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Original Research Article

Bed Sores and Associated Factors among Patients Admitted at Surgical Ward

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Abstract:

Background: Bed sore has long been recognized as major cause of morbidity, mortality and health care burden globally and worst in developing countries like India. Bed sore is a localized injury to skin and underlying tissues due to pressure or friction and its incidence is affected by multiple factors.

Objective: This study was aimed to assess magnitude of bed sore and associated factors among patients admitted to surgical ward.

Method: This cross-sectional study was conducted among 100 hospital admitted patients in a tertiary care hospital. After taking the informed consent from all patients, data was collected through a self-structured proforma. Data analysis was done via SPSS version 25. Chi square test was utilized to assess the association between bed sores and potential risk factors.

Result: 12 patients or 12% among 100 admitted patients developed bedsore. Bed sores incidence was significantly associated with age group (p=0.002), socioeconomic status (p=0.002), hospital stay length (p=0.002), limitation in movement (p=0.0001), diabetes mellitus (p=0.03), chronic kidney disease (p=0.04), obesity (p=0.001), history of hypertension (p=0.002), history of stroke (p=0.02), whereas, bed sores were not associated with gender significantly (p=0.40).

Conclusion: The incidence of bed sores was significantly high among study population. Predisposing factors to the bed sores were advanced age, lower socioeconomic status, and longer hospital stay, limitation in movement, diabetes mellitus, obesity, history of hypertension, and history of stroke.

Recommendations: This study recommends that frequent positioning of the patient and health education for patients from rural areas and special and frequent care for those unable to care for themselves were needed to minimize occurrence of bed sore. Obese patients should reduce weight. All patients, especially diabetic patients, should take care of skin.

Keywords: Bed Sores, Risk Factors, Admitted patients.

Introduction

Bed sore is severe condition of skin due to localized injury on the skin and/or underlying tissue usually over a bony prominence area.

Bed sore is one of the most common complications for bed-ridden patients hospitalized in acute and chronic care services and imposes a major burden on patients, their relatives and caregivers. Loss of sensory perception and immobility are the main risk factors for decubitus ulcers because patients may not be aware of the discomfort and do not change their position to relieve the pressure [1-6].

In literature, different researches that were conducted in various parts of the world, have shown that Bed Sore is linked with various associated factors which included age, gender, socioeconomic status, awareness, hospital stay length, immobility, and chronic diseases (Diabetes mellitus, Chronic kidney disease, Obesity, Hypertension, Stroke, and others). [7,8,9,10,11,12]

Out of these factors some are modifiable, while others are non-modifiable, therefore, BS could be prevented or at least could be reduced in prevalence by working on controllable factors.

After recognizing the factors that increase the BS incidence, BS could be prevented or its incidence could be brought down, by the implementation of appropriate measures for the control of these factors. The reduction in Bed Sore incidence could consequently bring improvement in the quality of lives of affected people and reduction in the burden over the restricted resources of the hospitals of developing countries.

Aim of the Study: To assess risk factors for pressure ulcers among chronic ill patients.

Objectives

1. To determine magnitude of bed sore among patients admitted at surgical ward of institute.
2. To identify factors associated with bed sore among patients admitted at surgical ward of institute.

Material and Methods

This comparative cross-sectional study was carried out among the chronic patients who were admitted in surgical Ward of a Tertiary care hospital, India in the time duration of 6 months from January 2024 to June 2024. 100 patients were included in the study according to the inclusion and exclusion criteria. Simple convenient type of sampling was done to enrol the patients.

Inclusion and Exclusion Criteria

Only those patients whose stay in the hospital was more than 3 days and recurrent hospital visit (more than two hospital visits in in six month), willing to participate, and had any chronic disease (diabetes mellitus, obesity, hypertension, stroke, chronic kidney disease (CKD)) were selected.

