

Safe Working Behavior Related to Patient Handling among the Nurses Working in a Tertiary Care center of Nepal

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Introduction

Nurses' safety behaviors play a vital role in patient safety.¹ Patient safety is essential to providing required health services which should be effective, safe, and patient-centered. Moreover, it must be timely, equitable, and efficient, it is also considered by the avoidance, and prevention of unwanted results or harms resulting from the process of medical services.² In 2019, World Health Organization (WHO) titled 17th September the World Patient Safety Day with the publication "10 Facts about Patient Safety" mentioning that adverse events caused by unsafe nursing behavior are among the top ten causes of death and disability in the world. Because of hazardous care and poor-quality health care, every year millions of patients suffer injuries or die; these risks associated with healthcare services are emerging as major challenges for patient safety and contribute significantly to the burden of harm². In developed countries,

one in ten patients are injured by adverse events while receiving hospital treatment and about 50% can be prevented. In low- and middle-income countries, about 134 million adverse events are caused by unsafe care each year, resulting in at least 2.6 million deaths. This indicates the importance of nurse safety behavior in promoting patient safety and improving patient outcomes.³ Nurses play a critically fundamental role in ensuring patient safety while providing care directly to patients and they are accountable for direct and continuous patient care.^{4,5} Nurses have round-the-clock and the most frequent contact with patients in hospitals, and their level of safety behaviors affects patient safety. If the nurses' safety behavior declines, it will have several harmful effects, increasing patients' pain, Prolong hospital stay, and affecting their recovery and rehabilitation. The overall image of nursing teams and hospitals will also be affected.⁶ Nurses' safety behavior is pivotal for patients' safety

Abstract

Introduction: Safety behavior is crucial for nurses to ensure the patient's safety. It is a critical parameter of healthcare quality. Safe working behaviors related to patient handling of the nurses are prime for patient's safety. Thus, this study aimed to assess the safe working behavior related to patient handling among nurses working in Pokhara Academy of Health Sciences, Pokhara, Nepal.

Methods: A quantitative, descriptive, cross-sectional study was carried out among 115 nurses working in the Pokhara Academy of Health Sciences through convenience sampling. A self-administered questionnaire on the "Safe Work Behavior Related to Patient Handling (SWH-PH) tool developed by Soo-Jeong Lee was used for data collection. Descriptive statistics analyzed demographics, while the chi-square test assessed associations in safe behavior using SPSS software, with significance set at $p=0.05$.

Results: This study found that the majority of nurses were in the young age group of 21-30 (75%) about two-thirds of nurses had a bachelor's degree in nursing (67.8%). The mean score on safe work behavior related to patient handling of the nurses was 3.50 out of 5. The education level and the working area of the nurses were statistically significant mean differences in safe patient handling behavior.

Conclusion: The study revealed that fifty percents of the nurses working in Pokhara Academy of Health Sciences had adequate safe working behavior during patient handling. The study recommends that hospital management should enhance the safety culture in hospitals in promoting nurses' safe behavior related to patient handling.

Keywords: safe behavior, patient handling, safe work, nurses

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goals as nurses are required to engage further patient care and work in fast-paced circumstances where patients need more complex treatment. Due to insufficient staffing, workload, and turnover increase. Each of these factors hurts entire working environments of nurses, nurses' performance, and patient outcomes.⁷⁻⁹ Preserving patient safety is one of a nurse's prime responsibilities. A nurse's role in patient safety is significant and can influence their working behavior. The latest AORN "Guideline for safe patient handling and movement" offers perioperative nurses with direction on safe patient handling and movement practices to help minimize the incidence of injuries to patients and health care workers.¹⁰

Healthcare workers suffer from work-related musculoskeletal disorders highly as a result of overexertion when performing manual transferring, repositioning, lifting, and mobilization of patients. Back and shoulder injuries persist as the most frequent and costly work-related musculoskeletal disorders for nurses and other health professionals such as physical and occupational therapists¹¹. Work-related musculoskeletal disorders significantly impact the quality of life of affected individuals, that can cause result in financial hardship, and affect service provision.¹²⁻¹³ A systematic review found that interventions to improve the safety culture are poorly explored; and comprehensive efforts to improve safety culture were not only associated with positive changes regarding safety culture but could also improve specific quality and safety indicators such as medication safety, falls, infection rates, and occurrence of pressure ulcers for the care recipient.¹⁴

