Research Article

Prevalence of Pressure Ulcers and its Relative Distribution among Hospitalized Patients in Tertiary Care Hospitals of Lahore

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Abstract

Background: Pressure ulcer also known as bed sore is an area of localized damage to the skin and/or underlying tissue usually over a bony prominence as a result of pressure combined with shear and it has long been recognized as a major cause of morbidity, mortality and health care burden globally. **Objective:** Objective of the study is to find the prevalence of pressure ulcers in tertiary care hospitals of Lahore. **Study design**: Cross sectional study design. **Settings:** Tertiary care hospitals of Lahore. **Duration:** Four months from August 2019 to November 2019. **Methodology:** Data was collected from 382 patients admitted in different wards of tertiary care hospitals in Lahore. Self- designed questionnaire was used which was validated through a pilot study. Chi square test was used for data analysis. **Results:** Out of 382 patients 257 (67%) were having pressure ulcers at the time of survey. Most prevalent site was coccyx with 21.4% prevalence, most of the pressure ulcers were in grade 2. ICU patients were mostly affected with pressure ulcers (45.9%). **Conclusion:** In this study 257 patients were found to have pressure ulcers. Most of them were having only one pressure ulcer at the most prone site of the body. Coccyx was the most common site of pressure ulcer development followed by sacrum. Most of the patients were receiving physical therapy care by an indoor physical therapist once in 24 hours. Most of the ulcers were in grade 2. Age, ward and physical therapy care were associated with each other. Those who were provided physical therapy care were having grade 2 pressure ulcers and those who were not provided with physical therapy care were having pressure ulcers in grade 3 and 4. Site of pressure was also in association with a number of pressure ulcers. Coccyx was the site with one, two or more than two pressure ulcers.

Keywords: Menstrual distress; School and college female students; BMI

Introduction

Pressure ulcer, pressure sore, pressure injury are some terms which are used synonymously to describe a bed sore which is defined as "an area of localized damage to the skin and/or underlying tissue usually over a bony prominence as a result of pressure combined with shear and it has long been recognized as a major cause of morbidity, mortality and health care burden globally. Patho-Physiology behind pressure ulcer development is that due to constant pressure capillaries are compressed and there is ischemia, necrosis and cell death of tissues, as a result cutaneous tissue break down that leads to progression to subcutaneous soft tissue, muscle and bone damage. This condition is very painful and leads to slow healing of wound. [1]

The National Pressure Ulcer Advisory Panel (NPUAP) and the European Pressure Ulcer Advisory Panel (EPUAP) defined a PU as a lesion or a trauma to the skin and the underlying tissue resulting from unrelieved pressure, shear, friction, moisture or a combination of all these, usually over a bony prominence. PU staging refers to a recognized and established system to classify the level of tissue damage or depth of injury observed. [2]

Pressure ulcers are classified into stages to classify the degree of tissue damage. There are 4 stages of pressure ulcers. Stage1 are characterized by erythema (redness) of skin but skin is intact. In stage 2 ulcers skin damage is limited to mainly epidermis but sometimes also involves dermis. In Stage 3 ulcers there is necrosis of whole skin but fascia is not involved. In stage 4 pressure ulcers there is full thickness skin loss, which extends to bone and muscle and other soft tissues and extensive necrosis. Common sites of pressure ulcers are behind head, at shoulders especially scapula, at elbows, sacrum, buttock, heel, back of ears, greater trochanter, inner knees etc. in short where there is bony prominence the risk of pressure ulcer is also greater at that site. Risk factors for pressure ulcer are prolonged hospital stay, and highest prevalence in intensive care units 35.3%, old age, bowel and bladder incontinence, albumin level problems,

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diabetes, a Braden score below 17, being under- weight, inadequate nutrition [3] non-blanchable erythema, urogenital disorders and a higher body temperature [4] are important risk factors for the development of pressure ulcers. [5] . Despite increased awareness and attention, incidence rate for pressure ulcer development is unacceptably high. European healthcare providers each spend between 1%-4% of their total budget per year on PU treatment and prevention. Annual cost for pressure ulcers in United States is US$ 9•1-11•6 billion. Above all these pressure ulcers negatively affect rehabilitation and quality of life of the patients admitted to hospitals. [6] From the year 1993 to 2006 there is 80% increase in the number of patients who were hospitalized, which leads to PU occurrence [7].