Those who stays in the hospital was less than 3 days, not willing to participate, had no recurrent hospital visit, and had no chronic disease were excluded from the study. Self-structured Proforma was used for the collection of data. After explaining the research, informed consent was taken from each participant. The self-structured Proforma had two parts. In first part details relevant to demography like age (Adults=below 40years or elder= above 40years), gender (male or female), and socio economic status (lower=monthly income less than 30,000 or middle= monthly income more than 30,000) were collected. In second part of Performa information regarding the associated factors of bed sores which included hospital stay (short=less than 10 days but more than 3days or long=more than 10 days) limitation in motion (yes or no), diabetes mellitus (yes or no), chronic kidney disease (yes or no), obesity (yes or no), history of hypertension (yes or no) and history of stroke (yes or no).Patients were divided into two groups. One group of patients with bedsores and other group of patients without bedsores. Bed sores diagnosis was made by the presence of localized injury to skin and other underlying tissues over the prominence of body like buttocks, heels of the feet, shoulder blades, back of knee, back of elbow, and back. After the collection of data, SPSS version 25 was used to analyze data. we applied Chi Square test to assess correlation between bed sores and associated risk factors. The p-value less than 0.05 was treated as statistically significant.

Results

Out of 100 patients who were enrolled in the study 64(64%) were males, whereas, 36(36%) were females. The mean of age of study population was 46.19 years with SD (Standard Deviation) of ±9.09years. From the total of 100 patients, 12(12%) had bed sores, while, 88(88%) had no bed sores.

