

# **Prevention of Bedsores among the Aged at the Community Level in Kenya**

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## **I. Introduction**

### **Background of the Study**

Bedsores also called pressure ulcers and decubitus ulcers are injuries to skin and underlying tissue resulting from prolonged pressure on the skin. Bedsores most often develop on skin that covers bony areas of the body, such as the heels, ankles, hips, and tailbone. People most at risk of bedsores are those with a medical condition that limits their ability to change positions or those who spend most of their time in a bed or chair (Bansal *et al.*, 2015).

Lying in bed or sitting in a chair without movement induces pressure on the skin and subcutaneous tissues, and are predisposing factors for PU. Redness and breakdown of the skin occurring at the location of bone prominences and the exposure to fecal and urine secretion increase the appearance of the PU. The tissue ischemia is caused by external factors including pressure; shearing forces, friction, and moisture play an important role in the wound emergence. The pressure on the skin and subcutaneous tissue during prolonged lying on a bone prominence, as well as immobility without repositioning, compresses the blood perfusion and induces oxygen deprivation (McInnes *et al.*, 2015).

The most exposed skin areas susceptible to the introduction of PU are 65% to 75% in the central region, including the pelvis girdle (sacrum, greater trochanter, and ischium), and 25%-30% appearing in peripheral areas, such as the feet (heel, ankle, and the lateral area of the foot) (Smith *et al.*, 2016). Twenty percent (20%) of PU notably occurs in atypical locations related to medical devices, severe spasticity and bone deformation (Jaul, 2011).

Many factors act synergistically and cause PU. Aging of the skin, comorbidities, nutritional state, and the functional impairment was reported to be risk factors in the development of PU (Thomas, 2011). The most significant associated factors, however, are the result of the functional outcomes of the diseases such as immobility, incontinence, and impaired cognition. These functional impairments, particularly immobility, increase vulnerability as well as damage the integrity of the skin by external factors, including pressure, shearing forces, friction, and wetness, resulting in PU (Allman *et al.*, 2015).

Age-related skin changes induce flattening of the layers at the dermo-epidermal junction, a loss of elasticity and thinning of subcutaneous tissue. Reduced vascular intradermal blood perfusion and oxygenation are important age-related factors for the development of PU (Farage *et al.*, 2015). Reduced muscle mass (sarcopenia) and a decrease in both the hormonal secretion and the immunity lead to the susceptibility of skin damage.

The physiologic healing process of these wounds consists of four dynamic, well defined, overlapping stages: homeostasis, inflammation, proliferation, and remodeling. In aging, the healing process might be arrested at any of the above stages; especially at the inflammatory or proliferative stage. The mediators of this arrest can include an impairment of the inflammatory cells, growth factors, proteases, cellular and/or extracellular elements (Enoch *et al.*, 2016).

Systemic factors including the aging of the skin, functional impairment, chronic diseases, malnutrition, and infection contribute to the appearance and development of the ulcers. Anemia, low protein, and albumin are predisposing factors, as well as being serious complications affecting PU, interfering with the cure. Low tissue thickness due to decreased BMI is a predisposing factor for PU, especially in surgical and orthopedic patients (Eket *et al.*, 2011). These commonly appear in patients with chronic diseases including advanced dementia, Parkinson disease, fracture of the hip, traumatic events and deconditioning occurring with longer hospitalization. Prolonged periods of time lying in bed without movement, as well as moisture due to urinary incontinence, are additional causes increasing the incidence of PU.

### **Statement of the Problem**

Bedsores are a common medical complication in the frail elderly. Due to the increase in the elderly population and accrued accompanying comorbidities, there is a higher prevalence of pressure ulcers. These induce suffering and worsening in quality of life and prolong hospitalization. Pressure ulcers are a burden on the medical services and increase their cost substantially (Jaul, 2011). Systemic factors such as aging of the skin, functional impairment, chronic diseases, malnutrition, and infection contribute to the appearance of the ulcers

and activate development. Low BMI, anemia, low protein, and albumin are predisposing factors, as well as serious complications of pressure ulcers interfere with the cure.

Prevention of pressure ulcers should be started by the primary caregivers through education of the patient and family concerning the external factors as pressure relieving devices, especially mattresses and cushions, position changes, lubrication of the skin and adequate calorie intake for the patient. Because of the scarcity of hospital beds, many bedridden patients are provided care by the family caregivers in their home care settings. Although the disabled enjoy a better quality of life when they are cared for at home, however, the quality of care provided by the informal caregivers is questionable. They are usually untrained and unprepared for new roles and responsibilities and lack basic knowledge about care provision. Hence, they are constantly challenged to solve problems and make decisions as per the needs of the patients. This study seeks to evaluate the prevention of bedsores among the aged the community level in Kenya.

### **Research Objectives**

- i. To determine the effect of training of caregivers on prevention of bedsores among the aged the community level in Kenya
- ii. To assess the efficacy of prevention of bedsores among the aged the community level in Kenya
- iii. To examine the effect of compliance of caregivers on prevention of bedsores among the aged the community level in Kenya

## **II. Literature Review**

### **Training of caregivers on prevention of bedsores among the aged the community level**

Alhosis *et al.*, (2012). carried out a study to determine the effectiveness of an educational program on a family caregiver's prevention and management of pressure ulcers of bedridden patients after discharge from the hospital. The study revealed the effectiveness of this educational-training program in managing and preventing pressure ulcers for bedridden patients by caregivers at their homes. It was recommended that application of this preventive program should be extended to cover all the rehabilitative and governmental hospitals of the region to reduce the burden of pressure ulcers on the families and the health-care system.