Prevalence of pressure ulcer is not the same in all hospitalized patients but there is variation in different units of a hospital. In most of the studies prevalence is in this order from highest to lowest in Long Term Care Units (LTCU), Intensive Care Units (ICU), nursing homes and Rehabilitation Units (RU). [8]

Pressure ulcers mostly affect older patients and adults. Pressure ulcers among older individuals in long-term care facilities are a global problem with prevalence ranging from 10% to 30%. [9]

Pressure Ulcers (PUs) are a typical and expensive inconvenience patients experience when hospitalized. Heart medical procedure patients are among those most in danger for PU improvement; the revealed rate in heart medical procedure patients is as high as 29.5%. Patients who create PUs suffer from various related results including torment, contamination, sepsis, handicap, and, in uncommon cases, passing. Moreover, the expenses associated with treating PUs are significant. Furthermore, expanding the length of the remainder by as long as 11 days [10].

Díez-Manglano J, et al. conducted a prospective cohort study to find the association between pressure ulcers and risk of mortality in hospitalized patients. Percentages of patients who died during hospitalization, during one year, or within three years are 23%, 68% and 82% respectively. The presence of pressure ulcers was individually associated with mortality. [11]

Lima Serrano M, et al. conducted a systematic review to find the risk factors of pressure ulcers in intensive care units and concluded that age, length of ICU stays, diabetes, mechanical ventilation, length of mechanical ventilation, hemodialysis, vasopressor support, sedation and turning are some of the risk factors for pressure ulcer development. [12]

Lechner A, et al. conducted a cross sectional study the find the association between dry skin and pressure ulcer risk and concluded that the presence of skin dryness at the trunk was significantly higher for subjects with pressure ulcers category 2+(71.9%) of patients had dry skin at legs or feet and presented with heel/ankle pressure ulcers category 2+. Skin dryness may be less important for sacral pressure ulcers. [13]

Materials and Methods

Study Design

Cross sectional study.

Study setting

Tertiary care hospitals of Lahore.

Duration

Four months from August 2019 to November 2019.

Sample technique

Convenient sampling technique.

Sample size

Total Three hundred and eighty-two patients.

Inclusion criteria

Patients who had pressure ulcers at the time of survey and their hospital stay duration was at least one week.

Exclusion criteria

A pre tested and validated questionnaire was used to measure the baseline knowledge, attitude and practice regarding the pandemic and alternative therapies for the same.

Data collection procedure

With a self-designed questionnaire, data was collected from patients admitted in different wards (surgical, medical, ICU etc.) was used for data collection and analyzed by using SPSS version 22.

Results

Out of 257 patients that were found to have pressure ulcers at any site of the body, 69.65% (181) were found to be males whereas 30.35% (78) were found to be females.

Out of 257 patients who reported to have pressure ulcers on various sites of their body, 5.06% (13) were found to be 50-60 years old , 41.25% (106) were found to be 60-70 years old , 47.08% (121) were found to be 70-80 years old whereas only 6.61% (17) were found to be 80-90 years old.

45.91% (118) patients were found in Intensive Care Units of the hospitals, 34.6% (89) in Medical wards whereas 19.5% (50) of patients were found in the Surgical Wards of tertiary care Hospitals of Lahore. patients who were found to suffer from pressure ulcers, 93 patients i.e. 36.2% had only one pressure ulcer at any of the prone sites, 90 patients i.e. 35% had two pressure ulcers at any of the sites in body while 74 i.e. 28.79% had pressure ulcers more than two.

Patients who reported to have pressure ulcers, 72.76% (187) claimed to be provided by regular physiotherapy by the indoor therapist whereas 27.24% (70) reported not to be provided physiotherapy.

Out of 257 patients, 37 i.e. 14.40% patients had ulcer at occipital region, 5 i.e. 1.95% had at Temporal region, 6 i.e. 2.33% had ulcers at shoulder region and 23 i.e. 8.95% had ulcers at elbow region. 53 patients i.e. 20.62% had ulcers at sacrum at 55 i.e. 21.40% had ulcers at coccygeal area.

In lower limb, 14 patients i.e. 5.45% had ulcers at greater trochanter, 31 i.e. 12.06% at ischia tuberosity, 14 i.e. 5.45% at lateral malleolus and 19 i.e. 7.39% had ulcers at their heel area.

7 patients i.e. 2.7% had a pressure ulcer of grade 1, 120 i.e. 46.69% had ulcers of grade 2, 107 i.e. 41.63% had grade 3

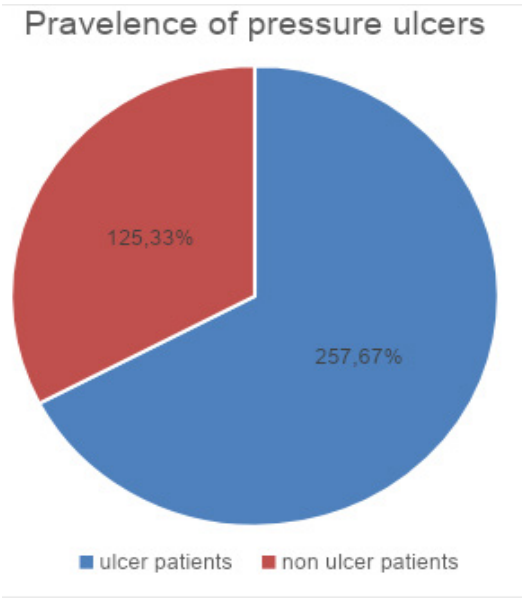

Figure 1: Out of 382, 257 have pressure ulcers on their body and 125 did not have. So prevalence of pressure is 67% in current study.

