

Evaluate the Incidence of bedsores in immobilized patients with intensive care units



Nursing

KEYWORDS: Bedsores, Immobilized Patient, Staff Nurses, Braden Scale, Intensive Care Unit.

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ABSTRACT

Background: this study aims to assess bedsores prevention knowledge among nurses and to determine factors on which levels of their knowledge depends in selected hospitals of Wardha district. **Objectives:** 1) To assess the existing bedsores among immobilized patients. 2) To assess the impact of training programme on nurses practices regarding prevention of bedsores among immobilized patients. **Materials & methods:** A experimental study, the observation checklist has been used. The tool to use before and immediately after the implementation of the program as well as one month later to evaluate the impact of the training program on Nurses practice. The Application of Braden scale for identification of patients at risk & a demographics questionnaire **Results:** In this study, majority of the patients (60%) belongs to age group of above 50 years. 76.7% of the patients were male, 70% of subjects were residing in urban area, 76.7% of patients were hindu .50% patients were mixed vegetarian. 13.33% patients diagnosis were Subdural Haemorrhage, ICB, CVA, Ulcerative Colitis, Pancreatitis. Assessment of existing bedsores incidence among immobilized patients, 24(80%) of the immobilized patients were at high risk, 20% were at moderate risk and none were at low risk. The minimum bedsores of the immobilized patients was 6 and maximum was 15 and mean bedsores was 9.30 ± 2.08 . It is statistically interpreted that structured teaching module on prevention of bedsores among immobilized patients was no effective. The Impact of training programme on nurse's practices regarding prevention of bedsores. is the tabulated value for $n=30$ i.e 29 degrees of freedom was 2.31. The calculated 't' value are much higher than the tabulated value at 5% level of significance for before and after training bedsores which is statistically acceptable level of significance. Hence it is statistically interpreted that structured teaching module on prevention of bedsores among immobilized patients was effective. Thus the alternative hypothesis H1 is accepted. The result shows structured teaching module on prevention of bedsores among immobilized patients was effective..

INTRODUCTION

Assessment, prevention, and treatment of pressure ulcers have been recognized as nursing care problems since the Nightingale era. Numerous suggestions for interventions ranging from bread to mud have appeared in the literature (Cuzzell & Stotts, 1990), but very few are research-based.

Much of the published nursing research on pressure ulcers addresses risk factors and identification of high risk patients (Taylor, 1988). Yet, the identification of high risk patients is a meaningless activity, if it is not followed with appropriate preventative interventions for these patients. Nurses must intervene to prevent and treat pressure ulcers.

Despite advances in modern technology and the array of preventative equipment available, Bed Sores are not on the decline (Kaltenthaler et al., 2001). From a service planning perspective, Bed Sores are a significant financial burden to any health care system and have an adverse effect on achieving overall goals of care (Clark, 1994). Changing population demographics mean that the increasing age of mortality will result in a greater number of older patients (Haalboom, 2000) and, although Bed Sores do not only afflict this group, increasing age heightens the risk of Bed Sores damage. **Radhwan Hussein et al. 2005⁷**

Several risk assessment scales have been published in the nursing literature, and hundreds of different assessment scales are in use throughout the United States (Vogelpohl, 1991). However, only the Braden Scale and Norton Scale have been tested by research, and only the Braden Scale has published reliability data (Bergstrom, Braden, Laguzza, & Holman, 1987 and AHCPR, 1992). Reynolds (1989) suggested that a reliable risk assessment tool will eliminate wasted time and resources by helping nurses to identify patients at risk and focus preventative interventions on those patients. The Braden Scale is composed of six subscales; mobility, activity, sensory perception, skin moisture, nutritional status, and friction/shear, which reflect critical risk factors identified in the conceptual framework.¹

Materials and methods:

Research Approach: Experimental research approach **Research design:** - experimental research study design. **Setting of the study:** Neuro surgery, Intensive Care Units, ortho ICU highly dependence unit (HDU) in selected hospitals of Wardha district. **Population:** All staff nurses working in the Wardha district. **Sample size:** 30 staff nurses working in various hospitals of wardha district **Sampling**

technique: Non probability purposive sampling technique is employed to select staff nurses in hospitals of wardha district. They were asked for their willingness to participate in the study.

Development of the tools The Braden scale is a highly reliable instrument in the identification of patients at high risk of pressure ulcers (Bergstrom and Braden, 1987) The Braden scale for predicting pressure tools is composed of 6 subscales, sensory perception, activity, mobility, moisture, nutrition, friction/shear. Each subscale included title and each level has a key concept descriptor and a one of two -phrase/sentences description of qualifying attributes. Five of the six subscales are rated from 1 (least impaired) to 4 (most Impaired); the friction/shear subscale is rated from 1 to 3 the potential scores can range from 6 to 23, with scores of 18 - 23 at low risk, 11-17 Moderate risk and <11 as at high risk. then it was distributed to nurses by the researchers immediately after the application of program as well as one and two months later in order to identify how the nurses Applies the scale for the identification of level of patients at risk of bed sores and to calculate the nurses practice score,

The experts from the fields validated the tools.

