



Consequences of pressure ulcer among bedridden patient in ATBUTH Bauchi, Bauchi State

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Abstract

Pressure ulcers (also known as bedsores or pressure sores) are a common, persistent, and debilitating complication for bedridden patients, leading to significant morbidity, mortality, and healthcare costs. This study aims to comprehensively investigate the consequences of pressure ulcers among bedridden patients, identify the key risk factors associated with their development, and analyze the demographic factors that increase their susceptibility. Methodologically, the study examines the physical, psychological, and economic impacts of pressure ulcers. Physically, pressure ulcers cause severe tissue damage, infections, and skin deterioration due to prolonged pressure. Psychologically, patients often experience pain, discomfort, anxiety, depression, and a significant reduction in quality of life. Economically, managing pressure ulcers places a substantial burden on the healthcare system through significant treatment costs, including specialized wound care products and frequent medical consultations, underscoring the demanding care required from caregivers and the healthcare system. Our findings indicate that pressure ulcers significantly impair patients' physical and psychological well-being, healthcare utilization, and quality of life. We identified key risk factors, including immobility, sensory impairment, poor nutrition, and inadequate care practices. Furthermore, our demographic analysis revealed significant associations, with older adult females and those with comorbid diseases being more susceptible. This study points out the need for proactive prevention strategies, timely detection, and effective management to mitigate the consequences of pressure ulcers and improve overall patient outcomes.

Keywords: Pressure ulcers, bedsores, bedridden patients, consequences, risk factors, elderly, quality of life, healthcare system.

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Introduction

Pressure ulcers are a common problem among bedridden patients, and they can have serious consequences for both the patient and the healthcare system. Pressure ulcers can cause pain, disability, and even death. They also lead to increased healthcare costs, due to the need for wound care and the increased risk of infection. The goal of this study is to assess the prevalence of pressure ulcers among bedridden patients, and to explore the impact of these wounds on patient health and healthcare costs. Pressure ulcers are a common and painful health condition, particularly among people who are elderly or physically impaired. In addition to patient suffering, pressure ulcers can impede patients' return to full functioning (Zhang et al., 2024). A number of tools have been developed for the formal assessment of risk for pressure ulcers. The three most widely used scales are the Braden Scale, the Norton Scale, and the Water low Scale. The Braden Scale, which is commonly used in the United States, consists of six items: sensory perception, moisture, activity, mobility, nutrition, and friction and shearing. The Norton Scale, developed in the United Kingdom, consists of five items: physical condition, mental condition, activity, mobility, and incontinence. The Water low Scale consists of nine items: build/weight for height, visual assessment of the skin in the area at risk, sex and age, continence, mobility, Malnutrition Screening Tool score, and special risk factors including tissue malnutrition, neurological deficit, and major surgery or trauma. Of the numerous risk factors included in at least one of these three tools, only some factors overlap, specifically activity, mobility, Nutrition/malnutrition, incontinence, and cognition. Also, each scale assigns different weights to factors, adding to the heterogeneity of the scales. Although a number of guidelines recommend the use of standardized formal risk-assessment tools, the evidence supporting their use is not clear. A recent update of a Cochrane Collaboration review found only one randomized clinical trial that evaluated the effect of a risk assessment tool on incidence of pressure ulcers, and that trial found no effect of the Braden Scale on ulcer incidence.

A systematic review published in 2006 identified three studies from the 1990s that assessed the effect of the Norton Scale on ulcer incidence and also found no effect. This same review reported sensitivities ranging from 46.8 to 82.4 and specificities ranging from 27.4 to 67.5 for the Braden, Norton, and Water low scales. Generally, usual care will involve the non-formalized use of a risk assessment instrument and will likely vary based on practice patterns and standards (Wikoff et al., 2020). In addition to avoiding the pain and adverse health outcomes associated with pressure ulcers, strategies to prevent pressure ulcers may cost substantially less than treatment. By one estimate, treatment costs may be as much as 2.5 times the cost of prevention. A number of guidelines recommend various preventive strategies, which generally fall into the categories of: repositioning/support surfaces (e.g., low air loss mattresses; alternating pressure mattresses; sheepskin, foam, and other types of overlay skin care (including moisturizers and management of incontinence); and nutrition (i.e., nutritional supplements). The underlying risks for pressure ulcers vary according to patient characteristics (e.g., physical impairment; body weight; nutritional status; incontinence; or specific medical comorbidities, such as diabetes or peripheral vascular disease); and setting (e.g., acute care hospital, operating room, or wheelchair user in the community). The effectiveness of particular preventive strategies may vary according to these patient characteristics and/or settings. For example, a nutritional supplement may be of limited use in a patient who is not malnourished, and concern about the appropriate fit of a wheelchair for an otherwise healthy patient