Eljedi, ElDaharja, and Dukhan (2015) sought to determine the effectiveness of an educational program on a family caregiver's prevention and management of pressure ulcers of bedridden patients after discharge from El-Wafa Medical Rehabilitation Hospital, Gaza Strip, Palestine. Pre-experimental, prospective, with pretest and posttest, the design was followed. The study recruited a convenient sample of 80 caregivers of the bedridden patients who were admitted to El-Wafa Medical Rehabilitation Hospital. Pretest questionnaire was administered for the eligible subjects. The educational training package was delivered in three sessions within 1 week. Posttest questionnaire was filled after 3 weeks to assess the effectiveness. The study results indicated that about 58.8% of the caregivers were women and 53.8% aged younger than 30 years. The performance of the caregivers has significantly improved after the program in most of the items. Scores of subscales: wound care and dressing, proper nutrition, maintaining personal hygiene, incontinence training and knowledge about ulcers were all significantly higher after training. The difference between the total domains after the program was significantly higher than the total domains before the program. The study revealed a high effectiveness of this educational-training program in managing and preventing pressure ulcers for bedridden patients by caregivers at their homes. Application of this preventive program should be extended to cover all rehabilitative and governmental hospitals in Palestine to reduce the burden of pressure ulcers on the families and the health-care system.

Young *et al.*, (2015) conducted a study to describe the effect of Medline Pressure Ulcer Prevention Program. They found a significant reduction in the mean monthly hospital-acquired pressure ulcer rate when preprogram was compared with post-program.

### **Efficacy of prevention of bedsores among the aged the community level**

Moody *et al.*, (2014) looked at the impact of staff education on pressure sore development in elderly hospitalized patients. The study aimed at testing the hypothesis that an educational program alone without the introduction of new technology could result in both higher quality care and cost savings, the incidence of development of pressure sores among patients over the age of 65 years was concurrently reviewed before and after an education program developed and disseminated by a skin care team composed of physicians and nurses. Before the education program, 18(14.6%) of 123 patients with no pressure sores developed pressure sores during their hospital admission. After the education program, only six (5.4%) of 105 patients who entered the hospital with intact skin developed a pressure sore during their hospital stay. The data show that an educational program was effective in decreasing by 63% the development of pressure sores in an elderly hospitalized population. Furthermore, a cost savings of \$74372 in the use of special care beds was realized.

Moya and Morison (2011) investigated the prevention and treatment of pressure ulcers. The sample constituted 100 caregivers of these clients. There was a reduction in the incidence of pressure ulcer from 7% before the educational program to 5% post education.

### **Compliance of caregivers in the prevention of bedsores among the aged the community level**

Moya (2011) emphasized that elderly patients at risk of pressure ulcer must be carefully identified for effective prevention. Preventive measures must be rapidly implemented to reduce or eliminate factors contributing to the development of pressure ulcer. Risk factors include prolonged or heavy pressure, friction, shearing force, malnutrition, and bowel incontinence. The position of patients with severe sensorial disorders should be changed every 2 or 3 hours. Bed rest should be interrupted as soon as possible, using a cushioned chair. Reclining in the strictly lateral position (with pressure on the trochanters) must be avoided. A 30 degrees dorsal inclination in the lateral position is preferable.

Kwong, Hung, and Woo (2016) investigated the improvement of pressure ulcer prevention care in private for-profit residential care homes: an action research study. The study found that caregivers complied fully with the instructions regarding the proper positioning of patients with bedsores, providing active and passive exercises, regular inspection of bony prominences, and gently massaging at the bony prominences post-intervention. There was an increase in the percentage of caregivers complying with the instructions at each follow-up.

### **III. Research Methodology**

This study will adopt a cross-sectional survey research design. Cross-sectional studies involve data collected at a defined time. They are often used to assess the prevalence of acute or chronic conditions or to answer questions about the causes of disease or the results of the intervention. They illustrate issues as they exist in the current situation; they may be used to describe some feature of the population, such as the prevalence of an illness, or they may support inferences of cause and effect (Schmidt, Kohlmann, 2013).

The study will target the aged at the community level. The sample size employed for the identification of the target population will be scientifically computed as recommended by Fischer *et al.*, (2011). The sample size for the study, therefore, will be 328 respondents

Purposive and systematic random sampling will be used to select the respondents. The study will adopt the use of questionnaires as the main data collection instruments. The researcher will consult her supervisors and other experts and specialists in this area for expert validation.

An environment will be created where the respondents will be able to honestly complete the questionnaire. The data collected will be verified and entered into the Statistical Package for Social Scientists (SPSS) version 21 computers software, analyzed and interpreted in accordance with the study objectives.

Descriptive statistics including the mean, median and range will be calculated to summarize the data. Inferential statistics including Chi-square or Fisher's exact test of the association will be done to check for an association between categorical variables of interest, where appropriate student t-tests will be used when comparing mean scores of two groups, and analysis of variance for comparing means of more than two groups. The test statistic and corresponding p-value will be reported. The study will be conducted at a level of significance 0.05

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Rotich Joyce Cheron. "Prevention of Bedsores among the Aged at the Community Level in Kenya." IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 7, no.5, 2018, pp. 75-78.