Method of data collection:

Formal permission was sought from the concerned authority to conduct a final study at selected hospitals in wardha district. Braden scale observation checklist were administered to the subjects to complete the tools. All the participants were gathered in a respective intensive care unit of the selected hospitals at scheduled time. The participants were explained about the study. An informed consent from each participant was taken. Any doubts raised by the participants were cleared before they were recruited for the study. It took about 15 minutes for them to complete the rating.

Results: The data obtained to describe the sample characteristics including age, gender, residence, religion, dietary pattern, diagnosis, duration of illness, and number of weeks stayed in hospital respectively.. In this study, majority of the patients (60%) belongs to age group of above 50 years. 76.7% of the patients were male, 70% of subjects were residing in urban area, 76.7% of patients were hindu .50% patients were mixed vegetarian. 13.33% patients diagnosis were Subdural Haemorrhage, ICB, CVA, Ulcerative Colitis, Pancreatitis The mean knowledge score of the adolescent was 68.33%. maximum 43.33% clients were from MICU, 60% of clients stayed in hospital about 2 weeks and duration of bed sore less than 6 months were 76.7 %

Percentage wise distribution of patients according to their demographic characteristics n=30

Demographic Variables	No. of patients	Percentage(%)
Age(yrs)		
18-30 yrs	7	23.3
31-40 yrs	2	6.7
41-50 yrs	3	10.0
>50 yrs	18	60.0
Gender		
Male	23	76.7
Female	7	23.3
Residence		
Urban	21	70.0
Rural	9	30.0
Religion		
Hindu	23	76.7
Buddhist	4	13.3
Muslim	3	10.0
Christian	0	0.00
Others	0	0.00
Dietary Pattern		
Vegetarian	6	20.0
Non Vegetarian	9	30.0
Mixed	15	50.0
Diagnosis of patients		
Subdural Hemorrhage	4	13.33
ICB	4	13.33
Wedge compression with fracture vertebra	3	10.00
Fracture acetabulum surgical site infection	3	10.00
CVA	4	13.33
Ulcerative Colitis	4	13.33
Pancreatitis	4	13.33
Chronic Alcohol	2	6.67
Pulmonary Edema	2	6.67
Area		
MMW	1	3.33
MSW	1	3.33
MICU	13	43.33
Neuro ICU	9	30.00
Ortho Ward	4	13.33
Ortho ICU	2	6.67
No of weeks stayed in hospital		
1 Week	5	16.7
2 week	18	60.0
3 week	3	10.0
≥4 week	4	13.3
Duration		
<6 months	23	76.7
>6 months	7	23.3

Assessment of existing bed sore incidence among immobilized patients in selected hospitals of wardha district

Level of bed sore	Percentage score	Bed sore	
		Frequency	Percentage
High Risk	<11	24	80.00
Moderate Risk	11-17	6	20.00
Low Risk	18-23	0	0.00
Minimum score		6	
Maximum score		15	
Mean score		9.30 ± 2.08	

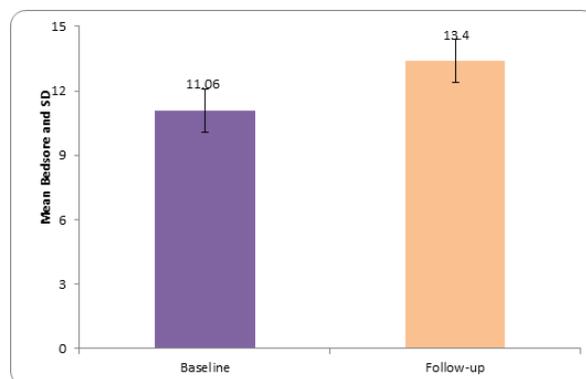
The above table shows that 24(80%) of the immobilized patients were at high risk, 20% were at moderate risk and none were at low risk. The minimum bed sore of the immobilized patients was 6 and maximum was 15 and mean bed sore was 9.30 ± 2.08.

Significance of difference between bed sore in before and after training

n=30

Bed sore	Mean	SD	Mean Difference	t-value	p-value
Baseline	11.06	0.86	2.33±1.91	6.66	0.000 S,p<0.05
Follow-up	13.40	1.40			

The tabulated value for n=30 i.e 29 degrees of freedom was 2.31. The calculated 't' value are much higher than the tabulated value at 5% level of significance for before and after training bed sore which is statistically acceptable level of significance. Hence it is statistically interpreted that structured teaching module on prevention of bed sore among immobilized patients was effective. Thus the alternative hypothesis H₁ is accepted.