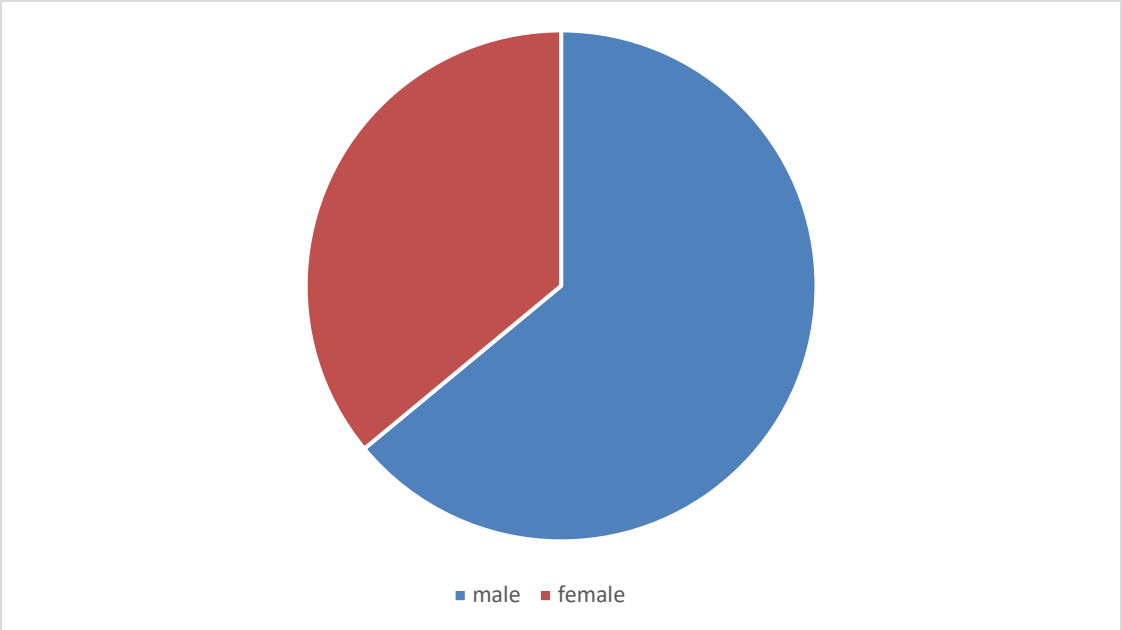

Figure 1: indicates the patient distribution on the basis of their gender

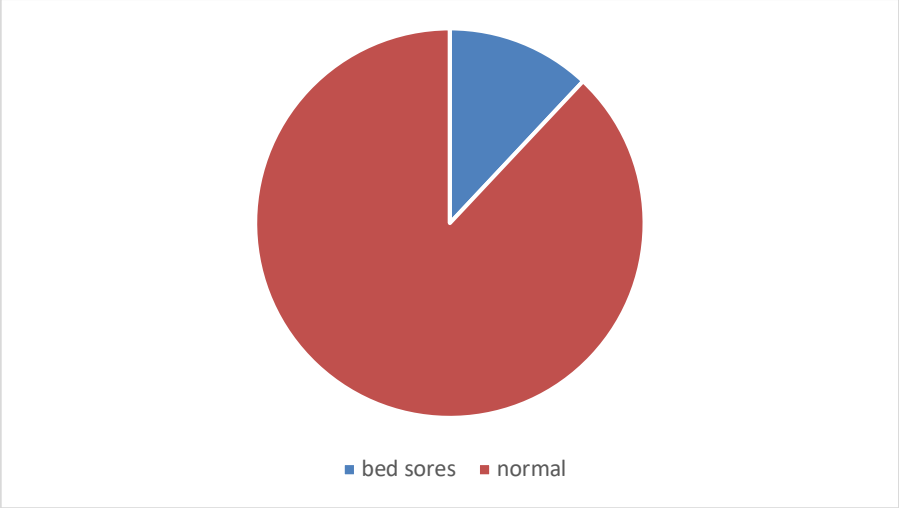

Figure 2: shows the incidence of bed sores among study population

Table 1 shows that bed sores are significantly associated with advanced age group, socioeconomic status, hospital stay length, limitation in movement, diabetes mellitus, chronic kidney disease, obesity, history of hypertension, history of stroke whereas, bed sores were not associated with gender significantly. It shows that bed sores incidence was increased among the patients who had advanced age, lower socioeconomic status, lower awareness about bed sores, longer hospital stay, limitation in movement, diabetes mellitus, obesity, history of hypertension in comparison to patients who had young age, higher educational status, higher socioeconomic status, higher awareness about bed sores, shorter hospital stay, no limitation in movement, no diabetes mellitus, no obesity, no history of hypertension. In case of chronic kidney disease, incidence of bedsores was higher among patients who had no chronic kidney disease, while, in case of stroke incidence was same in both patients who had stroke history and who had no stroke history. Moreover, the incidence of bed sores was independent of gender of patients. Although male patients had higher BS incidence than female patients.

Table 1: Association of risk factors with bed sores

Cross Tabulation and Chi-square Analysis				
Parameter Total(n)=100		**Chronic patient groups**		
		Group with Bed sores	**Group without bed sores**	**Chi-Square analysis**
		12 (12%)	88 (88%)	p-value
Age Group	Adult n=74(74.00%)	9 (75%)	67 (76.1%)	0.002
	Elder n=26 (26.00%)	3 (25%)	21 (23.8%)	
Gender	Male n= 64(64%)	7 (58.3%)	59 (67.08%)	0.40
	Female n=36 (36%)	5 (41.6%)	29(32.92%)	
Socioeconomic Status	Lower Class n= 72 (72%)	10 (83.3%)	68(77.1%)	0.002
	Middle Class n=28(28%)	2 (16.6%)	20 (22.7%)	
Hospital Stay Length	Longer n=32(31.48%)	9 (75%)	21(23.8%)	0.002
	Shorter n=68 (68.52%)	3 (25%)	67 (76.1%)	
Limitation in Movement	Yes n=38 (38%)	12(100%)	26 (29.79%)	0.0001
	No n=62(62%)	0 (0.00%)	62 (70.4%)	
Diabetes Mellitus	Yes n=15 (15%)	9 (75%)	12 (13.83%)	
	No n=85 (85%)	3(25%)	76 (86.17%)	0.03
Chronic Kidney Disease	Yes n=12(12%)	4 (33.3%)	6 (6.8%)	0.04
	No n=88(88%)	8 (66.6%)	82 (93.1%)	
Obesity	Yes n=22(22%)	11 (91.6%)	13 (14.7%)	0.001
	No n=78 (78%)	1 (8.3%)	75 (85.2%)	
Hx of Hypertension	Yes n=38 (38%)	10 (83.3%)	36 (40.9%)	0.002
	No n=62(62%)	2 (16.6%)	52 (59.0%)	
Hx of Stroke	Yes n= 15 (15%)	7 (58.30%)	5 (5.6%)	0.04
	No n=85 (85%)	5(41.6%)	83(94.3%)	

Hx= History of

Discussion

Bed sore is one of the major health problems in health care systems especially among the hospital admitted chronic patients. Bed sore is localized injury to an area of skin and related underlying tissues and it is mostly present over bony prominences of the body. The most common sites of the bed sores, are sacral, calcaneal, ears, and trochanteric. [10,11] Once it develops in the patients, it could lead to pain, infection, sepsis, disability, and even in few severe cases, it could lead to death even. [6] Likewise, it adds burden over the restricted resources of hospitals of developing counties. This study has shown that incidence of BS was 12% among the study population.