Table: 1: Sites of Pressure Ulcers In Patients.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Occipital region	37	14.4	14.4	14.4
Temporal	5	1.9	1.9	16.3
Shoulders	6	2.3	2.3	18.7
Elbows	23	8.9	8.9	27.6
Sacrum	53	20.6	20.6	48.2
Coccyx	55	21.4	21.4	69.6
Greater Trochanter	14	5.4	5.4	75.1
Ischial Tuberosity	31	12.1	12.1	87.2
Lateral Malleolus	14	5.4	5.4	92.6
Heels	19	7.4	7.4	100
Total	257	100	100	

ulcers and 23 i.e. 8.95% had grade 4 ulcers [Figure 1].

Table 1 depicts that out of 257 patients, 37 i.e. 14.40% patients had ulcer at occipital region, 5 i.e. 1.95% had at Temporal region, 6 i.e. 2.33% had ulcers at shoulder region and 23 i.e. 8.95% had ulcers at elbow region. 53 patients i.e. 20.62% had ulcers at sacrum at 55 i.e. 21.40% had ulcers at coccygeal area.

In lower limb, 14 patients i.e. 5.45% had ulcers at greater trochanter, 31 i.e. 12.06% at ischial tuberosity, 14 i.e. 5.45% at lateral malleolus and 19 i.e. 7.39% had ulcers at their heel area.

Out of 257 patients, 7 patients i.e. 2.7% had a pressure ulcer of grade 1, 120 i.e. 46.69% had ulcers of grade 2, 107 i.e. 41.63% had grade 3 ulcers and 23 i.e. 8.95% had grade 4 ulcers.

Discussion

The study was conducted to find the prevalence of pressure ulcers among tertiary care hospitals of Lahore. Sample size 382 of them 257 patients had pressure ulcers at one or more site. Prevalence rate was 67.2% which might be different from the results of other studies of the same type but this difference is present due to any reasons such as; sample size variations, inclusion and exclusion criteria and study settings

Age of the patients was related to site of pressure ulcer as shown by the statistics (55.425>38.89), in all age groups coccyx was the most common site for pressure ulcer. In 50-60 years most of the pressure ulcers were found in occipital region, in 60-70 years of age it was coccyx region, in 70-80 it was sacral region, in 80-90 years it was coccyx that was most affected.

Number of pressure ulcers and site of pressure ulcer was in association with each other. Results of chi square test show this association (71.438>28.87). Coccyx was the most prevalent site with one pressure ulcer, two pressure ulcers and more than two pressure ulcers.

Patients were having pressure ulcers in different grades and locations. Number of pressure ulcers was also different for different patients. Data regarding physical therapy care and number of PT sessions was also collected. Most of the patients affected by pressure ulcers were male (69%) and less were female (30%). Another study has almost similar results describing 53% patients having pressure ulcers were male. [14]. Most of the patients having pressure ulcers were in the age range 70-80 years. The results of a study which was conducted in the year 2017 showed that the most prevalent site of pressure ulcer development was sacrum and coccyx. [15]

Pressure ulcers are the cause of morbidities in bed ridden patients once they are formed they are not easy to cure also they add to the discomfort of patients. Precautionary measures should be taken by hospital and other caretaker staff to avoid pressure ulcers. Repositioning, wound care, cleanliness, moisture free environment and proper circulation are some of the preventive measures to be taken to avoid these.

Conclusion

In this study 257 patients were found to have pressure ulcers. Most of them were having only one pressure ulcer at the most prone site of the body. Coccyx was the most common site of pressure ulcer development followed by sacrum. Most of the patients were receiving physical therapy care by an indoor physical therapist once in 24 hours. Most of the ulcers were in grade 2. Age, ward and physical therapy care were associated with each other. Those who were provided physical therapy care were having grade 2 pressure ulcers and those who were not provided with physical therapy care were having pressure ulcers in grade 3 and 4. Site of pressure was also in association with a number of pressure ulcers. Coccyx was the site with one, two or more than two pressure ulcers.

Limitations

The study was conducted in a limited area and limited space of time so that results could be compiled easily. The results are only applicable to tertiary care hospitals of Lahore. This survey cannot be used on a very large scale.

Suggestions/Recommendations

All the authors declare that there was no conflict of interest in the present study.

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