Impact of training programme on nurse's practices regarding prevention of bed sore among immobilized patients

Discussion: The risk factors measured by the Braden Scale (sensory perception, moisture, activity, mobility, nutrition, and friction & shear) undoubtedly play a role in pressure ulcer pathogenesis in the critical care setting. However, the previously cited validation studies indicate that the predictive validity of this tool should be improved for use in the critical care setting. Differentiating tissue responses to pressure among normal subjects, critically ill patients developing pressure ulcers, and critically ill patients remaining free of pressure ulcers will help elucidate the nature of pressure ulcer development and may eventually support improvements in pressure ulcer prediction in this population²

The Braden Scale identifies nutrition as an intrinsic risk factor for pressure ulcer development. Prospective studies of pressure ulcer risk have identified several additional intrinsic risk factors. To be included as an intrinsic risk factor in this model, the factor must be (a) an intrinsic characteristic of the patient, (b) have a clinically or physiologically plausible association with pressure ulcer development, and (c) have demonstrated a statistically significant

association ($p < .05$) with pressure ulcer development in one or more prospective cohort studies (or two or more retrospective studies) of pressure ulcer risk in a critically ill population. These criteria are less stringent than those used by the AHCPR Panel on the Prediction and Prevention of Pressure Ulcers (Allman, Gosnell, Bergstrom, & Cuddigan, 1992), permitting a broader exploration of population-specific variables in the critical care setting. According to Kosiak (1961), pressure ulcers develop when external pressure of sufficient duration and intensity is applied over a bony prominence, decreasing transmural pressure, compressing capillaries, and obliterating blood flow. The following discussion covers a continuum from (a) normal anatomy and physiology, through (b) normal adaptive mechanisms in response to pressure, to (c) the failure of adaptive mechanisms and tissue damage (i.e., pressure ulcer development).⁴

Over 100 risk factors for pressure ulcer development are reported in the literature (Lyder, 2003). Identifying the most significant risk factors and being able to predict which individuals are most at risk during ancillary diagnostic and treatment procedures are key elements of prevention in this patient population. The amended conceptual scheme as outlined by Defloor includes a series of risk factors known to predispose patients to pressure injury independent of the intensity and duration of pressure and shearing forces. The majority of these factors (e.g., mobility, sensory perception, moisture, age, nutrition, medication, diseases) form the risk scoring categories already woven into the Braden Scale for Predicting Pressure Sore Risk instrument, a validated tool currently in use by nurses on many hospital inpatient units.⁵ However, the Braden Scale was never purported to assess risks during the operative period (Bergstrom, 2005) and has in fact been shown to be a poor predictor of pressure injury for short-term exposures to high interface pressures like those experienced by patients on operating tables (Connor, Sledge, Bryant-Wiersma, Stamm, & Potter, 2010; Grous, Reilly, & Gift, 1997; Karadag & Gümüşkay, 2006; Nixon, Cranny, & Bond, 2007). With the similarity between the extrinsic risks in the operating room and those in ancillary services units, the conceptual framework for an effective risk assessment instrument for the environments of ancillary services must be based on the unique risks engendered therein.⁶

According to Braden's Conceptual Schema, as more of the precipitating variables are controlled through nursing interventions, the potential for pressure ulcer development will decrease. Therefore, multiple nursing interventions are preferable to a singular approach such as turning.

In the present study preventative nursing interventions were identified, and the relationships between pressure ulcer risk, multiple nursing interventions, and pressure ulcer presence were evaluated. Additionally, Bloch's model supported the relationships between the processes of risk assessment and nursing interventions and the outcome of pressure ulcer presence.⁹

CONCLUSION:

Pressure ulcer prevention is a complex challenge. It requires an understanding of the etiology of pressure ulcers, identification of risk factors and high risk patients, and judicious use of preventative interventions. A critical component of prevention is education related to these concepts for health care providers, patients, and families. From the study findings; it is concluded that the Impact of training programme on nurse's practices regarding prevention of bedsore is effective. The result shows structured teaching module on prevention of bedsore among immobilized patients was effective. Implementation of a risk assessment scale might help nurses to select more appropriate and individualized interventions. Braden scale is a highly reliable instrument in the identification of patients at high risk of pressure ulcers.

RECOMMENDATIONS

In light of these findings, it is suggested that consideration should be given to the inclusion of more structured teaching module on prevention of bedsore among immobilized patients.

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