

ORIGINAL RESEARCH ARTICLE

KNOWLEDGE REGARDING PREVENTIVE MEASURES OF PRESSURE ULCER AMONG NURSES

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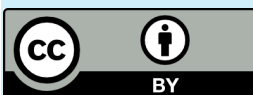
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ABSTRACT

Background: Pressure ulcer is a preventable medical complication. Nurses are primarily responsible in pressure ulcer prevention. This study was designed to find out knowledge regarding preventive measures of pressure ulcer among nurses.

Methods: Descriptive study was conducted among 100 nurses, selected by using non-probability convenience sampling technique. Pretested Self-administered semi-structured questionnaire was used and collected data were analyzed by using descriptive and inferential statistics with Statistical Package for Social Sciences software version 20.0.

Results: The findings of the study revealed that nearly half (48%) of the respondents had low knowledge regarding pressure ulcer. Regarding age, majority (52%) of the respondents were of age group 18-27 years. Regarding qualification, 48% of the respondents were PCL nursing and 47% had working experience of 1-5 years. Similarly, 17% of respondents were working in Gynecology ward and 85% had exposed to managed patients with pressure ulcer. Among them, 76% of the respondents had knowledge regarding meaning and 96% had knowledge regarding signs of pressure ulcer. Ninety two percent of the respondents had knowledge that position of patients should be changed every 2 hourly, 38% had knowledge that patient's head should be elevated at or below 30° and 73% had knowledge that normal saline is the best solution to cleanse pressure ulcer. There was statistically significant association of respondents' level of knowledge regarding ulcer with working department ($p=0.001$).

Conclusions: The study concluded that nearly half of the nurses have low knowledge regarding pressure ulcer. It is recommended to hospital management to conduct in-service education for nurses.

INTRODUCTION

A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure which is also associated with number of contributing factors. Pressure ulcers have significant impact on physical aspects of patients' health related quality of life, including imposing physical restrictions, lifestyle changes and the need for environmental adaptations.¹ Pressure ulcer is a debilitating, chronic wound. Pressure ulcers are significant problem in all health settings, affecting approximately 10% of hospitalized and 5% of community living patients.² Risk factors for pressure ulcer include impaired mobility and older age, incontinence, inadequate nutrition and hydration, neurosensory deficiency, device related skin pressure, multiple comorbidities and circulatory abnormalities.³

In a study conducted in Belgium, the overall prevalence of pressure ulcer was 13.5% where Intensive care units and geriatric wards were highest prevalent areas. Approximately 30% of the patients were at risk. Only 13.9% of the patients at risk received fully adequate prevention.⁴

Another study conducted in Belgian nursing homes, among

145 nurses to assess the knowledge and attitude of nurses regarding pressure ulcer showed that nurses' knowledge regarding pressure ulcer was 28.9%.⁵

Above studies have shown lack of knowledge among nurses on pressure ulcer which can contribute to the complications which can be life threatening for the patients. Adequate knowledge on pressure ulcer prevention among nurses not only improves the quality of life of patients but also reduces hospital stay. Thus, researcher designed this study to find out knowledge regarding preventive measures of pressure ulcer among nurses.

METHODS

A descriptive study was conducted among nurses working in different wards (medical, surgical, orthopedic, ICU, CCU) of Lumbini Zonal Hospital of Butwal Sub Metropolitan City, Rupandehi District Province-5. Total sample of 100 nurses were selected by using non-probability convenience sampling. Pretested semi-structured questionnaire was developed by researchers by reviewing the related literatures and consulting with the subject experts. The research instrument was consisted of two parts: Part I: related to socio-demographic variables

and part II: related to knowledge regarding pressure ulcer. Self-administered semi-structured questionnaire was used to collect data.

Administrative permission and ethical approval were obtained from the Institutional Review Committee (IRC/105/19) prior to data collection. Data collection was done within 4 weeks periods (26th May to 22nd June 2019) in different wards (Gynae, Medical, Surgical, OT, NICU, ICU, Labour, Postnatal, Pediatric, etc.) of Lumbini Zonal hospital. The inclusion criteria were those nurses available during the data collection period. The exclusion criteria were those who were not willing to participate. All the collected data was analyzed by using descriptive statistics and inferential statistics with Statistical Package for Social Science software (SPSS) version 20.0.

