Effectiveness of primary nursing in the care and satisfaction of adult inpatients: a systematic review protocol

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Review objective: The objective is to identify the best available evidence on the effectiveness of primary nursing in the care and satisfaction of adult inpatients.

Keywords Patient care; patient-related outcome; patient satisfaction; primary nursing; quality of nursing care

Background

Primary nursing is a method of nursing care delivery that evolved in the 1970s.¹ Manthey² presented primary nursing as the solution to the fragmentation of care and lack of accountability inherent in team nursing. The foundation of primary nursing is a client-focused care-delivery system, in which nurses manage the progress of a client through an episode of care in a nursing unit.³ From the time at which the concept was first introduced, numerous reports have proclaimed its benefit as a modality of care.⁴,⁵ When compared with functional nursing that divides work into assigned tasks or team nursing in which a small group of nurses work together guided by a team leader, primary nursing is believed to result in higher quality of nursing care,⁶–⁹ greater patient satisfaction¹⁰,¹¹ and improved job satisfaction of nurses,⁸ and is considered to be more cost-effective.¹²

Despite extensive research demonstrating that primary nursing has the potential to improve outcomes, gaps remain in literature.³ To date, no systematic evaluation of evidence has been performed. Most available evidence is based on anecdotal or descriptive reports rather than quantitative data.⁴ Although several studies demonstrate the positive impact of primary nursing in perceived performance and quality-of-care indicators,¹³,¹⁴ other studies do not confirm these expected indicators.¹⁵–¹⁷ For example Archibong et al.¹³ demonstrated improvement in quality of care using primary nursing, particularly in the elements that address the needs of the individual patient. In contrast, Kangas et al.¹⁷ compared the satisfaction of patients and nurses with care in three distinct care-delivery models (team nursing, primary nursing and case management) and found no significant differences in outcomes. Nissen et al.¹⁵ measured the effects of primary nursing on the process and outcome aspects of quality of care in an 850-bed Dutch hospital using Lacko’s scale. They concluded that primary nursing is only slightly superior to traditional care systems, as far as quality of care is concerned.

A study⁴ from a health sciences institute in Melbourne, Australia, compared primary nursing with the traditional functional nursing-care model. Two comparable medical units were selected; one utilized a functional nursing-care system, whereas the other employed a system of primary nursing that was first introduced three months prior to the commencement of the study. Researchers administered an 11-item patient satisfaction questionnaire on patients on the day of discharge. Patients in the primary nursing group (n = 28) answered all items more positively than those in the functional nursing group (n = 31), and the difference was statistically significant (p < 0.05) on six items. A detailed examination of the significantly different items showed that nurses on the primary nursing unit displayed greater understanding of the patient, showed more concern and communicated more with the patient’s family. In

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addition, they were more likely to provide information to the patient regarding his/her illness or condition, tended to contribute more to the positive experiences of hospitalization, and gave greater consideration to discharge planning. From the perspectives of registered nurses, primary nursing has been found to make the work more meaningful, increase job satisfaction and enable the use of full potential. Primary nursing has also been assumed to engage, oversee and evaluate the care process. According to Korhonen et al. the challenges in care planning consist of matching the care-delivery model with the needs of healthcare organizations while not losing the needs of the patients. The literature indicates that regardless of its development more than 40 years ago, primary nursing has been carried out unchanged, and few efforts to revise this care-delivery model have been reported. Despite the widespread acceptance of primary nursing, few studies have provided evidence that primary nursing is superior to functional, team or case-method care delivery systems. Most evidence is mainly based on anecdotal or descriptive reports, rather than quantitative data derived from research studies that employ adequate controls, objective measurement of variables and statistical analyses of predicted outcomes.

As initial search in the Cochrane Database of Systematic Review and the JBI Database of Systematic Review and Implementation Reports indicated that no systematic review on this topic currently exist, or is in progress at this time. This study will aim to identify the best available evidence on the effectiveness of primary nursing on patient care and satisfaction. Patient care and satisfaction will be measured by patient outcomes in relation to patient satisfaction, patient care and quality of nursing care.

**Inclusion criteria**

**Types of participants**
This review will consider studies that include adult inpatients (aged 18 or above).

**Types of intervention(s)**
This review will consider studies that evaluate the effect of primary nursing. For the purpose of the study, primary nursing is defined as one nurse assuming responsibility and accountability for the nursing care of a small group of patients from the time of admission to the time of discharge. In primary nursing, the nurse plans the care with the patient and delegates the responsibility of the care to associate nurses when he/she is off duty. The comparator group for the review will be control wards/units where primary nursing is not used. The comparator will be utilization of other nursing care models.

