

Skin Care Of Critically Ill Patients: What Is The Level Of Evidence Available?

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Abstract: Skin care of critically ill patients plays an important role in prevention of infection, pressure ulcers as well as promotion of hygiene and comfort. The best method of translating evidence to skin care practice is through formulation of evidence based guidelines.

Objective: This study was designed to find the level of evidence available regarding skincare of critically ill patients.

Methods: Review of all literature available between 1995 and 2015 was done in relevant accessible databases, after defining the search area, terms, limits and search questions. Retrieved evidence was screened for relevance and appropriateness, extracted, synthesized, categorized and graded based on American Association of Critical Care Nurses (AACN) levels of evidence.

Results: The search yielded 242 potential sources of evidence. On screening, 104 of them were relevant and appropriate. On analysis, 55 of them provided answers to search questions. It was found that the level of evidence available in most of the sources was of Grade C, namely evidence extracted from qualitative studies, descriptive or correlational studies and integrative reviews.

Conclusion: The study indicates that nurses need to generate evidence of higher levels through randomized controlled trials and systematic reviews.

Key words: Clinical Nursing Practice Guidelines, Critically ill, Evidence level, Grading evidence, Skin care, Search strategy

I. Introduction

From time immemorial, nurses have strived to maintain the skin integrity of patients, knowing that skin is the first barrier against injury and infection. Diligent skin care takes on a meaning of great magnitude for critically ill patients in the context of poor nutrition, immunosuppression, poor resistance, immobility, impaired capillary permeability and potential generalized cellular hypoxia. [1] Providing appropriate skin care not only impacts skin integrity but also plays an important role in prevention of pressure ulcers and infection. Reducing pressure ulcers is a high priority for nurses. [2] Every patient and Nurse will definitely vouch for the effect of skin care on hygiene and comfort in addition to other therapeutic effects.

Nurses in critical care units spend most of their time in interventions to prevent complications related to break in skin integrity. Though many studies are done to improve practices of caring for critically ill patients, the results of the studies remain on the shelves of libraries or in databases. Very few studies are translated to evidence guidelines at the bedside. Studies show that many patients do not receive appropriate care and some receive unnecessary or harmful care. [3] Fortunately, Clinical Nursing Practice Guidelines come to the rescue of nurses by acting as vehicles for transformation of research findings into useful, practical, essential care at the bedside. The investigator found a dearth of evidence based guidelines in the critical care unit and designed a study to systematically search and retrieve available literature to formulate CNPG for skin care of critically ill patients. A need to understand the level of evidence available was an offshoot of the study.

II. Objective

The main objective of the study was to review the literature to find the levels of evidence available for skin care of critically ill patients. The study was designed to gather the pieces of evidence available, pool them according to levels of evidence to develop CNPG which could then be tested in the clinical arena.

III. Methods

The methodology of the study comprised of systematic integrative review of literature phased out in the following five stages

Stage I. Devising search strategy

Stage II. Searching & extracting evidence

Stage III. Identifying themes and categorizing the evidence

Stage IV. Grading evidence according to levels of evidence

Stage V. Formulating Clinical Nursing Practice Guidelines

3.1. Stage I. Devising search strategy

This stage consisted of the meticulous task of defining and listing search databases, sources, questions, terms, and limits.

3.1.1. Stage Ia. Search databases and sources

Review of all literature on skin care available in relevant accessible databases such as Ebscohost-CINAHL, Pubmed, Indmed, Ovid, ProQuest, COCHRANE and Google scholar was done systematically.

3.1.2. Stage Ib. Search questions

Eight search questions pertaining to frequency, method and techniques of skin assessment, recommended practice of skin care, prevention of bedsores and nursing interventions to prevent complications were formulated.

3.1.3. Stage Ic. Search terms

Terms used for search were skin care, importance of skin care, skin hygiene, critically ill, Intensive Care Unit, Critical Care unit, skin problems, skin conditions, skin infections, decubitis , pressure ulcers, skin assessment, frequency, skin care equipment, skin protection, risk factors, outcome, complications, adverse effects, precautions, nursing actions, interventions, recommendations.

3.1.4. Stage Id. Search limits

- Year - 1995- 2015
- Age - > 18 years
- Population - Critically ill / ICU /acute care
- Article - Concept, research
- Availability - Abstract /Full text
- Language - English

3.2. Stage II. Searching & extracting evidence

The process of extracting evidence was done systematically as given in the following algorithm finally yielding 102 relevant and appropriate sources.

