of training on patient restraint, availability of protocol in the workplace, and work experience.

Data Analysis

Data were entered and analyzed using SPSS version 20. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used. Inferential statistics such as the chi-square test were applied to assess the association between socio-demographic variables and knowledge and attitude. A p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 239 participants were included in the study. Regarding age, the majority of respondents (154, 64.4%) were aged 20-25 years, followed by 44 (18.4%) who were under 20 years old, 30 (12.6%) who were 25-30 years old, and 11 (4.6%) who were 30-35 years old. In terms of educational qualification, most participants held a PCL nursing qualification (214, 89.5%), while 19 (7.9%) had a BSc degree, 5 (2.1%) had a BN degree, and 1 (0.4%) had an ANM qualification. Regarding working area, the highest proportion of participants worked in the ICU (82, 34.3%), followed by Orthopedics (41, 17.2%), Surgery (26, 10.9%), Urology (20, 8.4%), Emergency Room (17, 7.1%), Nephrology (16, 6.7%), Pediatrics (16, 6.7%), Gynecology (11, 4.6%), and Operation Theatre (10, 4.2%). Most respondents had not received any related training (184, 77.0%), whereas 55 (23.0%) had received training. Similarly, 164 (68.6%) reported the availability of a protocol in their workplace, while 75 (31.4%) reported the absence of a protocol. With respect to work experience, more than half of the participants (128, 53.6%) had less than one year of experience, followed by 62 (25.9%) with more than three years of experience and 49 (20.5%) with one to three years of experience (Table 1).

Table 1: Socio-demographic and Professional Characteristics of the Participants (n = 239).

Characteristics	Frequency n (%)
Age group	
<20	44 (18.4)
20-25	154 (64.4)
25-30	30 (12.6)
30-35	11 (4.6)
Qualification	
ANM	1 (0.4)
BN	5 (2.1)
Bsc N.	19 (7.9)
PCL	214 (89.5)
Working area	
ER	17 (7.1)
Gynecology	11 (4.6)
ICU	82 (34.3)
Nephrology	16 (6.7)
Ortho	41 (17.2)
OT	10 (4.2)
Pediatrics	16 (6.7)
Surgery	26 (10.9)
Urology	20 (8.4)
Received training	
No	184 (77.0)
Yes	55 (23.0)
Protocol	
No	75 (31.4)
Yes	164 (68.6)
Experience	
<1 year	128 (53.6)

3-Jan	49 (20.5)
>3 year	62 (25.9)

The table shows that 110 (46%) respondents had good knowledge with a 95% CI of 39.7%-52.3%, while 129 (54%) had poor knowledge with a 95% CI of 47.7%-60.3% (Table 2).

Table 2: Level of Knowledge among Respondents with 95% Confidence Interval (n=239).

Level of knowledge	Frequency n (%)	95% CI	
		Lower	Upper
Good	110 (46)	39.7	52.3
Poor	129 (54)	47.7	60.3

The results showed that age group was significantly associated with level of knowledge ($\chi^2 = 8.813$, $p = 0.032$), with higher good knowledge observed among participants aged 30-35 years. Working area was also highly significantly associated ($\chi^2 = 59.204$, $p < 0.001$), with better knowledge seen in participants from urology and emergency departments. Similarly, training status was significantly associated with knowledge ($\chi^2 = 4.25$, $p = 0.039$), indicating better knowledge among trained participants. However, qualification ($\chi^2 = 5.46$, $p = 0.141$), protocol availability ($\chi^2 = 3.28$, $p = 0.07$), and work experience ($\chi^2 = 4.915$, $p = 0.086$) were not significantly associated with knowledge level (Table 4).

The findings indicate that 155 (64.9%) respondents exhibited a positive attitude, with a 95% CI of 58.9%-70.9%, whereas 84 (35.1%) demonstrated a negative attitude, with a 95% CI of 29.1%-41.1% (Table 3).

Table 3: Level of attitude among Respondents with 95% Confidence Interval (n=239).

Level of attitude	Frequency n (%)	95% CI	
		Lower	Upper
Negative	84 (35.1)	29.1	41.1
Positive	155 (64.9)	58.9	70.9

Table 4: Association between Selected Socio-demographic and Professional Characteristics with Level of Knowledge among Participants (n=239).