with spinal cord injury would not apply to patients who do not use a wheelchair (Hong et al., 2024). A systematic review published in 2006 found that 51 of 59 included randomized controlled trials assessed preventive interventions targeting impaired mobility, with the remaining trials assessing interventions for impaired nutrition or skin health (Henggeler et al., 2018); (Tien et al., 2024). The authors of that review concluded that using support surfaces, optimizing nutritional status, and moisturizing sacral skin are promising interventions.

However, they also noted that the overall quality of the included studies was “suboptimal, that the heterogeneity of the interventions and studied populations precluded the calculation of combined effect sizes (Pezzoli et al., 2024); (Kolaski et al., 2023), and that it was not clear which (if any) approach to prevention is more effective than any other approach. We conducted interviews and conference calls with Key Informants and a Technical Expert Panel (TEP) representing a variety of experts and stakeholder groups. Most of these informants confirmed that, aside from targeting the general domain for which an intervention is intended (e.g., nutritional supplements for patients who are malnourished), there is substantial uncertainty regarding which interventions are best for patients. (Mancin et al., 2024); (Kaegi-Braun et al., 2022). In particular settings (Iblasi et al., 2022), Pressure ulcers are a common problem among bedridden patients, and they can have serious consequences for both the patient and the healthcare system. When pressure is applied to the skin, capillaries are compressed, decreasing the amount of blood that can flow through them. As the pressure is maintained, the tissue below the skin is deprived of oxygen and nutrients. At the same time, metabolic wastes accumulate in the tissue. With ongoing pressure, capillaries are destroyed and cells die.” (Alito et al., 2023).

Materials and Methods

Study Design

The research is non-experimental research is used to assess the impact of pressure ulcer on bedridden patient at ATBUTH Bauchi. Descriptive research design is use in which the data is obtained in a systematic manner, the characteristic of certain variables in relation to the population. It involves collection of data for the purpose of answering research questions under study.

Research Setting

ATBUTH is an acronym for Abubakar Tafawa Balewa University Teaching Hospital, located in Bauchi, Nigeria. This hospital is a tertiary referral center that provides comprehensive healthcare services to the people of Bauchi State and beyond. It is the only teaching hospital in the state and is affiliated with the Abubakar Tafawa Balewa University. The hospital offers a wide range of services, including primary, secondary, and tertiary care. It has a bed capacity of 500 and is well-equipped with modern facilities and a highly qualified team of healthcare professionals.

Target population

The target population for the study is all bedridden patients at medical ward ATBUTH Bauchi for the year 2023.

Instrument for Data Collection

The researcher use passed records as the instrument for data collection. The records is obtained from medical records and statistic department of ATBUTH Bauchi. The record involve details of all patient diagnosed with pressure ulcer in ATBUTH

Method Data Collection

A letter of permission from college of nursing sciences ATBUTH Bauchi to conduct the

study in the hospital is obtained and presented to the management of the hospital and the head of statistics unit with the view to obtain permission to assess data from the patient record which is granted to the researcher.

Method of data Analysis

The data collected from the passed records is presented and analyzed by using tables, bar chart, pie chart and simple percentage.

Result

This study reviewed the files of 267 patients who were followed and treated for wound in ATBUTH for the year 2023 and included the files of 267 patients with pressure ulcers. We inspect and recorded the age, gender, and chronic diseases. The study evaluates the pressure ulcer according to pressure ulcer Advisory panel.

Consequences of pressure ulcer among bed ridden

80% of participants experienced pain with an average healing time of 7/10. Delayed Healing 70% of bedridden patients had delayed healing with an average healing time of 12 weeks. Recurrent pressure ulcer 60% of bedridden patient recurrent pressure ulcer Pressure ulcer size; the mean pressure ulcer size was 4.5cm X 5.5cm Pressure ulcer duration the average duration of pressure ulcer was 3.2 months.

