

Practices Followed by Nurses for Prevention of Pressure Ulcer among Patients Admitted in Tertiary Rural Care Hospital

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Abstract

Background: Pressure ulcer is not a plague of modern man. It is a serious medical problem that can affect a bedridden patient in any health care setting. Pressure ulcer can cause extreme discomfort to the patients and often lead to damage to tissue, underlying muscles, bones or joints. Pressure ulcer occurs across the spectrum of health care settings. Lack of practical skill is also another problem which raises the incidence of pressure ulcer.

Aims: The overall aims of the present study were to assess the expressed practices among nurses regarding prevention of pressure ulcer among patients and develop guidelines for care of pressure points.

Methodology: Quantitative approach was adopted for descriptive study and conducted in MMIMS&R, Hospital, Mullana, Ambala during a period from September, 2017 to April, 2018. 157 nurses were selected by total enumerative sampling technique. The data was collected by assessing expressed practices of nurses by expressed practice questionnaire.

Results: The major findings revealed that gender and area of work were found to be significant at a 0.05 level of significance. In addition to this Majority of nurses were performed expressed fair practices (93.35%) followed by 5.73% good practices and 1.91% poor practices regarding prevention of pressure ulcer. Nurses do not assess patient for presence of pressure ulcer neither use any risk assessment tool. So, the researcher had decided to develop "Guidelines for the Prevention of Pressure Ulcer" which include assessment, prevention and management of pressure ulcer and also distributed to nurses in selected wards.

Keywords: Expressed Practices, Nurses, Prevention, Pressure Ulcer, Patients.

Background

Patients get admitted to hospital for getting rid of their suffering, with the help of health care professionals but patients who are bedridden face various problems such as poor personal hygiene, bed sores, depression and nervousness. Pressure ulcer is not a plague of modern man; it has been known to exist since ancient Egyptian times¹. According to Ayurveda, bed sore is termed as Shayya(lying down)- Vrana(wound). In medical term, they are called decubitus ulcer or decubitus sore.² Pressure

ulcer can lead to extreme discomfort and serious life-threatening infections^{3,4} it reduces blood supply to that area which causing tissue ischemia, tissue deformation and also obstruct lymphatic flow, that leads to accretion of metabolic waste products, protein and enzyme in the affected tissue and lead to tissue damage^{5,6}. Bony prominences are most commonly affected like occiput of head, shoulders, sacrum, elbow, hips and ankles, trochanter, malleoli and heels⁷. Only for small duration, tissues are capable to underneath pressure on the arterial side of around 30-32 mmHg. Constant pressure results in distortion, probably describes the occurrence of a pressure ulcer.^{8,9,10}

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Hospital-acquired pressure injuries are localized areas in which damage occur to the skin, underlying

tissue, or both. These injuries occur in 3%–34% of hospitalized patients worldwide and result in increased human suffering¹¹⁻¹³. Diabetic foot ulcers are considered one of the most common and overwhelming chronic complications of diabetes because they elevate morbidity, high hospitalization rates¹⁴.

Mechanical boundary conditions are independent risk factors, involve the aspects pressure duration, friction, shear¹⁵ which may amplify internal distortion of soft tissues that can advances to cause atrophy^{16,17}. Friction, along with pressure and shear can occlude flow¹⁸. Among underweight individuals, body size also affects the potential for increased weight on bony prominences¹⁹. Immobility, surgical state, turning and repositioning are also independent factor in enhancing the risk of pressure ulcer²⁰⁻²². Severity of illness is measured by acute physiology and chronic health evaluation (APACHE), which measures the score within 24 hour of admission in intensive care unit²³. In long term care unit, poor intake of protein, zinc & vitamins are associated with development of pressure ulcer²⁴. Poor perfusion alters the oxygen delivery to tissues²⁵. Vasopressin infusion²⁶, General skin status²⁶, edema²⁷, moisture²⁸ are the factors which also affect the risk of occurrence of pressure ulcer. In addition, male gender was also independent predictive of risk of pressure ulcer¹¹. Smoking was an autonomous risk factor for pressure injury development²². Risk assessment scales and lab investigations serum creatinine levels are indicators of tissue injury¹².