Nurses are important professionals in ensuring patient safety as they are responsible for direct and continuous patient care.⁵ As the largest healthcare workforce and the closest point of contact for patients, the safe working behavior of nurses can significantly influence patient safety in healthcare institutes.¹⁵ Safe patient handling has been recognized as a top priority for the safety of nurses by the American Nurses Association.¹⁶ Despite the importance of nurses' safe working behavior for patient safety and developing a safety culture in the working environment, very few studies have undertaken in this aspect. To the best of the investigators' knowledge, study on nurse's safe patient-handling behavior has not been conducted in Nepal. The findings of this study could be valuable in establishing safety standards in nursing practice during patient handling. The major aim of this study is to evaluate safe patient handling behavior among the nurses working at Pokhara Academy of Health Science, Pokhara, Nepal.

Methods

A quantitative descriptive cross-sectional design was used to assess the nurses' safe working behavior related to patient handling. Data were collected from May- June 2024. A convenience sampling method was used. 115 nurses working at Pokhara Academy of Health Sciences, Pokhara participated in the study. A self-administered questionnaire was used that included two parts; in the first part, the demographic information of participants includes age, marital status, education, working experience, job level, and working department. The second part, "Safe Work Behavior Related to Patient Handling (SWB-PH)" was used for data collection developed by Lee, Soo-Jeong in 2010.¹⁹ This instrument consisted of 15 items divided into two parts: the preparation phase before performing patient handling tasks and use of the body mechanics; during the tasks;

included 10 items regarding assessment; the second phase related to body posture and bending during patient handling included 5 items. Each statement explains the frequency of the nurse engaging in the task and answers with a 5-point Likert scale (1= never, 5 =all the time). Among them two items of preparation phase scored reversely. The reliability of the SPHB was found acceptable by Cronbach's alpha coefficient equals 0.75. After obtaining written consent, the questionnaires were distributed to participants. Voluntary participation was achieved and anonymity was maintained.

The SWB-HP score was computed as a mean score of items answered. The collected data was analyzed by using SPSS version 16. The demographic characteristics were analyzed into descriptive statistics including frequency, and percentages. Each statement's score ranges from 1 to 5. A higher mean score indicates safer behavior, meaning that the nurses are more frequently engaging in that statement in safe patient-handling behavior. The mean score of Safe Patient Handling Behavior (SWB-PH) was used as a cutoff point, the nurses who scored above this mean score had adequate safe patient handling behavior, so as who scored less than mean score had inadequate safe working behavior. Chi-square test was applied to examine the association between nurse's safe patient handling behaviors and their demographic characteristics. Ethical approval was obtained from the Institutional Review Committee of Pokhara Academy of Health Sciences (IRC-PoAHS ref No. 2/081).

Results

115 nurses were participated in this study. This study found that the mean age of the respondents was 30 years that range from 20 to 57 years. The majority of respondents (69.6%) were more than 25 years old with about two third (67.8%) having bachelor's degree in nursing. The majority of the respondents (60.9%) were married and majority (86.1%) were working as staff nurse. More than half of the nurses had less than 5 years of work experience with less than two third (62.6%) were working in general ward. Table 1 depicts the demographic characteristics of respondents.

The figure 1 presented the finding of this study that only about half of the respondents had safer working behavior related to patient handling.

