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A STUDY TO ASSESS THE RISK OF DEVELOPING BED SORE AMONG PATIENTS ADMITTED TO INTENSIVE CARE UNIT OF A TERTIARY CARE HOSPITAL

Nursing

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ABSTRACT

Background: Skin is the layer of usually soft, flexible outer tissue covering the body of a vertebrate animal, with three main functions: protection, regulation and sensation. Bed sore is described as localized injury to the skin and or underlying tissue. It remains a common health problem that leads to pain, longer hospital stay and slow recovery from health problem. Previous studies have identified multiple risk factors for bed sores. It has been described as one of the most costly and physically debilitating complication. In India the prevalence rate of bed sore was 4.94% and bed sore remain most neglected disease in India.

Objectives: To assess the risk of developing bed sore among patient admitted to intensive care unit.

Methods: A descriptive cross sectional study was undertaken to assess the risk of developing bed sore in patients admitted to ICU. Total 53 samples patients admitted to intensive care unit between the age group of 18 – 80 years were selected through non probability consecutive sampling technique from tertiary care hospital in Lucknow. A nonexperimental quantitative survey approach in which standardized tool (Braden scale) was used to assess the risk of developing bed sore. Descriptive and inferential statistics were used for analysis of the tabulated data.

Result: Out of 53 respondents maximum subjects were between age 39-48yrs i. e. 12 (22.6%) further as per gender majority 38 (71.7%) were male and 15(28.5%) were female 34(64.1%) . 16(30.1%) had normal BMI 25(29.9%) overweight and 3(5.6%) were obese. 35(66%) had various co-morbidities 18(34%) had associated comorbidities.17 (32%) patients had hypertension, 5(9.4%) had diabetes, 8(15%) had multiple co morbidities. 7 (13%) patients had moderate risk, 5 (9%) had high risk and 4 (8%) had severe risk of developing bed sore.

11 patients in age group 59-68yrs 3(27.2%) had moderate risk, 2 (18.1 %) had mild risk and 1(9.9%) patient had high and severe risk of developing. 3(24.5%) patients in obese category out of which 1(33.3%) had no risk whereas rest 1(33.3%) patient had high risk and 1 (33.3%) patient had severe risk of developing bedsore. Out of 35 patients 6(17.1%) had mild risk, 6(17.1%) had moderate risk, 3(8.5%) had high risk and 3(8.5%) had severe risk of developing bed sore. However there was no significant association observed between the demographic variables and bedsore development.

Conclusion: The risk of developing bed sore among patients can be reduced by following protocols and continuous risk assessment with standard formats at admission as well as throughout hospital stay. It is important to continuously educate and motivate health care workers to follow the guidelines for better nursing care outcomes.

KEYWORDS

Bedsore , risk assessment, intensive care unit

INTRODUCTION

Bed sore are described as localized injury to the skin and or underlying tissues, usually over a bony prominence as a result of pressure or pressure in combination with shear. Pressure ulcers have been recognized as a disease entity since ages.

Pressure sores have been found in Egyptian mummies, some of which are more than 5,000 years old. Previous studies have reported that the prevalence of bed sore in hospitalized patient ranges from 1.8 % to as high as 47.6% in different categories of patient.

In India the prevalence rate of bed sore was 4.94% and bed sore remains one of the most neglected diseases in India. Incidence rates of bed sore as low as 0.4% to as high as 38% have been reported in the inpatient department A study conducted in a tertiary hospital Chandigarh about the incidence of bed sore shown that prevalence of bed sore was maximum in intensive care units (9.4%) followed by orthopedic units 8%, emergency units 7.7% and neurosurgical units 6%.main age was 14 to 90 years.

Bed sore causes pain and misery and are expensive to treat. Occurrence of bed sore in hospitalized patient has clinical, emotional & psychological impact. They also contribute toward to morbidity and mortality rate. It increases length of hospital stay and vice-versa. It may also add to the total cost of patient management and be an important economic burden.

The Healthcare Cost and Utilization Project (HCUP) report found from 1993 to 2003 a 63 percent increase in pressure ulcers, but the total number of hospitalizations during this time period increased by only 11 percent. Pressure ulcers are costly, with an average charge per stay of $37,800 in U.S.A

MATERIALS AND METHODS:

A descriptive cross sectional non experimental design was used to assess the risk of developing bedsore among patients admitted to intensive care unit of a tertiary care hospital.

The present study was conducted over a period of 40 days at Intensive Care Unit of selected tertiary care hospital, population comprise of patients admitted to intensive care unit of a tertiary care hospital, samples were the patients above 18 yrs of age admitted in intensive care unit, in a tertiary care hospital in Lucknow and consecutive (nonprobability) sampling technique was used to select the patients.

