

Assessment and management of pressure ulcers: nursing interventions



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Pressure ulcers continue to present a prevalent concern for patients in health care facilities and the incidence is even expected to rise further with the increasing age of the population. This is a problem that has high potential to be prevented. Therefore, the prevention, assessment, and management of decubitus ulcers are of great importance to healthcare professionals who are charged with the care for these individuals (Clarke et al., 2005).

Pressure sores occur when there are localized areas of tissue damage or ulceration of the integument second to decreased blood supply disruption to these soft tissues. This occurs as a consequence of constant pressure, where the pressure exerted on an area is greater than the capillary pressure causing ischemia, friction, or shear force. Florence Nightingale, often considered the pioneer of nursing, recognized in 1860 that quality nursing care can prevent the occurrence of decubitus ulcers among patients (Ousey, 2005). Quality of care will be increased with the implementation of nursing interventions surrounding bed sores.

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Pressure ulcers present a cost to the health care providers, both financially and time. Pressure ulcers can increase nursing time up to 50%, which is relatively substantial considering many healthcare facilities face nursing staff shortages (Clarke et al.). According to the article written by Joan Wurster, the cost of pressure ulcers is substantial with stage one, two, and three stage ulcers costing between \$2, 000 and \$30, 000, and stage four pressure ulcers costing up to \$70, 000. The cost involved with treating such bed sores often times exceeds the cost of prevention by a large sum of money (Wurster, 2007). Preventative measures are, therefore, essential to implement and include interventions. There are several guidelines listed in National Guideline Clearinghouse regarding pressure ulcers including Assessment and Management of Stage I to IV Pressure Ulcers. This guideline establishes several recommendations such as assessing a patient's risk using the Braden Scale, use of special pressure reducing mattresses, managing adequate nutrition. If a pressure sore is to develop, evidence shows that a proper high-protein diet, the use of wet-dressings, and hyperbaric oxygen as treatments all promote the wound healing process. In taking such actions, the goal of the healthcare provider is that the patient will be free of pressure ulcers during hospitalization and appropriately assessed and managed if one does occur (Registered Nurses Association of Ontario, 2007). Research shows that using evidence-based guidelines, which incorporate scientific evidence and clinical expertise, are the premise of successful prevention and treatment of pressure ulcers (Clarke et al., 2005).

Assessment of Patient Risk Using the Braden Scale

Prompt and accurate risk assessment is critical in preventing the formation of pressure ulcers. The Braden Scale was created and is now used in countless hospitals to facilitate and guide the nursing care team in their evaluation. Not only can this assessment tool inform a health care professional of any propensities towards skin break down, but also may allow him or her to treat the condition prophylactically if indicated. Rather than just risk assessment, the Braden Scale may be used for evaluation of the current effectiveness of ulcer care regime for patients' with existing ulcers (Braden & Maklebust, 2005).

The Braden Scale was created in 1984 by Barbara J. Braden, to accurately and systematically describe the risk for development of pressure ulcers (Braden & Maklebust, 2005). This scale includes six subscales: sensory perception, moisture, activity level, mobility, nutrition status, as well as the skin's exposure to friction and shear forces. Using established guidelines, the nurse assesses the patient and associates his or her findings with a numerical value. These are combined and a patient is given a total score which is indicative of the client's risk of developing a pressure ulcer (Ousey, 2005). Final scores can range anywhere from 6-23. A person is considered at risk if their resulting score is less than 18, as this is the point research shows the relationship between ulcers and risk factors becomes relevant. The lower a patient's score, the greater threat they experience of developing a pressure sore (Braden & Maklebust, 2005). This information can be used to determine what preventative practices can be implemented, as well as the establishment of baselines to gauge the effectiveness of the practices.