RESULTS

The findings of the study revealed that majority (52%) of the respondents were of age 18-27 years, 35% of respondents were of age 28-47 years, 7% of respondents were of age 38-47 years, 5% of respondents were of age 48-57 years and only 1% of respondents was of age above 58 years (Table 1).

Table 1: Distribution of respondents based on age (n=100)

Age in years	Frequency/ Percentage
18-27	52
28-37	35
38-47	7
48-57	5
Above 58	1

The findings regarding qualification, nearly half of the respondents (48%) had education of PCL nursing and nearly half of the respondents (47%) had working experience of 1-5 years.

Table 3: Respondents' knowledge regarding Meaning of Pressure Ulcer (n=100)

Meaning of pressure ulcer	Frequency / Percentage
An injury that needs pressure placed over it to heal	11
A localized injury to the skin and/or underlying tissue as a result of pressure*	76
An infection that spreads throughout skin originating from a pressure point	11
An infection that leads to pressure over underlying TISSUE	2

*Correct response

The findings regarding knowledge of pressure ulcer, more than half (76%) of the respondents answered a localized injury to skin and/or underlying tissue as a result of pressure as the meaning of pressure ulcer (Table 3). The findings of the study showed that majority of the respondents (93%) answered bed sore and 17% of the respondents answered pressure injury as the synonyms of pressure ulcer. The mean percentage score regarding synonyms of pressure ulcer was 65.5.

The findings of the study showed that 97% of the respondents

Similarly, 17% of respondents were working in Gynecology ward and majority of the respondents (85%) had exposed to manage the patients with pressure ulcer (Table 2).

Table 2: Baseline data of respondents (n=100)

Baseline Data	Frequency/ Percentage
Qualification	
ANM	14
PCL	48
PHN	2
BSc.Nsg	8
PBBN	28
Working experience	
Below 1 year	18
1-5 years	47
6-10 years	13
11-15 years	8
16-20 years	6
21-25 years	3
26-30 years	3
31-35 years	2
Working experience	
OT	13
Medical	11
Surgical	12
Gynae	17
Labour	6
Postnatal	2
Paediatric	12
MCH	5
NICU	10

answered immobility and 31% of the respondents answered advanced age as the risk factors of pressure Ulcer. The mean percentage score was 55. Regarding sign of pressure ulcer, the findings of the study revealed that 96% of the respondents answered pale, red or blue-grey discoloration on skin. Regarding common sites for pressure ulcer, the findings of the study showed that mean percentage score was 81 in supine, 66.6 in side lying and 63.25 in prone position respectively.

Regarding characteristics of the pressure ulcer, the findings of the study showed that 69% of the respondents answered intact

skin with hyperemia of a localized area as stage I, 56% of the respondents answered partial skin loss with blister and abrasion as stage II, 69% of the respondents answered full thickness skin loss involving subcutaneous tissue as stage III and 65% of

the respondents answered full thickness tissue loss involving damage to muscle, bone or supporting structures respectively (Table 4).

Table 4: Respondents' knowledge regarding characteristics of Pressure ulcer (n=100)

Variables	Frequency/ Percentage
Characteristics of pressure ulcer	
Stage I	
Partial thickness skin loss involving epidermis and dermis	7
Partial thickness skin loss involving subcutaneous tissue	16
Ruptured fluid filled blisters on the skin	8
Intact skin with hyperemia of a localized area*	69
Stage II	
Partial skin loss with blister and abrasion*	56
Partial thickness skin loss involving subcutaneous tissue	14
Full thickness skin loss involving subcutaneous tissue	21
Area of persistent redness in lightly pigmented skin	9
Stage III	
Partial thickness skin loss involving epidermis and dermis	4
Partial thickness skin loss involving subcutaneous tissue	13
Full thickness skin loss involving subcutaneous tissue*	69
Full thickness tissue loss involving damage to muscle, bone or supporting structures	14
Stage IV	
Full thickness skin loss involving subcutaneous tissue	10
Full thickness tissue loss involving damage to muscle, bone or supporting structures*	65
Partial thickness skin loss involving subcutaneous tissue	12
Partial thickness tissue loss involving damage to muscle, bone or supporting structures	13

*Correct response

The findings of the study showed that 88%, 88%, 75% and 63% of the respondents answered assessment of skin for redness and edema, mobility, nutritional status and degree of moisture and incontinence should be included in risk assessment for pressure ulcer respectively.