Tool used for this study is the standardized tool Braden Scale

SAMPLE AND SAMPLING TECHNIQUE

Target population was all the patients admitted to intensive care unit. In this study the sample was the patients admitted in intensive care unit in tertiary care hospital in Lucknow who fulfilled the inclusion criteria.
Tool used for this study is the standardized tool used for risk assessment of bed sore

e.g.- The Braden Scale.
Data collection done by following procedure explained the procedure to the patients or the guardian, consent taken, used observation method of data collection, data gathered and noted on questionnaire.

The technique was consecutive (nonprobability) sampling used to select the patients.

In the present Quantitative research study the data was planned to be analyzed using both descriptive and analytical statistical methods.

DATAANALYSIS

The data collected using the research tool: standardized tool **(Braden Scale)** was tabulated in excel sheet and analyzed by using Chi Square analysis.

Descriptive statistics and inferential statistics were used to interpret the data. Association was taken out between risk factors responsible for developing bed sore by Chi-square analysis In all the tests, a p value of are greater than 0.05 at 95% Confidence Level with df as 4 was taken as significant.

RESULT

In present study undertook 53 samples. They were classified as per their age group into 7 groups were studied nonexperimentally and

Table.1 Distribution of cases (n=53)

Age	Frequency (n)	Percentage (%)
18-28	9	16.9
29-38	3	5.6
39-48	12	22.6
49-58	9	16.9
59-68	11	20.7
69-80	8	15.0
Above 80	1	1.8
Gender		
Male	38	**71.7**
Female	15	**28.3**
BMI		
18-24.9	34	64.1
25-29.9	16	30.1
>=30	3	5.6
Comorbidities		
Yes	35	66
No	18	34
Bed sore risk		
No Risk	29	55%
Mild Risk	8	15%
Moderate	7	13%
High Risk	5	9%
Severe	4	8%

cross sectionally in tertiary care hospital for period of 40 days (Table 1 and 2)

The data presented in Table 1 shows that Calculated Value (X^2=3.2784) is lesser than the Tabulated Value (9.49) and also the p-value (0.5124) is greater than 0.05 at 95% Confidence Level with df as 4. Hence there is no statistically significant association between age group and risk of developing bed sore.

The data presented in Table 2 represents that there is a **Non-Significant** association between BMI and Risk of developing bedsore as the Calculated Value (X^2 =6.1293) is lesser than the Tabulated Value (15.51) and also the p-value (0.6327) is greater than 0.05 at 95% Confidence Level with df as 6. Hence there is no statistically significant association between BMI and risk of developing bed sore.

The data presented shows that Calculated Value (X^2=2.4308) is lesser than the Tabulated Value (9.49) and also the p-value (0.6571) is greater than 0.05 at 95% Confidence Level with df as 4. Hence there is no statistically significant association between presence of co-morbidities and risk of developing bed sore

It also represents that there is a **Non-Significant** association between Specific Co-morbidities and Bed Sore Risk as the Calculated Value (X^2 =24.851) is lesser than the Tabulated Value (36.42) and also the p-value (0.4139) is greater than 0.05 at 95% Confidence Level with df as 24.

Table12: Association between variables and bed sore

Age Group	Bed Sore Risk						df	Tab Value & X^2	p-value	Remarks
	N	M	Mo	H	S	Total				
< 50 yrs	16	5	2	2	1	**26**	**4**	**9.49**	**0.512**	**Non-**
>= 50 yrs	13	3	5	3	3	**27**		**3.2784**	**4**	**Significant**
Total	**29**	**8**	**7**	**5**	**4**	**53**				
BMI 1 8-24.9	19	5	5	3	2	**34**	**8**	**15.51 6.129 3**	**0.63 27**	**Non-Significa n**
25-29.9	9	3	2	1	1	**16**				
>=30	1	-	-	1	1	**3**				
Total	**29**	**8**	**7**	**5**	**4**	**53**				
Co-morbidities Yes	**17**	**6**	**6**	**3**	**3**	**35**	**4**	**9.49 2.430 8**	**0.65 71**	**Non-Significa nt**
No	**12**	**2**	**1**	**2**	**1**	**18**				
Total	**39**	**8**	**7**	**5**	**4**	**53**				
Specific Co-morbidities Hypertensio n	**5**	**3**	**5**	**2**	**2**	**17**	**24**	**36.42 24.85 1**	**0.41 39**	**Non-Significa nt**
Neurologica l	**1**	**1**	**-**	**-**	**-**	**2**				
Diabetes	**4**	**1**	**-**	**-**	**-**	**5**				
Obesity	**-**	**-**	**-**	**1**	**-**	**1**				
Multiple	**5**	**1**	**1**	**-**	**1**	**8**				
Others	**3**	**-**	**-**	**-**	**-**	**3**				
None	**11**	**2**	**1**	**2**	**1**	**17**				
Total	**29**	**8**	**7**	**5**	**4**	**53**				