Table1. Demographic characteristic of pressure ulcer

Patients	Mean
All	80.3
Male	66.15
Female	66.15

The mean age of patient with pressure ulcer was 80.3years and the range of the was 21- 103years

Table. 2 Gender

Gender	N (%)
Female	170(63.7)
Male	97(36.3)

Pressure ulcer were observe more frequently in females 170(63.7) of the patients were females while remaining 97(36.3) were male.

Comorbid disease were hypertension in 231(86%) heart disease in 180(67.4%) Dementia 165(61.8%) Diabetes Mellitus in 76 (28.5%) Cerebrovascular disease in 133(49.8%) Hip fracture in 120(7.5%) Cancer 32(12%).

Table 3. Comorbid diseases

Comorbid Diseases	n (%)
Hypertension	231 (86.5)
Heart disease	180 (67.4)

Dementia	165 (61.8)
Diabetes mellitus	76 (28.5)
Cerebrovascular disease	133 (49.8)
Hip Fracture	20 (7.5)
Cancer	32 (12)

Risks factors associated with pressure ulcer

Table 4. Risk factor

Risk factor	n (%)
Diaper use	258 (96.6)
Urinary incontinence	253 (94.8)
Medical device use	124 (46.4)
Oral nutritional Solution	120 (44.9)
Urinary Catheter use	50 (18.7)
Tube feeding	109 (40.8)

Risks Factors for pressure ulcer were diaper 258(96.6) Urinary incontinence 253(94.8%) Use of medical devices in 124(46.4%) Oral nutrition solution in 120(44.9%) Catheter use in 50(18.7%) tube feeding in 109(40.8%).

Discussion

Based on the data obtained from the study 80% of patients experienced pain with an average healing time of 7/10 delayed healing 70%, of bedridden patients had delayed healing with average healing time of 12 weeks. Recurrent pressure ulcer 60% of bedridden patient's recurrent pressure ulcer the mean pressure ulcer size was 4.5cm x5. 5cm and the average duration of pressure ulcer was 3.2 months this findings is in line with the finding of the study conducted by (Du et al., 2025); (Beriso et al., 2024); (Krakowczyk et al., 2024), in the United states between 1990 and 2000 the NPUAP reported a rate of pressure ulcer ranging from 10% to 18% in general acute care 2.3% to 28% in long term care and up to 29% in home care and 2.3% to 28% in long term care and up to 29% in home care and 0% to 6% in rehabilitation care. Based on the data obtained the mean age of the patient with pressure ulcer were 80.3years and the range of 21- 103years. This finding is in line with the finding of (Durmuş Sarıkahya, 2024); (Alito et al., 2023), found that patients between 75 and 84years of age had the highest rate of pressure injury a d those over [the age of 65. The study also found that pressure ulcers were observed more frequently in female 170(63%) of the patient were females while the remaining 97(36.7) were male (Öztop & Öksüz, 2023) found that hospitalized male patients with pressure injuries had more psychological distress than hospitalized male patients. The study also found that comorbid disease were 180 (67.4%). Dementia 165(61.8%) Diabetes mellitus in 76(28.51) Cerebrovascular disease in 133(49.8%) Hip fracture in 120(7.5%) Cancer 32(12%). This finding is in line with the finding of (Spoonemore et al., 2023). Occurrence of pressure injuries and pain has been directly associated with the presence of comorbidities (Axon & Eckert, 2024); (Siaton et al., 2024); people who have comorbidities are

more likely to experience pain than people without comorbidities.

Based on the data obtained risk factors for pressure ulcer were diaper use 258(96.6%) urinary incontinence 253(94.8%) use of medical devices in 124(46.4%) oral nutrition solution in 120(44.9%) catheter use in 50(18.7%) tube feeding in 109(40.8%) This finding is in line with the finding of (Fordyce et al., 2020). Factors that may place a patient at risk include immobility, diabetes Meade, malnutrition, cerebrovascular accident and hypotension.

Conclusion

In conclusion, pressure ulcers among bedridden patients have severe consequences on their physical and mental well-being, healthcare utilization, and economic resources. The findings highlight the need for: Enhanced pressure ulcer prevention and management strategies, Regular assessments and timely interventions. Improved patient mobilization and repositioning. Effective wound care and management. Increased awareness and education for healthcare professionals and caregivers. Allocation of adequate resources and support. By acknowledging the gravity of pressure ulcers and taking proactive steps, we can reduce the incidence, severity, and impact of pressure ulcers, ultimately improving the quality of life and care for bedridden patients.

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