The findings of the study showed that 99% and 74% of the respondents answered air mattress and pillow as the devices useful for prevention of pressure ulcer respectively. Regarding position change, 92% of the respondents answered position of the patient should be changed in every 2 hours. Similarly, 38% of respondents answered patient's head should be elevated at or below 30°. Regarding transferring patient from bed, 98% of the respondents answered by lifting.

Regarding knowledge of nutrition during pressure ulcer, 78%, 68%, 58% and 49% of the respondents answered high protein diet, plenty of fluids, vitamin rich diet and high calorie diet should be provided to patients with pressure ulcer respectively. Similarly, 73% of respondents answered normal saline as the best solution to cleanse pressure ulcer and 56% of the respondents answered honey dressing can be applied over pressure ulcer. Regarding complication of pressure ulcer, 82%, 76%, 74% and 58% of the respondents answered cellulitis, sepsis, gas gangrene and osteomyelitis respectively (Table 5).

Table 5: Respondents' knowledge regarding prevention of pressure ulcer (n=100)

Variable	Frequency/ Percentage
Useful devices**	
Air mattress*	99
Ring cushions	36
Pillow*	74
Foot board	69
Position changes	
Every 1 hour	1
Every 2 hours*	92
Every 4 hours	2
Once a shift	5
Degree of head elevation	
At or below 30*	38
At or below 60	25
At or above 45	37
At or above 60	-
Patient transferring from bed	
By pulling	2
By pushing	-
By lifting*	98
By dragging	-

**Multiple response

*Correct response

The findings of the study showed that more than half (52%) of respondents had high knowledge regarding pressure ulcer management and 48% had low knowledge. The mean score was 30.34 (Table 6).

The findings of the study showed that there was statistically significant association between working department ($p=0.001$) and the knowledge regarding pressure ulcer (Table 7).

Table 6: Respondents' Level of Knowledge Regarding Pressure Ulcer (n=100)

Level of knowledge	Frequency/ Percentage
High	52
Low	48
Total	100

Table 7: Association between Socio-demographic Variables and Respondents' Level of Knowledge Regarding Pressure Ulcer (n=100)

Variables	Level of knowledge		χ^2	p-value
	High No (%)	Low No (%)		
Ages				
18-27 years	25 (48.1%)	27 (51.9%)	2.365	0.669
28-37 years	20 (57.1%)	15 (42.9%)		
38-47 years	4 (57.1%)	3 (42.9%)		
48-57 years	3 (60.0%)	2 (40.0%)		
Above 58 years	-	1 (100%)		
Qualification				
ANM	6 (42.9%)	8 (57.1%)	1.609	0.807
PCL	28 (58.3%)	20 (41.7%)		
PHN	1 (50%)	1 (50.0%)		
BSc. Nsg	4 (50.0%)	4 (50%)		
PBBN	13 (46.4%)	15 (53.6%)		
Working experience				
Below 1 year	6 (33.3%)	12 (66.7%)	5.554	0.593
1-5 years	28 (59.6%)	19 (40.4%)		
6-10 years	7 (53.8%)	6 (46.2%)		
11-15 years	5 (62.5%)	3 (37.5%)		
16-20 years	2 (33.3%)	4 (66.7%)		
21-25 years	1 (33.3%)	2 (66.7%)		
26-30 years	2 (66.7%)	1 (33.3%)		
31-35 years	1 (50.0%)	1 (50.0%)		
Working Department				
OT	8 (61.5%)	2 (38.5%)	27.201	0.001
Medical ward	6 (54.5%)	5 (45.5%)		
Surgical ward	9 (75.0%)	3 (25.0%)		
Gynae ward	4 (23.5%)	13 (76.5%)		
Labour ward	2 (33.3%)	4 (66.7%)		
Postnatal ward	-	2 (100%)		
Pediatric ward	7 (58.3%)	5 (41.7%)		
MCH	-	5 (100.0%)		
NICU	9 (90.0%)	1 (10.0%)		
ICU	7 (52.0%)	5 (48.0%)		
Managed pressure ulcer				
Yes	45 (52.9%)	40 (47.1%)	0.201	0.654
No	7 (46.7%)	8 (53.3%)		

DISCUSSION

The findings of the study showed that 76% of the respondents had knowledge regarding meaning of pressure ulcer. This is less than the study conducted in Ludhiana, India which shows that 98.50% had knowledge regarding meaning of pressure ulcer.⁶ The findings of the study showed that majority (97%) of the respondents had knowledge regarding immobility as risk factor for pressure ulcer. This is high than the study conducted in Jordan which shows that 90.9% had knowledge regarding immobility as risk factor.⁷ The findings of the study showed that majority (96%) of the respondents had knowledge that pale, red or blue-gray discoloration on skin is a sign for pressure ulcer. This is higher than the study conducted in Ethiopia which shows that 39.1% had knowledge regarding the sign for pressure ulcer.⁸

