The effectiveness of educational programs in promoting nurses’ knowledge of pressure ulcers: a systematic review protocol

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Review question/objective

Are educational programs effective in promoting knowledge of pressure ulcers amongst nurses in all types of settings?

Background

A pressure ulcer is a severe skin complication affecting patients in all health-care settings worldwide. It has been estimated that approximately 20 to 25% of European patients have pressure ulcers.1 Pressure ulcers are considered to be quality indicators that may result in serious physical and emotional suffering, reducing quality of life, increasing healthcare costs, lengthening hospitalizations, and increasing morbidity rates.2 The Joint Commission on Accreditation of Healthcare Organization (JCAHO) (2012) includes prevention of pressure ulcers as one of the National Patient Safety Goals.3

The successful prevention of pressure ulcers requires a multidisciplinary approach. Nurses, as primary caregivers, play an important role in preventing and managing complications of pressure ulcers.4 Literature reveals that a lack of knowledge and skills in nurses can influence the implementation
and success of interventions to prevent pressure ulcers\textsuperscript{5,6} and may be associated with increased prevalence of pressure ulcers.\textsuperscript{7-9} Therefore, adequate knowledge and training for nurses is needed in preventing, detecting and planning appropriate care to prevent and treat pressure ulcers.

Several studies report that nurses’ knowledge of pressure ulcer prevention and management is significantly higher when nurses undergo educational programs.\textsuperscript{10-13} Therefore, it is suggested that continuing nursing education improves nurses’ knowledge and the standards of care related to preventing and caring for patients with pressure ulcers.\textsuperscript{14} Several educational programs have been suggested to improve nurses’ knowledge of pressure ulcer prevention and management, such as face-to-face lectures,\textsuperscript{14,15} lectures combined with photographs and videos,\textsuperscript{16} workshops,\textsuperscript{4,17} computer-based instruction,\textsuperscript{18} e-learning,\textsuperscript{19} and training courses.\textsuperscript{20} Altun & Zencirci (2011) evaluated the effects of an interactive lecture-based three-hour workshop and found that nurses’ knowledge of the management of pressure ulcers was significantly improved. Two studies found that face-to-face lecture programs could also improve nurses’ knowledge of pressure ulcers.\textsuperscript{14,16} In addition, e-learning programs are new strategies that have been developed in recent years to promote the knowledge and classification of pressure ulcers among nurses.\textsuperscript{19}

The outcome measures of the educational interventions described above mostly focus on nurses’ knowledge on the detection of pressure ulcers.\textsuperscript{4,14-15,17-18,20} Two studies used photographic teaching in determining differences in accuracy rates,\textsuperscript{16,19} but the results of the effects were not consistent. Furthermore, Beckman, et al (2008) demonstrated that nurses who underwent e-learning and lectures showed no significant differences in accuracy rates in determining stages on pressure ulcers.\textsuperscript{19} However, another study reported different results of the effects of e-learning programs.\textsuperscript{20} Some studies suggest that educational interventions have positive effects in improving nurses’ knowledge\textsuperscript{4,14-15,17-18} and ability to differentiate stages in pressure ulcers.\textsuperscript{16}

In summary, most of the studies suggest that educational programs have positive effects in improving nurses’ knowledge of pressure ulcers, but these studies used different types of educational interventions and different content in their teaching materials, and focused on different outcome measures. There is no systematic review published related to the effectiveness of educational programs in promoting nurses’ knowledge of pressure ulcers. Therefore, this review aims to identify the best available evidence regarding the effectiveness of educational programs on knowledge of pressure ulcers amongst registered nurses in all types of clinical settings.

**Keywords**

nurs*; education*; Pressure ulcer; knowledge; risk and prevention; cost -effectiveness

**Inclusion criteria**

**Types of participants**

This review will consider studies that include registered nurses in all types of hospitals or long-term care facilities.
Types of intervention(s)/phenomena of interest

This review will consider studies that evaluate educational programs designed to improve nurses’ knowledge of pressure ulcers.