**Outcomes**
This review will consider studies that include the following outcome measures: patient care measured by relevant surveys and questionnaires on patient satisfaction and quality of nursing care. Data collection tools that have been used in the initial literature search have included questionnaires for collection of responses on patient satisfaction and scales for quality of health care such as QUALPACS (Quality of Patient Care Scale). Quality of nursing care will be measured by scores on the QUALPACS, Lacko’s scale and other similar scales and tools.

**Types of studies**
This review will consider both experimental and epidemiological study designs, including randomized controlled trials, non-randomized controlled trials, quasi-experimental, before and after studies, prospective and retrospective cohort studies, case control studies and analytical cross-sectional studies for inclusion. This review will also consider descriptive epidemiological study designs, including case series, individual case reports and descriptive cross-sectional studies for inclusion.

**Search strategy**
The search strategy aims to find 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 followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Third, the reference list of all identified reports and articles will be searched for additional studies.
The databases to be searched include: CINAHL, MEDLINE, Embase and PsycINFO.

All studies identified during the database search will be assessed for relevance to the review based on information via the title, abstract and description by two independent reviewers. The full article will be retrieved for all those that appear to meet the inclusion criteria. A search of Google Scholar and MECLAR will be undertaken to further ensure that all relevant studies have been identified. Only studies published as peer-reviewed papers will be included: abstracts, conference proceedings and letters and others will be excluded. Studies published in English, Danish, Swedish and Norwegian will be considered for inclusion in this review. Databases will be searched from their inception to present. Initial keywords to be used will be primary nursing, quality of nursing care, patient care, patient satisfaction and patient-related outcome.

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

Data extraction
Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-MAStARI (Appendix II). The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives. The authors of primary studies will be contacted, in case there is incomplete information.

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 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 and also explored using subgroup analyses based on the different study designs included in this review. In cases in which statistical pooling is not possible the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

References
Appendix I: Appraisal instruments

MAStARI appraisal instrument

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

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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</thead>
<tbody>
<tr>
<td>1. Was the assignment to treatment groups truly random?</td>
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<tr>
<td>2. Were participants blinded to treatment allocation?</td>
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<tr>
<td>3. Was allocation to treatment groups concealed from the allocator?</td>
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<tr>
<td>4. Were the outcomes of people who withdrew described and included in the analysis?</td>
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<tr>
<td>5. Were those assessing outcomes blind to the treatment allocation?</td>
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<td>6. Were the control and treatment groups comparable at entry?</td>
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<td>7. Were groups treated identically other than for the named interventions</td>
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<td>8. Were outcomes measured in the same way for all groups?</td>
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<td>9. Were outcomes measured in a reliable way?</td>
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<tr>
<td>10. Was appropriate statistical analysis used?</td>
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Overall appraisal: Include □ Exclude □ Seek further info. □

Comments (Including reason for exclusion)

________________________________________________________________________
# JBI Critical Appraisal Checklist for Descriptive / Case Series

**Reviewer**  
**Date**  

**Author**  
**Year**  
**Record Number**  

<table>
<thead>
<tr>
<th>1. Was study based on a random or pseudo-random sample?</th>
<th>Yes ☐</th>
<th>No ☐</th>
<th>Unclear ☐</th>
<th>Not Applicable ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Were the criteria for inclusion in the sample clearly defined?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>3. Were confounding factors identified and strategies to deal with them stated?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>4. Were outcomes assessed using objective criteria?</td>
<td>☐</td>
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<td>☐</td>
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<td>5. If comparisons are being made, was there sufficient descriptions of the groups?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>6. Was follow up carried out over a sufficient time period?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>7. Were the outcomes of people who withdrew described and included in the analysis?</td>
<td>☐</td>
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<td>8. Were outcomes measured in a reliable way?</td>
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<td>9. 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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### JBI Critical Appraisal Checklist for Comparable Cohort/Case Control

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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<tbody>
<tr>
<td>1. Is sample representative of patients in the population as a whole?</td>
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<td>2. Are the patients at a similar point in the course of their condition/illness?</td>
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<td>3. Has bias been minimised in relation to selection of cases and controls?</td>
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<tr>
<td>4. Are confounding factors identified and strategies to deal with them stated?</td>
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<td>5. Are outcomes assessed using objective criteria?</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**

**Reviewer**  Date  
**Author**  Year  
**Journal**  Record Number  

**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:**
## Study results

### Dichotomous data

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention ( ) number / total number</th>
<th>Intervention ( ) number / total number</th>
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</table>

### Continuous data

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention ( ) number / total number</th>
<th>Intervention ( ) number / total number</th>
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