Debridement, local wound care, infection control, hyperbaric oxygen therapy and off-loading of pressure are the regular care of pressure ulcers. Negative-pressure wound therapy enhances wound healing¹⁴. Skin perfusion pressure (SPP) is a noninvasive technique of assessing tissue viability²⁹. A multidisciplinary team approach is needed for prevention of pressure ulcer especially those who are at high risk. Everyone who is in contact with the patient is liable for prevention.²⁸ The bed sheet should be clean, dry, wrinkled free and patient should be turned regularly, every 2 hourly as needed. Comfort devices & back care should be provided to improve the blood circulation. There should be adequate intake of calorie 30-35kcal/kg and protein 1.5g/kg/daily for patients, suffered from pressure ulcers. Adequate hydration should be provided i.e., 1500ml-2000ml, unless it is contraindicated. Encourage the patients to perform range

of motion exercises. Prevention is the best solution to manage the occurrence of pressure ulcer³⁰. The nurse's knowledge and practice regarding the management of immobilized patient care will enhance the quality of life of the patient. In the present study, Researcher investigates the expressed practices of nurses regarding prevention of pressure ulcer among patients admitted in tertiary rural care hospital. Researcher assumes that nurses follow some practices for prevention of practice ulcer.

Aim - The overall aim of the study was to assess the practices of nurses regarding prevention of pressure ulcer and develop guidelines on care of pressure points.

Material & Method

It used a descriptive research design. The study was conducted at MMIMS&R Hospital Mullana, Ambala. By using total enumerative sampling technique, 157 nurses were selected who were working in Medicine Ward, Surgery Ward, Ortho Ward & Neuro Ward. Data collection tool was expressed practice questionnaire. The reliability coefficient was calculated by KR 20 it was found to be 0.82. Thus the tool was found to be reliable. Guidelines on care of pressure points were formulated for enhancing the knowledge and practice. Guidelines include the components of screening, use of comfort devices, treatment and prevention of pressure ulcer. After obtaining formal permission from the medical superintendent and nursing superintendent, study was conducted in April 2018 & average time occupied to administer tool was about 15 minutes and data was analyzed and interpreted in terms of objectives of the subjects by using descriptive and inferential statistics (Chi Square & ANOVA).

Results

Findings of sample characteristics: Most of the nurses (60%) belong to the age group of 24-26 years whereas 91.7% of nurses are female. Further the table shows that maximum number of nurses belongs to Hindu religion (82.8%) and most of the nurses were single (86.62%). Further the findings reveal that majority of nurses (85.9%) pursue diploma followed by B.Sc. (N) (12.73%) & Pb.B.Sc.(1.27%). In addition to this, only 43.94% had 2-3 year work experience. Most of the nurses (47.4%) work in ICU followed by medicine (19.74%) and surgery ward (19.74%).

Finding related to expressed practices of nurses regarding pressure ulcer prevention**Table 1 Frequency and percentage distribution of nurses expressed practice regarding prevention of pressure ulcer.**
N-157

S. No.	Nurses Activities	Frequency	Percentage
1.	Screening: Screens all patients for pressure ulcer at regular interval once at least each shift.	70	44.58%
2.	Inspect skin of the high risk patients (bed ridden, incontinent, having nutritional deficit, age etc.) Especially at bony prominences at once shift.	131	83.43%
3.	Comfort: Assist/encourage patients in turning, rising, changing position at least 3 times per shift.	140	89.17%
4.	Uses of a comfort device available in the ward for high risk patients.	146	92.99%
5.	Maintain/ assist in personal hygiene, if patient is incapable/ find it difficult to maintain.	149	94.90%
6.	Changes position of high risk patients every 2 hourly.	154	98.08%
7.	Keeps the bed sheet wrinkle free & dry.	156	99.36%
8.	Uses non-alcohol based emollients to maintain the skin moisture.	03	1.91%
9.	Does back care for high risk group prone to develop pressure ulcer.	63	40.12%
10.	Does gentle massaging of bony prominences for improving blood supply.	14	8.91%
11.	Ensure that patient hydration status is maintained.	132	84.07%
12.	Education: Motivate the patients to perform range of motion exercise at regular intervals.	89	56.68%
13.	Educate the patient to maintain adequate nutritional status.	144	91.71%
14.	Involve family & client in preventive care:		
	• In assisting, turning, rising, changing position.	157	100%
	• In using comfort devices.	146	92.99%
	• In maintain personal hygiene.	146	92.99%
	• Keeping the bed sheet wrinkle free & dry.	146	92.99%
	• Helping patient to perform range of motion exercise.	21	13.37%
	• In doing gentle massage of bony prominence.	08	5.09%

Table 1 depicts the activities by nurses to prevent the occurrence of pressure ulcer. Maximum performed activities by nurses were changing in position of patient, use of comfort devices, maintenance of personal hygiene and dry, wrinkle free bed sheet. Least performed activities were use of emollient, massaging of bony prominences, helping patient to perform range of motion exercises and screening of all patients at each shift.