Characteristics	Level of knowledge n (%)		Chi-square	p-value
	Poor	Good		
Age group				
<20	24 (54.5)	20 (45.5)	8.813	0.032
20-25	82 (53.2)	72 (46.8)		
25-30	21 (70)	9 (30)		
30-35	2 (18.2)	9 (81.8)		
Qualification				
ANM	0	1 (100)	5.46	0.141
BN	3 (60)	2 (40)		
Bsc N.	6 (31.6)	13 (68.4)		
PCL	120 (56.1)	94 (43.9)		
Working area				
ER	2 (11.8)	15 (88.2)	59.204	<0.001
Gynecology	9 (81.8)	2 (18.2)		
ICU	58 (70.7)	24 (29.3)		
Nephrology	6 (37.5)	10 (62.5)		
Ortho	15 (36.6)	26 (63.2)		
OT	7 (70)	3 (30)		
Pediatrics	13 (81.3)	3 (18.8)		
Surgery	18 (69.2)	8 (30.8)		
Urology	1(5)	19 (95)		
Received training				
No	106 (57.6)	78 (42.4)		

Yes	23 (41.8)	32 (58.2)	4.25	0.039
Protocol				
No	34 (45.3)	41 (54.7)	3.28	0.07
Yes	95 (57.9)	69 (42.1)		
Experience (year)				
<1	75 (58.6)	53 (41.4)	4.915	0.086
2-4	28 (57.1)	21 (42.9)		
>3	26 (41.9)	36 (58.1)		

The Chi-square test showed that age group (χ^2 = 20.93, p < 0.001), working area (χ^2 = 32.19, p < 0.001), training status (χ^2 = 25.44, p < 0.001), protocol availability (χ^2 = 4.61, p = 0.032), and work experience (χ^2 = 6.96, p = 0.031) were significantly associated with attitude level. However, qualification was not significantly associated (χ^2 = 5.11, p = 0.164) (Table 5).

Table 5: Association between socio-demographic characteristics with level of attitude among participants (n=239).

Characteristics	Level of attitude		Chi-square	p-value
	Poor	Good		
Age group				
<20	8 (18.2)	36 (81.8)	20.93	<0.001
20-25	50 (32.5)	104 (67.5)		
25-30	20 (66.7)	10 (33.3)		
30-35	6 (54.5)	5 (45.5)		
Qualification				
ANM	1 (100)	0	5.11	0.164
BN	1 (20)	4 (80)		
Bsc N.	10 (52.6)	9 (47.4)		
PCL	72 (33.6)	142 (66.4)		
Working area				
ER	4 (23.5)	13 (76.5)	32.19	<0.001
Gynecology	6 (54.5)	5 (45.5)		
ICU	22 (26.8)	60 (73.2)		
Nephrology	8 (50)	8 (50)		
Ortho	14 (34.1)	27 (65.9)		
OT	6 (60)	4 (40)		
Pediatrics	0	16 (100)		
Surgery	9 (34.6)	17 (65.4)		
Urology	15 (75)	5 (25)		
Received training				
No	49 (26.6)	135 (73.4)	25.44	<0.001
Yes	35 (63.6)	20 (36.4)		
Protocol				
No	19 (25.3)	56 (74.7)	4.61	0.032
Yes	65 (39.6)	99 (60.4)		
Experience (year)				
<1	37 (28.9)	91 (71.1)	6.96	0.031
1-3	17 (34.7)	32 (65.3)		
>3	30 (48.4)	32 (51.6)		

The results showed that level of knowledge was significantly associated with level of attitude (χ^2 = 7.89, p = 0.005), indicating that participants with poor knowledge had a higher proportion of positive attitude (72.9%), while those with good knowledge showed relatively lower positive attitude (55.5%) (Table 6).

Table 6: Association between levels of knowledge with level of attitude among participants (n=239).

Level of knowledge	Level of attitude n (%)		Chi-square	p-value
	Negative	Positive		
Poor	35 (27.10)	94 (72.9)	7.89	0.005
Good	49 (44.5)	61 (55.5)		

The results showed that age group was significantly associated with level of knowledge (χ^2 = 8.813, p = 0.032), with higher good knowledge observed among participants aged 30-35 years. Working area was also highly significantly associated (χ^2 = 59.204, p < 0.001), with better knowledge seen in participants from urology and emergency departments. Similarly, training status was significantly associated with knowledge (χ^2 = 4.25, p = 0.039), indicating better knowledge among trained participants. However, qualification (χ^2 = 5.46, p = 0.141), protocol availability (χ^2 = 3.28, p = 0.07), and work experience (χ^2 = 4.915, p = 0.086) were not significantly associated with knowledge level.

The Chi-square test showed that age group (χ^2 = 20.93, p < 0.001), working area (χ^2 = 32.19, p < 0.001), training status (χ^2 = 25.44, p < 0.001), protocol availability (χ^2 = 4.61, p = 0.032), and work experience (χ^2 = 6.96, p = 0.031) were significantly associated with attitude level. However, qualification was not significantly associated (χ^2 = 5.11, p = 0.164).