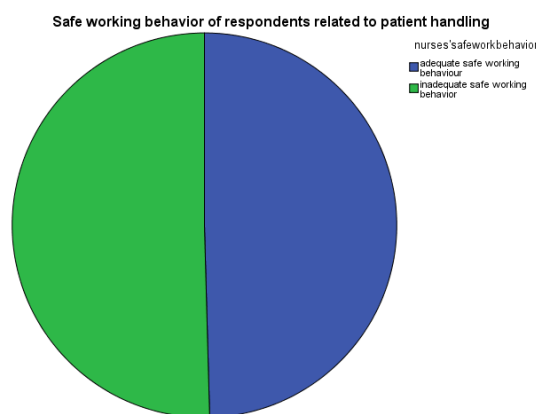


fig.1. Safe working behavior of respondents related to patient handling

Fig 1: Presented the finding of this study that reveals about 50% of the nurses demonstrated safe working behavior related to patient handling; the findings indicate a critical need for improvement in this area.

Table 1: Demographic Characteristics of the Respondents n=115

Characteristics	Frequencies	%
Age	Mean + SD (30 + 7.95) range(20-57)	
Less than 25	35	30.4
More than 25	80	69.6
Education level		
ANM	3	2.6
PCL Nursing	27	23.5
Bachelor in Nursing	78	67.8
Master	7	6.1
Marital Status		
Single	45	39.1
Married	70	60.9
Job Title		
ANM	4	3.47
Staff Nurse	99	86.1
Supervisor	12	10.4
Work Experience		
1-5 years	66	57.4
6-10 years	20	17.4
11-15	10	8.7
More than 15years	19	16.5
Working area		
General ward	72	62.6
Critical ward	43	37.4

Safe behavior score in different task

As shown in table 2 the mean of nurses' safe working behavior was 3.50 out of a possible score of 5 with the standard deviation of 0.34. This indicated that nurses demonstrated safe patient-handling behavior for most tasks. The mean scores for 10 tasks related to performing before patient-handling activities ranged from 2.04 to 4.54. Seven tasks scored above the mean score for safe patient-handling behavior, indicating that nurses exhibited safe patient-handling behavior more frequently for these tasks.

Table 2: Safe Patient Handling Behavior of Respondents (n=115)

Tasks	Mean score	SD
Safe Patient Handling Behavior	3.50	0.34
Perform before patient handling		
I assess the condition of the patient	4.54	0.78
I assess whether the space is too crowded to perform the task	4.29	0.82
I clear space to make enough room for the task if needed	4.20	0.74
I ask help from co-workers if needed	4.08	0.85
If no co-worker is readily available, I perform the task by myself*	2.04	0.88
I encourage the patient to assist if possible	3.84	0.98
I assess the height of the bed to see if it is at the proper height (at waist level)	4.00	0.98
I adjust the height of the bed when it is not appropriate for my height	3.77	1.06
If the patient is physically dependent, I use a lifting device or transfer aid	2.94	1.38
If a lifting device is not readily available, I perform the task manually*	2.26	1.15
During the patient handling		
I face the patient	4.30	0.81
I keep my feet apart (shoulder width)	3.91	0.77
I keep my back straight	3.66	0.90
I bend my knees, not my back	3.29	0.99
I turn my whole body towards the patient and do not twist my back	3.46	1.04

* Items were coded reversely.

These tasks included: assessing the patient's condition with mean + SD (4.54 + 0.78), assessing whether the space is too crowded for the task with mean + SD (4.29 + 0.82), clearing space to make enough room for the task, if necessary, with mean + SD (4.20+ 0.74), asking for help from a co-worker if needed with mean + SD (4.08+ 0.85).

On the other hand, the items that rated score lower than the mean score for performing tasks before patient handling were: using a lifting device or transfer aid if the patient is physically dependent (mean score 2.94), if a lifting device is not readily available, performing the task manually (reversed, mean score 2.26), if no co-worker is readily available, performing the task alone (reversed, mean score 2.04). These results suggest that the frequency of safe patient-handling behavior by nurses was lower for tasks performed before handling patients.

During handling patients, the mean scores of the items range from 4.30 to 3.29. A total of 3 out of 5 items were rated higher than the mean score. The items with higher ratings were: facing the patient, with a mean score of 4.30; keeping feet apart (shoulder width), with a mean score of 3.91; and keeping the back straight, with a mean score of 3.66. The items related to body mechanics during patient handling that rated less than the mean score was: bending the whole body towards the patient and not twisting the back, with a mean score of 3.46; and bending the knees, not the back, with a mean score of 3.29.