Types of outcomes

This review will consider studies that include the following outcome measures:

The primary outcome is the nurses’ level of knowledge of pressure ulcer prevention and treatment.

The secondary outcome includes cost-effectiveness (direct and indirect) of educational programs.

Types of studies

This review will consider randomized controlled trials (RCT). In the absence of RCTs, other research designs such as non-randomized controlled trials, and before and after studies will be considered for inclusion. Observational, cohort, case-control, and qualitative studies will be excluded.

Search strategy

The search strategy will incorporate both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of MEDLINE and CINAHL will be undertaken. This is followed by an analysis of the text words contained in the title, abstract and keyword, and of the index terms used to describe article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Lastly, the reference list of all identified reports and articles will be searched for additional studies. Studies published in English and Chinese will be considered for inclusion in this review. Studies up to 2012 will be considered for inclusion in this review.

The databases to be searched include:

PubMed, CINAHL, Cochrane Library, JBI, Ovid full text, and EMBASE.

The Chinese databases will include:

(1) http://www.ceps.com.tw (Chinese Electronic Periodical Services)

(2) http://www.cetd.com.tw (Chinese Electronic Theses and Dissertations Service)

(3) http://www.ncl.edu.tw/journal/journal_docu01.htm (National Central Library)

The review will search for unpublished studies in the following databases:

(1) http://mednar.com/mednar/

(2) http://www.proquest.com/en-US/catalogs/databases/detail/pqdt.shtmll
Initial keywords to be used will be:
nurs*, education*, Pressure ulcer, knowledge, risk and prevention, cost -effectiveness

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardised critical appraisal instruments from the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix V). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Data collection

Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-MAStARI (Appendix VI). The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives.

Data synthesis

Quantitative data will, where possible, be pooled in statistical meta-analysis using JBI-MAStARI. All results will be subject to double data entry. Effect sizes expressed as odds ratio (for categorical data) and weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed statistically using the standard Chi-square. Where statistical pooling is not possible the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

Conflicts of interest

None

Acknowledgements

None
References


Appendix I: Appraisal instruments

MAStARI Appraisal instrument

JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial

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<thead>
<tr>
<th>Reviewer</th>
<th>Date</th>
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<tbody>
<tr>
<td>Author</td>
<td>Year</td>
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<td>Record Number</td>
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<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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<tbody>
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<td>1.</td>
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<td>Was the assignment to treatment groups truly random?</td>
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<td>Were participants blinded to treatment allocation?</td>
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<td>Was allocation to treatment groups concealed from the allocator?</td>
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<td>Were the outcomes of people who withdrew described and included in the analysis?</td>
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<td>Were those assessing outcomes blind to the treatment allocation?</td>
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<td>Were the control and treatment groups comparable at entry?</td>
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<td>Were groups treated identically other than for the named interventions</td>
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<td>Were outcomes measured in the same way for all groups?</td>
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<td>9.</td>
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<td>Were outcomes measured in a reliable way?</td>
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<td>10.</td>
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<td>Was appropriate statistical analysis used?</td>
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Overall appraisal: Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)
__________________________________________________________________________
__________________________________________________________________________
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Appendix II: Data extraction instruments

MAStARI data extraction instrument

### JBI Data Extraction Form for Experimental / Observational Studies

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<thead>
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<tr>
<td>Journal</td>
<td>Record Number</td>
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</tbody>
</table>

#### Study Method

- [ ] RCT
- [ ] Quasi-RCT
- [ ] Longitudinal
- [ ] Retrospective
- [ ] Observational
- [ ] Other

#### Participants

**Setting**

**Population**

#### Sample size

- Group A
- Group B

#### Interventions

**Intervention A**

**Intervention B**

#### Authors Conclusions:

- 
- 
- 

#### Reviewers Conclusions:

- 
- 
-