The results showed that level of knowledge was significantly associated with level of attitude (χ^2 = 7.89, p = 0.005), indicating that participants with poor knowledge had a higher proportion of positive attitude (72.9%), while those with good knowledge showed relatively lower positive attitude (55.5%).

DISCUSSION

This study included 239 nurses, of whom the majority were aged 20-25 years (64.4%). Most participants had PCL qualification (89.5%), and 34.3% worked in the ICU. A large proportion (77.0%) had not received training while 68.6% reported availability of a protocol in their workplace.

Ozakarakca reported that the majority of pediatric nurses (52.0%) had not received training on physical restraint. Similarly, the present study found that a larger proportion of nurses (77.0%) had not received any training related to patient restraint, indicating inadequate training exposure in both settings.[8]

Regarding knowledge, 46% (95% CI: 39.7%-52.3%) had good knowledge, while 54% (95% CI: 47.7%-60.3%) had poor knowledge. In contrast, 64.9% (95% CI: 58.9%-70.9%) demonstrated a positive attitude, whereas 35.1% (95% CI: 29.1%-41.1%) had a negative attitude. A study by *Cunha et al.,* in Portugal among 156 nurses reported that 46.9% had good knowledge and 46.9% had poor knowledge regarding physical and chemical restraint practice. [7]

A study conducted by Büşra Ertuğrul reported that training (p = 0.009), working unit (p = 0.001), and nurses' attitude scores (p = 0.004) were significantly associated with level of knowledge.[1]

The association analysis showed that age group was significantly associated with knowledge (χ^2 = 8.813, p = 0.032), with better knowledge observed among nurses aged 30-35 years.[14] Working area was highly significantly associated with knowledge (χ^2 = 59.204, p < 0.001), with higher knowledge observed in urology and emergency departments. Training status was also significantly associated with knowledge (χ^2 = 4.25, p = 0.039), indicating better knowledge among trained nurses. However, qualification (χ^2 = 5.46, p = 0.141), protocol availability (χ^2 = 3.28, p = 0.07), and work experience (χ^2 = 4.915, p = 0.086) were not significantly associated with knowledge.

For attitude, age group (χ^2 = 20.93, p < 0.001), working area (χ^2 = 32.19, p < 0.001), training status

($\chi^2 = 25.44$, $p < 0.001$), protocol availability ($\chi^2 = 4.61$, $p = 0.032$), and work experience ($\chi^2 = 6.96$, $p = 0.031$) were significantly associated, whereas qualification was not significant ($\chi^2 = 5.11$, $p = 0.164$).[15]

According to Lubna Abdullah Dwairej, nurses demonstrated moderate levels of knowledge (11.2 ± 3) and generally positive attitudes (31 ± 3.6) toward physical restraint practices. The study also reported moderate compliance with recommended practices (22.7 ± 0.09), and reading about physical restraints was identified as a significant predictor of better practice ($B = 3.475$, $SE = 1.064$, $\beta = 0.392$, $p = 0.002$).[9]

Finally, knowledge was significantly associated with attitude ($\chi^2 = 7.89$, $p = 0.005$), where 72.9% of nurses with poor knowledge had a positive attitude compared to 55.5% among those with good knowledge. Nurses in the present study exhibited significantly more positive attitudes toward the use of physical restraints compared to previous research findings.[10–12]

Mehrok et al., and Wang reported that nurses' attitudes toward the use of physical restraint were negative. In contrast, the present study found that most nurses (64.9%) had a positive attitude toward patient restraint.[13]

Dwairej et al., reported a significant positive correlation between knowledge and attitude scores ($r = 0.627$, $p < 0.001$). Similarly, the present study found a significant association between knowledge and attitude among nurses ($\chi^2 = 7.89$, $p = 0.005$), indicating that improved knowledge is associated with better attitude toward patient restraint practice.[9]

Limitations

This study was conducted in a single teaching hospital, which may limit the generalizability of the findings to other healthcare settings. Additionally, the use of a non-probability convenience sampling technique may affect the representativeness of the sample.

Conclusions

This study revealed that more than half of the nurses had poor knowledge regarding patient restraint, while a majority demonstrated a positive attitude. Knowledge and attitude were significantly associated with key factors such as age, working area, and training status. Additionally, knowledge was significantly associated with attitude, indicating that improved knowledge may contribute to better professional behavior. The findings highlight the need for regular training programs and effective implementation of standardized protocols to enhance nurses' competency in patient restraint practices.

Ethics approval: Ethical approval for the study was obtained from the Institutional Review Committee of CMS-TH before data collection (Ref. No.: COMSTH-IRC2023-24). Confidentiality and anonymity of participants were strictly maintained. Participation was voluntary, and informed consent was obtained from all respondents.

Conflict of interest: The author declares no conflict of interest.

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

Author contributions

Conceptualization: Srijana Shrestha
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