Almost similar rate of BS prevalence (12.70%) has been noted in Brazil and Pakistan. [12] However, in Palestine, lower prevalence was reported (7.30%). [8] The higher incidence in this study population than population of Palestine might be due to the lower education about the bed sores among our study population. It was found many factors associated with BS incidence and these included, age group, educational status, socioeconomic status, awareness about bed sores, hospital stay length, limitation in movement, diabetes mellitus, chronic kidney disease, obesity, history of hypertension, history of stroke and these factors influence the incidence of the bed sores among hospital admitted patients significantly.

About the impact of gender on incidence of BS, we noted that, BS incidence was not affected significantly by gender. Bed sores incidence was higher among the patients who had advanced age, lower educational status, lower socioeconomic status, lower awareness about bed sores, longer hospital stay, limitation in movement, diabetes mellitus, obesity, history of hypertension in contrast to patients who had young age, higher educational status, higher socioeconomic status, higher awareness about bed sores, shorter hospital stay, no limitation in movement, no diabetes mellitus, no obesity, no history of hypertension.

Regarding chronic kidney disease, bed sores is not significantly associated with chronic kidney disease. Likewise, chronic patients with and without stroke history had same rate of bed sores. Many researches were found to have results similar to the results of current study. Identical role of demographic factors like advanced age, lower educational status, lower socioeconomic status and lower awareness about bed sore, had noted in different studies that were conducted in different parts of the world. [7,8,9,10,11,12], we found no significance between difference two genders in BS incidence, however, in a study that was conducted at Iran, reported conflicting results and in this research, difference of BS incidence was significant. [13]Similarly, the impact of other included potential factors like hospital stay length, limitation in movement, diabetes mellitus, obesity, history of hypertension, history of stroke, and history of heart disease, on bed sore incidence, was same in different studies that were conducted in various locations of the world, and these researches supported our study results. [7,8,9,10,12,13]

Among the patients of chronic kidney disease, we found that BS incidence was lower than chronic patients who had no chronic kidney disease. This finding might be due to better awareness about BS, no limitation in movement or due to presence of other protective factors among factors included patients of chronic kidney disease. A multidisciplinary group should establish an arrangement for the avoidance of controllable variables that lead to Bed sores. Since development of BS among patients not just bring monetary weight over chronic patients and but also bring physical disability and mental stress among chronic patients, which further more aggravate the circumstance. Subsequently, by applying reasonable interventions for the counteraction of preventable elements, we could lessen BS frequency and issues related with it among chronic hospitalized patients.

Conclusion

This study shows significantly high incidence of bed sores among the study population. It shows that bed sores incidence was higher among the patients who had advanced age, lower educational status, lower socioeconomic status, lower awareness about bed sores, a longer hospital stay, limitation in movement, diabetes mellitus, obesity, history of hypertension, and history of heart disease, and these were associated with bed sores significantly.

Regarding the chronic kidney disease, incidence of bedsores was higher among patients who had no chronic kidney disease, whereas, among patients who had stroke history and who had no stroke history, the incidence of bed sores was same. Furthermore, the incidence of bed sores was not dependent of gender of patients.

Now, by modifying the modifiable factors we could reduce or prevent the bed sores among hospital admitted patient. Consequently, the reduction in bed sores incidence would lead to reduction over the economic and social lives of patients.

Recommendations

Therefore, frequent positioning of the patient and health education for patients from rural areas and special and frequent care for those unable to care for themselves were needed to minimize occurrence of bed sore. We should aware about the risk factors of BS. Obese patients should reduce

their weight. All patients should take care of their skin, whereas, diabetic patients should take special care, as they are predisposed to skin infection more often.

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