It should be standard protocol for healthcare facilities to have their staff use the Braden Scale or other objective risk assessment tools when appropriate. Currently, most accreditation agencies now require some form of risk assessment, yet often assessments are shortened, excluding vital factors and skewing the validity of the assessment (Braken & Maklebust, 2005). It is up to hospitals, or other care facilities, to ensure that these measures are being implemented. It is best if a minimum standard protocol is established, and the frequency of assessments tailored based on the individual's needs. Recommendations suggest an assessment upon admittance and base the remaining intervals off of the stability of the patient's condition. In an acute care setting it is suggested patients be reassessed at least every forty-eight hours, if not more frequently. ICU patients should be reassessed daily if they remain in a stable state or every shift if they are not (Braken & Maklebust, 2005). In the event of the discovery of the indicators of pressure sores then increasingly aggressive preventative measures can be implemented to prevent the occurrence of ulcers, and minimize the discomfort or complications to the patient.

Once standard protocols are integrated it is important to evaluate their effectiveness. Baseline values must be obtained. Since the goal surrounding this nursing intervention is reducing the frequency, it would be logical to obtain the rate at which pressure ulcers are occurring, taking into account the demographics of the patients being evaluated. Braden scale assessment totals and other assessment findings such as erythema, non-blanching hyperaemia, blisters, discoloration, and localized heat and edema, should be documented for each patient and checked for improvement for the individual

(Braden & Maklebust, 2005; Ousey, 2005). Proof of this documentation must be recorded. After a healthcare facility establishes a standard for using a risk assessment tool at a set interval, the rate should once again be evaluated and compared to the original figures to note any improvement. Studies have been conducted in a similar fashion to evaluate the success of employing the Braden Scale into common practice. A study found that “ patients in a large tertiary care ICU, after Horn and colleagues implemented use of the Braden Scale and preventive protocols, the incidence of pressure Ulcers among the most critically ill patients decreased from 33% to 9%” (as cited in Braden & Maklebust, 2005, p. 71). Statistical analysis shows that including the use of the Braden Scale in your plan of care can reduce the rate of pressure ulcer formation substantially, making this guideline applicable to the patient goal.

Use of High Specification Foam Mattress

Pressure ulcers occur as a result of decreased capillary blood flow to dermal tissues, as oxygen and nutrients are not delivered, and wastes not removed. The use of support surfaces, such as mattresses, mattress overlays, or dynamic support surfaces, is an intervention for prophylactic treatment of pressure injury.

In order maintain some perfusion, the external tissue pressure must remain above the capillary closing pressure of 33 mmHg. This is of extreme significance around bony prominences , including tissues over the sacrum, Ischia, greater trochanters, external malleoli, and heels, all of which are frequent areas susceptible to impaired localized skin integrity (Thomas, 2008). According to Ousey, this information is very pertinent, especially

when doing a comparison to the force between bony prominences and a <https://assignbuster.com/assessment-and-management-of-pressure-ulcers-nursing-interventions/>

standard hospital mattress. These forces ranged between 70 and 100 mmHg, clearly above the capillary closing pressure. If a patient is unable to move, this pressure is too great for the body to handle, and tissue damage occurs (Ousey, 2005). The use of high specification foam mattresses cradles the body in its entirety and distributes the weight so pressure is distributed over a larger surface area (McInnes, Cullum, Bell-Syer, Dumville, 2008). The goal of replacing the mattress or using other supportive surfaces is to reduce the pressure between the patient and the supportive surface below 33mmHg, allowing for blood flow in those patients who are immobile or have decreased sensation (Thomas, 2008).

Preventative transfers of patients of moderate to high risk for developing pressure ulcers to high pressure reducing surfaces has the ability to substantially decrease the prevalence of pressure related injuries. The Prevention and Management of Pressure Ulcers article states that “ when compared to a standard hospital mattress, a number of pressure-reducing devices lower the incidence of pressure ulcers by about 60%” (Thomas, 2008, p. 243). Regulation surrounding this issue should be instituted as part of the creation of the plan of care when considering prediction and prevention of decubitus ulcers. Evidence-based research shows that there is no significant difference between the use of alternating pressure dynamic air flow beds, silicone overlays, foam overlays, sheepskin overlays, or other air filled devices. Health care facilities should take into account the cost and ease of use when purchasing these (Reddu, Gill, Rochon, 2006).

