Pressure Reducing Devices Versus Other Interventions Reducing Pressure Ulcer Development
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Pressure ulcers have been an ongoing problem in the medical field for decades. It has been seen in many nursing areas, from older adult to neonatal medicine. It is defined as a “localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear” (Coleman, Susanne, et al., 2014). Pressure ulcers can be classified from a Category I, only presenting signs of redness in a particular area, to a Category IV, where fat, muscle, and even bone have been damaged or lost. Not only do these pose a strain on someone’s quality of life, but also the finances of healthcare facilities. Due to nurse workload, finding time to simply turn a patient to ensure their skin integrity, can be impossible. Posing the issue of nurse-to-patient ratio as a problem that contributes to pressure ulcer development.

The patients that are most likely to develop pressure ulcers are those that are extremely ill and/or immobile. This state of immobility can cause a whole host of issues in a severely ill or immobile patient including, but not limited to, muscle atrophy, swelling, redness, atelectasis, pulmonary embolism, deep vein thrombosis, etc. All of which can lead to even further complications in a hospitalized patient.

References

Overview:
1. Purpose of Study: The purpose of the study was to compare the usage of pressure reducing mattresses and pressure reducing overlays
2. Design: A Quasi experimental study that included patients in an ICU setting with patients being on a mechanical ventilation for more than 24 hours.
3. Sample: It included one hospital with multiple patients who were in an ICU setting on mechanical ventilation for more than 24 hours.

Results: The results revealed that a pressure reducing mattress reduced the number of pressure ulcers in the ICU patient population versus the overlay that was also provided.

Strength of the Study
Level of the Study: III
Quality of the Study: High

Clinical Significance:
The results of the study found that using a pressure reducing mattress versus the overlay helped to reduce the number of pressure ulcers in patients in an ICU on mechanical ventilation. The mattress had a greater cell capacity; meaning that there would be more of a difference in the shifting on the air versus the overlay having a smaller cell height that would have minimal air shifting. While the mattress and overlay were doing a lot of the shifting of the weight, there was also the standard protocol of repositioning the patient as well.
Pressure Ulcer Effect on Immobile Patients

**Overview:** Pressure Ulcer Effect on Older Immobile Population

**Purpose of Study:** Pressure ulcers have remained a persistent problem in the immobile population in health facilities and prevention has been evasive. The diversity of available support systems offers some options of choice, but a lack of direct comparison of performance in randomized controlled trials makes it difficult to determine which is superior. The primary endpoint of the study was development of PUs over the 30-day monitoring period.

**Design:** The design was patients 70 and older, PU free on enrollment, confined to be for more than 15 hours daily, reduced mobility and absent or minimal positioning ability, and Braden score of <15.

**Results:** The conclusion of the study found the APAMs to be superior to the VFM group for PUs prevention in elderly patients who were bedridden for more than 15 hours daily, severely dependent and at moderate to high risk of pressure ulcers (Sauvage et al, 2017). The study determined the risk for appearance of pressure ulcers was 7.57 times greater in the VFM group as compared to the APAM group (Sauvage et al, 2017).

**Clinical Significance:** There are recognized predisposing factors that contribute to the formation of PUs. Bluestein & Javaheri (2008) identify these as intrinsic and extrinsic factors. Intrinsic factors include things such as limited mobility, poor nutritional status, comorbidities, and aging skin. Extrinsic factors are friction, shear, and moisture. Age is an intrinsic factor that has significant bearing on development of PUs because it contributes to decreased mobility, and increased probability of comorbidities and a decreased rate of healing.

**PICOT Question:** In the immobile population, does the use of pressure reducing devices versus other nursing interventions reduce the occurrence of pressure ulcers?

Prevention has been the primary focus of pressure ulcer reduction in the healthcare industry. Pressure ulcers (PUs) also known as decubitus ulcers, pressure sores and bedsores are an unfortunately common condition encountered in both acute and long-term facilities, as well as home health settings. They are a significant cause of pain, suffering, morbidity and possible mortality in the patient population, affecting approximately 3 million adults annually in the United States alone. Despite being actively addressed over the past two decades, the prevalence rate for PUs has remained relatively constant while costs associated with their care have continued to increase.

**Recommendations:** One recommendation was to discontinue VFM and movement to mandatory use of APAMs. Another recommendation would be repositioning of patients every 2-4 hours performed by the staff. Continual monitoring of the patients would help to control any pain or areas being affected with pressure that is being applied due to lack of movement.

**Implications:** Patients who develop pressure ulcers can have other problems later on. The risk for infection becomes increased as well as the risk for the pressure ulcer becoming more serious. Many of the immobile population suffer these due to not being repositioned enough or as often as needed. Not having the proper interventions or techniques being used can be the primary cause for this.