Association of safe behavior with sociodemographic characteristics

The association of safe working behavior and socio-demographic variables of the respondents have been presented in Table 3. It was found that age and education level of the respondents are statistically significant factors associated with safe working behavior in patient handling.

Table 3: Association of safe working behavior related to patient handling with sociodemographic characteristics of the respondents(n=115)

Characteristics	Safe Patient Handling Behavior		X ² Test (p-value)
	Adequate	Inadequate	
Age	Mean + SD (30 + 7.95)		
Less than 25	17 (14.7)	18 (15.6)	5.481 (0.02) #
More than 25	40 (34.7)	40 (34.7)	
Education level			
Below Bachelor	15 (13.0)	15 (13.0)	6.742 (0.009) #
Above Bachelor	42 (36.5)	43 (37.4)	
Marital Status			
Single	23 (20.0)	22 (19.1)	0.071 (0.790)
Married	34(29.5)	36 (31.3)	
Job Title			
ANM	2 (1.7)	2(1.7)	0.416 (0.812)
Staff Nurse	48(41.7)	51(44.3)	
Supervisor	7(6.0)	5(4.3)	
Work Experience			
1-5 years	31(26.9)	35(30.4)	0.686 (0.889)
6-10 years	10(8.7)	10(8.7)	
11-15	6 (5.2)	4(3.4)	
More than 15years	10(8.7)	9 (7.8)	
Working area			
General ward	35 (30.4)	37(32.1)	0.529 (0.467)
Critical ward	22 (19.1)	21 (18.2)	

Statistically Significant

The findings of this study revealed that marital status, Job level, work experience, current working area of the respondents were not the statistically significant with the safe working behavior related to patient handling.

Discussion

The findings of the study reveal that only about half of the respondents had adequate safe working behavior related to patient handling that reflected the mean score was 3.50 and standard deviation 0.34 out of 5 the highest possible score- indicating a moderate level of adherence to safe practices.

When compared to the 2010 study of 361 American nurses, which reported a higher average score of 4.85 ± 0.53 on a scale of 6, there was a noticeable disparity.¹⁹ The difference could be attributed to factors like variations in sample size and the design of the measurement tools. Even though both instruments contained similar statements, their scales had

different maximum points, potentially affecting comparability.

This study also uncovered that age and education level significantly influences respondents' safe patient handling behaviors. Nurses with higher education or those working in specific areas demonstrated better safety practices. However, these findings contradicted the 2017 California study, which reported associated higher safety behaviors with shorter height, non-white ethnicity, lower physical workload, higher job satisfaction, and fewer musculoskeletal symptoms.²² The divergence suggests that cultural, demographic, and workplace factors play a crucial role in shaping safe work behaviors, underscoring the complexity of this issue.

Furthermore, a 2023 study conducted in Chinese hospitals identified a positive correlation between variables like work engagement, self-efficacy, and safety behavior.⁶ This aligns with research emphasizing the importance of psychological and motivational factors in influencing safety behaviors. However, the results of the current study did not support these findings, suggesting that contextual factors unique to Pokhara Academy of Health Sciences, such as organizational culture, resources, or training programs, might explain the discrepancy.

Limitation

The study site of this study is one tertiary-level hospital using a non-probability sampling method. Therefore, it limits the generalization of the findings.

Conclusions

The safe working behavior related to patient handling of nurses is very essential for patient safety. The study found that about fifty percents of the nurses working in Pokhara Academy of Health Sciences had adequate safe working behavior during patient handling. Hospital management should consider to improve and enhance the safety culture in hospitals in promoting nurses' safe behavior related to patient handling.

Recommendation

The finding of this study recommended that the safe working behavior of the nurses should be improved for patients' safety. The nursing administration and Hospital management should enhance the safety culture in hospitals by promoting nurses' safe behavior related to safe patient handling. This study also recommends that further research needs to represent the nurses of Nepal to assess their safe working behavior during patient handling that provides insight of including the safe working behavior of nurses during patient handling in nursing education and nursing practice.

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