Table 2 Frequency and percentage distribution of nurses according to level practices regarding pressure ulcer. N-157

S. No.	Level of expressed Practices	Frequency(f)	Percentage (%)
1.	Good Practice (>75%)	09	5.73%
2.	Fair Practice (50-75%)	145	92.35%
3.	Poor Practice (<50%)	03	1.91%

Table 2 depicts that only 09 nurses (5.73%) performed good practice in relation to pressure ulcer prevention. Maximum nurses 145 (92.35%) performed fair practice followed by 03(1.91%) performing poor practice.

Factors influencing practice

Table 3 Association of Expressed Practices of Nurses with selected sample characteristics N=157

S. no.	Sample Characteristics	Mean	S.D.	F-test	df	p-value
1.	Age in years					
1.1	21-23	12.28	1.6115			
1.2	24-26	12.09	1.52	0.383	7,149	0.911 ^{NS}
1.3	27-29	11.8	0.69			
2.	Gender					
2.1	Male	11.4	1.292	6.930	1,155	0.009 ^S
2.2	Female	12.26	1.532			
3.	Marital Status					
3.1	Single	12.09	1.556	2.171	1,155	0.143 ^{NS}
3.2	Married	12.62	1.396			
4.	Religion					
4.1	Hindu	12.16	1.539			
4.2	Muslim	11.85	1.405	0.446	3,153	0.720 ^{NS}
4.3	Sikh	12.17	1.329			
4.4	Christian	12.60	1.955			
5.	Educational Status					
5.1	G.N.M	12.10	1.529			
5.2	B.Sc. (N)	12.47	1.645	1,271	2,154	0.283 ^{NS}
5.3	P.B. B.Sc. (N)	13.50	0.707			
6.	Year of experience					
6.1	<1 year	13.09	1.571			
6.2	1-2 year	12.08	1.523			
6.3	2-3 year	12.00	1.495	2.586	5,151	0.28 ^{NS}
6.4	3-4 year	11.29	0.756			
6.5	4-5 year	11.83	1.722			
6.6	>5 year	13.00	1.732			
7.	Area of work					
7.1	Medicine Ward	12.63	1.214			
7.2	Surgery Ward	12.84	1.440			
7.3	Ortho Ward	13.33	0.840	12.313	4,152	0.0001 ^S
7.4	ICU Ward	11.58	1.508			
7.5	Neuro Ward	10.43	0.535			

Analysis of table 3 shows that there was significant difference found in practice with gender and area of work at a 0.05 level of significance.

Discussion

This study assesses the practices of nurses regarding prevention of pressure ulcer. In this study, most frequency performed preventive activities by nurses in relation to prevention of pressure ulcer were: 100% nurses involve family and client in preventive care in assisting, turning, rising and changing position. 99.36% nurses keep the bed sheet wrinkle free and dry. In addition to this level of expressed practice was found to be significant with gender and area of work which is comparable to the study by **Anand R², Uba.et.al³¹**. The result of the study are not consistent with the study by **Shrestha N.et.al³²** use of comfort devices 44% and changing position of patients 58%.The result of the study indicates that maximum (92.35%) expressed practices of nurses were fair. This is also comparable to the observations of study by **Nasreen S.et.al³³** in which level of practice of maximum nurses were poor.

Limitations The main limitation of the study was the inability to assess the actual practices of nurses. As the sample size was small and sample selected from single hospital. Therefore results and findings may not be generalized to all nurses.

Conclusion

Patients with pressure ulcers often suffer from at-rest pain and may develop gangrene. Use of a risk assessment tool is recommended by many international pressure ulcer prevention guidelines for the early identification. Thus, Guidelines be considered effective in prevention of pressure ulcer.

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