DISCUSSION

Majority of patients were in age group 59-68 yrs. Among 11 patients in age group 59-68yrs 3(27.2%) had moderate risk, 2 (18.1 %) had mild risk and 1(9.9%) patient had high and severe risk of developing bedsore. Whereas in patients age group of 69-80yrs

1(12.5%) patient each had moderate risk, high risk and severe risk of developing bedsore. In age group above 80 yrs only 1(100%) patient was present and was at severe risk of developing bedsore. As per Braden Scale analysis just 8% patients were found to be in severe to moderate risk and 38% of patients were in mild or no risk under 18-48yrs age group.

Whereas 23% of patients above 49yrs age group were found to be in severe to moderate risk and 32% of patients were in mild or no risk.

In this study Out of 53 patients 38(71.7%) were male and 15(28.5%) were female. And based on Braden Scale Analysis just 4% of female patients were found to be in severe to moderate risk and 25% of female patients were in mild or no risk whereas 37% male patients were found to be in severe to moderate risk and 45% of male patients were in mild or no risk.

In this study , found that out of 53 patients majority of patients 34(64%) were in BMI18-24.9 (normal weight) by WHO classification of BMI, out of which 19(55.8%) had no risk whereas 5(14.7%) patients had mild and moderate risk each, 3(8.8%) had severe risk and 2(5.8%) had severe risk of developing bed sores. 16(30.1%) patients were in BMI 25- 29.9 (overweight) out of which 9(56.2%) had no risk of developing bedsore but 3(18.7%) had mild risk , 2(12.5%) had moderate risk , 1(6.25%) had high and severe risk each. 3(24.5%) patients were in BMI >=30(obese) out of which 1(33.3%) had no risk whereas rest 1(33.3%) patient had high risk and1(33.3%) patient had severe risk of developing bedsore. the incidence of pressure ulcers in the underweight, normal weight, obese, and extremely obese groups was 8.6%, 5.5%, 2.8%, and 9.9%, respectively. When both the score on the Braden scale and the body mass index were predictive of pressure ulcers, extremely obese patients were about 2 times more likely to experience an ulcer than were normal weight patients

The prevalence of pressure ulcers particularly in the frail older adult population continues to be high and very costly especially in those suffering from chronic diseases and has brought a higher awareness to comprehensive, preventive and therapeutic measures for treatment of pressure ulcers. Internal risk factors highlighted by comorbidities play a crucial role in the pathogenesis of pressure ulcers Direct bed sore causal factors associated with comorbidities include immobility, skin/pressure ulcer status and poor perfusion. Indirect factors are moisture, sensory perception, diabetes, low albumin and poor

nutrition. Other potential factors include old age, medication, pitting edema and other factors relating to general health status including infection, acute illness, raised body temperature and chronic wounds. As per our study out of 53 patients about one third patients had no co-morbidities. Whereas majority 17(32%) were suffering from hypertension out of which 3(17.6%) had mild risk, 5(29.4%) had moderate risk, 2(11.7%) had high risk and 2(11.7%) had severe risk of developing bedsore. among patients with neurological deficit 1(50%) had mild risk of developing bedsore. Out of 8(15%) patients who were suffering with multiple comorbidities 1(12.5%) patient each had mild, moderate and severe risk of developing bedsore.

CONCLUSION:

As per Braden Scale analysis just 8% patients were found to be in severe to moderate risk and 38% of patients were in mild or no risk under 18-48yrs age group.

Whereas 23% of patients above 49yrs age group were found to be in severe to moderate risk and 32% of patients were in mild or no risk

This clearly demonstrates that higher age group patients are at greater risk, it is proven statistically.

Implications of the study regarding nursing were discussed and recommendations for future research were provided. The findings of the study contributes to the deep understanding of the assessment of risk of development of bedsore in ICU patients. It also provides the suggestions for the future researches. This study has helped gaining in confidence in conventional therapy and the positive role of alternate and complementary therapies, hence provoking the thinking mind and giving food for thought about avoiding the hesitancy in trying non-invasive methods prior to putting an individual at risk of being given an invasive treatment due to high pressure of technical world of medicine. The current scenario of the country is very crucial due to COVID19 pandemic which was one of the biggest hindrances in data collection and other key activities during the entire research tenure.

Data collected was from Army Command Hospital, which only caters to defense personnel and their family members, due to which the sample size was very less and the cases were scattered.

Because of present scenario of Covid 19 pandemic the sample size was limited to draw generalization.

The data collected was only from the tertiary care hospital. By assessing the risk at the earlies helps the nursing staff and the patients for speedy recovery and lesser bed occupancy and cost effective health care.

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