Once again, in order to evaluate effectiveness, baseline values of the grade and prevalence of ulcers must be obtained and compared with values
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obtained at a later time after changes in care have been implemented. It is important to note such things as the age, activity tolerance, gender, present illnesses, and type of supportive surface used to prevent the formation of an ulcer. A guideline followed in an experiment conducted by de Laat, preventative transfers were arranged prior to ulcer formation in the event of finding nonblanchable erythema or an expected immobility exceeding seventy-two hours. Following these procedures surrounding preventative transfers, as well as the sound clinical judgment, proved to be the of the strongest statistical significance in reducing the pressure ulcer density grade II-IV within a one year time period (de Laat et al., 2007). The use of pressure-reducing surfaces, especially if used as a early, is another intervention that will help reach the patient goal of preventing the occurrence of pressure ulcers.

Managing Nutrition

Insufficient nutrition predisposes individuals to developing a pressure ulcer, as well as delays the healing process of sores that do form. Proper nourishment and hydration are behind all body processes, both vital in function and not. It is imperative to maintain good nutrition to provide an optimal environment so that homeostasis may be maintained. However, it is a common occurrence that client's who are admitted to the hospital don't have optimal intake of food or water due to a variety of factors including eating nothing by mouth prior to surgery, unconsciousness, feeling of nausea, presence of illness, polypharmacy, and physical or mental disability (Ousey, 2005). These conditions may result in poor nutrition or malnutrition statuses. The problem lies in the fact that there is no definitive diagnosis for

undernutrition. Weight loss and biochemical data of hepatic proteins are the accepted standard. Albumin, pre-albumin, and hemoglobin levels are analyzed. Even though these indicators help health care professionals evaluate possible nutrition issues and possibly identify those at risk for developing, they can fluctuate due to underlying disease or hydration status (Dorner, Posthauer, Thomas 2009; Thomas, 2008). Inadequate intake of calories, proteins, fluids, vitamins, and minerals, as well as a low body mass index, may result in impaired skin integrity. It is not yet universally accepted that nutrition status is directly linked to the development of pressure ulcers because studies have not been producing consistent results showing the relationship. On the other hand, there is an accepted correlation between nutritional status and wound care healing. Therefore, it is essential that clinical malnutrition is prevented. A well-balanced diet high in protein is necessary for the healing of pressure ulcers (Dorner, Posthauer, Thomas 2009).

Increased calorie and nutrient consumption is required to overcome the hypermetabolic state and increased energy needs. Carbohydrates are needed for the synthesis of glucose, glutamine is needed to serve as a fuel source for epithelial cells, arginine is supports the formation of protein, fluids are needed to serve as a solvent and transportation, ascorbic acid for the production of collagen, and zinc for collagen formation, protein synthesis, and cell proliferation. Perhaps the most important nutrient needed for wound healing is protein. It is needed to maintain nitrogen balance and for the synthesis of enzymes involved in wound healing and collagen and connective tissue production. In order to ensure that all clients have met these

nutritional needs, support may be desirable. These include consultation with a dietitian, consultation with a speech pathologist if indicated, use of nutritional supplements, enteral feeding, and parenteral nutrition (Dorner, Posthauer, Thomas 2009).

All people are at risk for malnutrition whether young or old, so upon admission, all patients' nutritional status should be assessed to determine existing or potential malnutrition, and referred for further help if indicated. Throughout the client's stay at the hospital, all patients' intake should be monitored for nutritional value and fluid consumption. If indicated additional supplements should be given within recommended daily intake norms if needs are not met. The obtained information on nutritional status must then be compared with progress made in the healing of the pressure sore, including decreased size and depth, as well as decreased exudate. Reassessment of hepatic lab proteins and body weight may be recorded multiple times to evaluate any improvements. Adequate nutrition may prevent the development of pressure ulcers. More importantly a well balanced-high protein diet can be used in the management of pressure ulcers in the aspect of promoting healing if a pressure ulcer does develop (Ousey, 2005).

