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Preventing Pressure Ulcers in Adults: An Integrative Review

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Preventing Pressure Ulcers in Adults: An Integrative Review

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PATIENT CARE ISSUE

Background & Significance

- Pressure ulcers (PU) affect 1.3 million to 3 million adults in the United States¹.
- PU's are associated with decreased quality of life, impaired function, infection, poorer prognosis, and increased costs of care¹.
- PU's are one of the main risks that can impede a fast recovery in the healthcare setting².
- PU's are a preventable complication. It's important for nurses to promote skin integrity.
- Pressure ulcer preventions include: heel devices, sheepskins, foam body support, seat cushions, nutritional supplementation, repositioning, dressings, pads, creams, lotions, cleansers, and mattresses¹.

EVIDENCE-BASED PRACTICE QUESTION

In the adult population, does the use of alternative mattresses reduce the risk of pressure ulcers compared to standard hospital mattresses?

P – Adults
I – Alternative mattresses
C – Standard mattresses
O – Pressure ulcers

REGISTERED NURSE INTERVIEW

Interview conducted on October 12th, 2015 with a local hospital nurse manager in the burn center and enterostomal care unit.

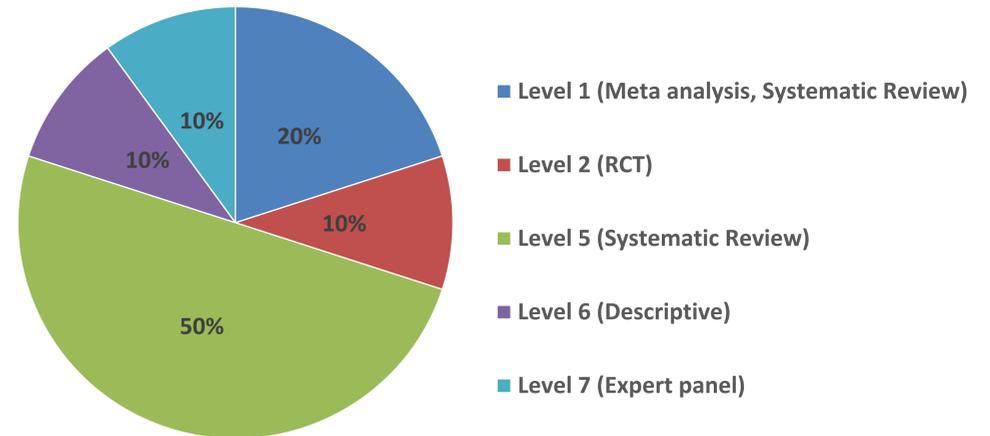
- Nurses are given the *Therapeutic Surface Guideline- Med-Surg & Advanced Care* to determine the use of alternative mattresses based upon an unstable or stable spine, Braden scale, and current skin condition.
- Common practice is based on the recommendations from the Wound Ostomy and Continence Nurses Society, Guidelines of Wound Healing Society, and the National Pressure Ulcer Advisory Panel.
- Currently replacing flat standard mattresses with low-level alternative mattresses.
- Further research should be conducted to understand pressure distribution on varying alternative mattresses.

METHODS

- Of the 313 articles that were reviewed, 18 were selected with 8 repeats for a total of 10 articles.
- Keywords searched:
 - *Elderly patient, facility acquire pressure ulcers, immobile, mattresses, nursing home, padding, physical activity, pressure ulcers, prevention, standard mattresses, and systematic review.*
- Databases used:
 - *CINHAL Plus with full text, The Cochrane database of Systematic Reviews, Medline, and PubMed.*
- Inclusion criteria:
 - Adult population at risk for pressure ulcer population, comparing alternative to standard mattresses, published within past 5 years, English articles with full text available.
- Exclusion criteria:
 - Any articles that did not coincide with the inclusion criteria.

RESULTS

Levels of Evidence



Population

- All 10 articles focused on adults.

Intervention

- An alternative mattress is any step up mattress from the standard mattress including overlays, low tech constant low pressure supports (gel-filled, fiber-filled, air-filled, water-filled, and bead-filled mattresses) and high tech support surfaces (air fluidized and low-air-loss beds)⁶.
- 7 articles had significant focus on alternative vs. standard mattresses.
- 3 articles discussed alternative vs. standard mattresses while concentrating on other interventions.

Comparison

- A standard mattress is the baseline mattress for the healthcare institution.
- All 10 articles compared alternative to standard hospital mattresses.

Outcome

- Of the 7 articles, 5 have significant evidence to support utilizing alternative mattresses over standard mattresses^{1,4-6,9}, while 1 article agreed but data was inconclusive¹¹. 1 article concluded there was not significant data to support alternative over standard mattresses¹⁰.
- Of the 3 articles, 2 stated there was significant evidence⁷⁻⁸ while 1 article concluded there was not significant data to support alternative vs. standard mattresses³.
- Alternative mattresses significantly reduce pressure ulcers compared to standard mattresses.

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- The Iowa Model of Evidence-Based Practice was the framework for the integrated review.
- Current practice is progressing towards the use of alternative mattresses over standard, based on the emerging evidence that alternative is more specific at preventing PU's.
- We would recommend further higher quality research on the prevention of PU's with mattresses.

LIMITATIONS

- Standard mattress is not clearly defined.
- Only 2 of the 10 articles were conducted in the United States.
- Classification of a PU varied in literature. Some counted grade 2 PU's while other studies included research with grade 1 PU's.

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