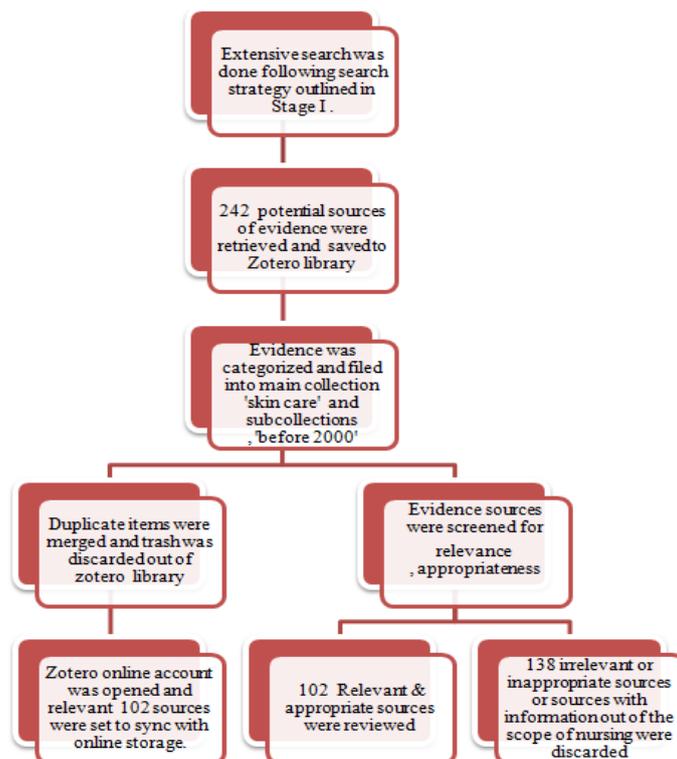


Figure.no.1. Algorithm depicting the flow of tasks in extraction of evidence

3.3. Stage III. Identifying themes and categorizing the evidence

The evidence extracted in Stage II was organized sequentially and analysed. As 2 of the identified sources were unavailable, finally 63 sources were saved under ‘skin care’ and 39 sources under ‘mobility’. On analysis, 55 of the sources provided answers to search questions. Eight themes and numerous sub themes were identified. Evidence under each theme was integrated and synthesized into concise statements.

3.4. Stage IV. Grading evidence according to levels of evidence

Evidence was graded as per American Association of Critical Care Nurses (AACN)’s ‘Levels of evidence’, a new evidence grading system with modification to incorporate existing guidelines.[4]

GRADE A	•Meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment, systematic reviews
GRADE B	•Well designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
GRADE C	•Qualitative studies, descriptive or correlational studies, integrative reviews, or randomized controlled trials with inconsistent results
GRADE D	•Peer-reviewed professional organizational standards, with clinical studies to support recommendations
GRADE E	•Theory-based evidence from expert opinion or multiple case reports
GRADE M	•Manufacturers’ recommendations only

Figure no.2. Modified levels of evidence grading of American Association of Critical Care Nurses

3.5. Stage V : Formulating Clinical Nursing Practice Guidelines

Clinical Nursing Practice guidelines for ‘Skin care’ was formulated under the following themes and subthemes.

Skin care problems and conditions among critically ill patients.

Skin assessment

Prevalent practice of skin care

Importance of skin care & impact of skin care

Skin care practice recommendations

Prevention of pressure ulcers

Complications & outcomes related to skin care

Nursing responsibilities towards skin care.

IV. Results

The results of this systematic review of literature revealed the various sources for evidence for skin care as well as the type of evidence. The study also yielded important information regarding skin care of critically ill patients.

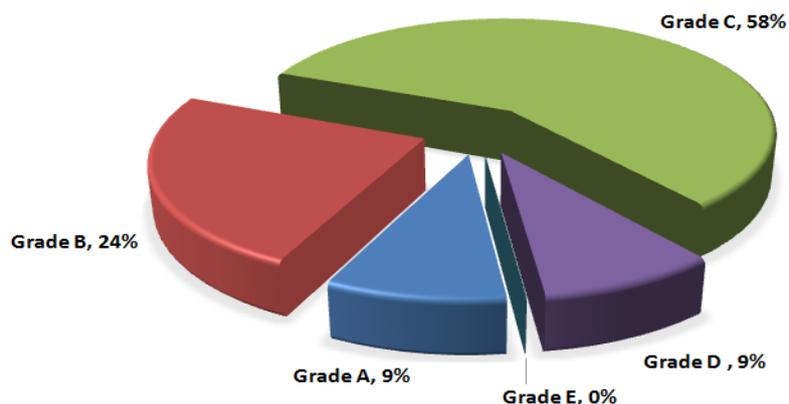


Figure no.3. Distribution of sources according to the level of evidence.

It was found that 58% of the evidence available belonging to 32 sources was of Grade C, namely evidence extracted from qualitative studies, descriptive or correlational studies, integrative reviews, or randomized controlled trials with inconsistent results. 24% of evidence extracted from 13 sources was of Grade B arising from well-designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment. 5 sources yielding 9% of the evidence belonged to Grade A consisting of meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment. Another 5 sources, comprising of 9% of evidence was of Grade D, namely, peer-reviewed professional organizational standards, with clinical studies to support recommendations.

V. Discussion

It is important to note the highest level of evidence, which is grade A was found in only 9% of the sources. There is a need for nurses to involve in generation of high levels of evidence by conducting systematic reviews with meta-analysis and meta synthesis. Nurses also need to involve in randomized controlled trials as evidence of Grade B was only 24%. Grade C evidence was found in 58% of the sources revealing that most of the nurses tend to conduct descriptive or qualitative studies. Nurses have always relied on theory based practice and instruction. It is disheartening to see that there were no sources belonging to evidence of Grade E.

VI. Conclusion

The huge endeavor to pool pieces of evidence under one basket to formulate practical evidence based guidelines to facilitate skin care of critically ill patients highlights the dearth of high quality evidence regarding skin care, one of the most important aspects of care of critically ill patients. It is also necessary for nurses to expand the nursing body of knowledge by conducting research on theories related to skin care of patients.

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