Use of Moisture-retentive Dressing

In the event that all preventative measures have failed, and a pressure ulcer does form, it is recommended that moisture-retentive dressings are used to encourage healing. Moist wound treatment has shown to be optimal in promoting reepithelialization. According to Thomas, Moist wound healing allows experimentally induced wounds to resurface up to 40% faster than <https://assignbuster.com/assessment-and-management-of-pressure-ulcers-nursing-interventions/>

air-exposed wounds” (Thomas, 2008, p. 246). There are now dressings, called occlusive dressings that were developed to maintain the moist environment. There are other benefits to using this treatment as wounds are further protected from infection and pain is reduced (Thomas, 2008).

The introduction of occlusive dressings as a primary treatment is beneficial. Several types of occlusive dressings may be used, such as polymer foams, hydrogels, hydrocolloids, alginates, and biomembranes. All of these have proven to be effective. Four out of five trials comparing hydrocolloid dressing with a moist gauze dressing demonstrated higher healing rates (Thomas, 2008, p 250). Effectiveness of treatment can be evaluated in the time needed for complete healing. Decrease in size and depth, reduced erythema , no exudates production, and increased collagen synthesis are all signs and symptoms indicating healing of pressure ulcers (Ousey, 2005).

Hyperbaric Oxygen Treatment

Hyperbaric oxygen (HBO) therapy for chronic wound care is a relatively new concept. Sometimes pressure sores take a prolonged period of time to heal. In HBO therapy, “ the patient intermittently breathes 100T% oxygen, while the pressure exerted on the body within the treatment chamber is raised to greater than 1 atmosphere absolute” (Hunter, Langemo, Anderson, Hanson, Thomson, 2010, p 116). Often chronic wounds take a longer duration to heal due to ischemic injury, and hyperbaric oxygen therapy directly addresses that. These specialized conditions are at the root of why hyperbaric oxygen therapy proves to be beneficial. In these chambers, the amount of oxygen availability is significant and increased atmospheric pressure causes oxygen exchange between the air and the tissues (Hunter et al., 2010). This regime <https://assignbuster.com/assessment-and-management-of-pressure-ulcers-nursing-interventions/>

involves effective management and treatment of pressure ulcers in the event a pressure ulcer does not heal.

Although not available at all facilities, hyperbaric oxygen therapy should be recognized as a treatment option for chronic pressure ulcers. Patients should be presented with the option if indicated. To ensure this alternative treatment is presented, it should become a standard requirement to document it. If this becomes the choice of therapy, it is necessary to evaluate the effectiveness of the treatment by looking for signs of ulcer healing. In one study, chronic wounds were monitored for an eight week time period with hyperbaric therapy. The results showed shrinking of wound size in all participants and even a 16% healing rate (Hunter et al, 2010). Similar standards would need to be implemented with therapy to ensure its efficacy to the individual patient. Hyperbaric oxygen treatment should not be mandatory, but recognized as an option when considering the patient goal of managing pressure ulcers.

Conclusion

Although pressure ulcers are a problem found in many healthcare facilities, it is a problem that has a wide range of solutions. Decubitus ulcers can negatively affect a client's quality of life and there are potential medical complications, including coma and death associated with this condition. Proper assessment and management of pressure ulcers is a reflection of quality of care. Evidence-based nursing interventions such as assessing a patient's risk using the Braden Scale, use of special pressure reducing mattresses, managing adequate nutrition the use of wet-dressings, and hyperbaric oxygen as treatments, have been proven to be effective and are <https://assignbuster.com/assessment-and-management-of-pressure-ulcers-nursing-interventions/>

all of great importance in improving patient care (Registered Nurses Association of Ontario , 2007). The goal of keeping patient's free of ulcers during hospitalization and proper management of pressure ulcers if one does develop, must be at the root of all tasks. Evidence Based guidelines must be established and disseminated throughout the United States, and practiced in order to reduce the frequency and improve the care surrounding pressure ulcers.