The findings of the study showed that 69% of the respondents had knowledge that intact skin with hyperemia of a localized area is a characteristic of stage I pressure ulcer. This is high than the study⁹ conducted in Brazil which shows that 66.6% had knowledge regarding characteristic of stage I pressure ulcer. The findings of the study showed that 56% of the respondents had knowledge that partial skin loss with blister and abrasion is a characteristic of stage II pressure ulcer. This is less than the study⁸ conducted in Ethiopia which shows that 80.2% had knowledge regarding characteristic of stage II pressure ulcer. The findings of the study showed that 69% of the respondents had knowledge that full thickness skin loss involving subcutaneous tissue is a characteristic of stage III pressure ulcer. This is higher than the study¹⁰ conducted in Iran which shows that 39.7% had knowledge regarding characteristic of stage III pressure ulcer. The findings of the study showed that 65% of the respondents had knowledge that full thickness tissue loss involving damage to muscle, bone or supporting structures is a characteristic of stage IV pressure ulcer. This is less than the study⁹ finding conducted in Brazil which shows that 66.6% of the respondents had knowledge regarding characteristic of stage IV pressure ulcer.

The findings of the study showed that mean percentage score of knowledge regarding risk assessment for pressure ulcer was 78.5. This is higher the study⁵ conducted in Belgium which shows that mean percentage score of knowledge regarding risk assessment for pressure ulcer was 63.9.

The findings of the study showed that majority (99%) of the respondents had knowledge that air mattress is useful for prevention of pressure ulcer. This is higher than the study¹¹ conducted in Netherland which shows that 66.7% had knowledge regarding prevention of pressure ulcer. The findings of the study showed that 74% of the respondents had knowledge that using pillow is useful for prevention of pressure ulcer. This is high than the study¹¹ conducted in Netherland which shows that 66.7% had knowledge regarding prevention of pressure ulcer. The findings of the study showed that 92% of the respondents had knowledge that position of patients should be changed every 2 hourly. This is higher than the study conducted in Pokhara, Nepal which shows that 86% had knowledge regarding prevention of pressure ulcer.¹² The findings of the study showed that 38% of the respondents had knowledge that patients' head should be el-

evated at or below 30° to prevent pressure ulcer. This is less than the study conducted in Iran which shows that 69% had knowledge regarding prevention pressure ulcer.¹⁰

The findings of the study showed that 98% of the respondents had knowledge that patient should be transferred from bed by lifting. This is higher than the study⁸ conducted in Ethiopia which shows that 38.7% had knowledge that patient should be transferred from bed by lifting. The findings of the study showed that mean percentage score of knowledge regarding nutrition during pressure ulcer was 65.75. This is higher than the study¹³ conducted in Turkey which shows that mean percentage score of knowledge regarding nutrition during pressure ulcer was 85.9.

The findings of the study showed that 73% of the respondents had knowledge regarding normal saline as the best solution to cleanse pressure ulcer. The findings of the study showed that 56% of the respondents had knowledge that honey dressing can be applied over pressure ulcer. The findings of the study showed that mean percentage score of knowledge regarding complications of pressure ulcer was 72.5.

The findings of the study showed that almost half (52%) of the respondents had high knowledge and the remaining 48% had low knowledge regarding pressure ulcer. The findings of the study showed that there was statistically significant association between working department ($p=0.001$) and respondents' level of knowledge regarding pressure ulcer.

Study population is confined to nurses of single hospital and the study is limited to 100 respondents. Therefore, the findings cannot be generalized to other settings. The study was conducted by using non-probability convenience sampling technique so that population representation of the study might be low. Therefore, external validity might be decreased. Semi-structured interview schedule was used for data collection. So, it lacks in-depth information.

CONCLUSION

This study concluded that just more than half of nurses have high knowledge regarding pressure ulcer. Education can bring a change in individual behavior so change in knowledge can influence the nurse's skill. So nurses need to get continuing education and training about pressure ulcer prevention and management that will enhance their knowledge. It can also improve knowledge on identifying timely nursing interventions which would improve the quality care to the patient during hospital stay.

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