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How relevant is the Cochrane Database of Systematic Reviews to nursing care?

ABSTRACT

Background

Barriers obstructing evidence-based nursing have been explored in many countries. Lack of resources and evidence has been noted as one of these barriers.

Aim

To identify nursing care-related systematic reviews published in the Cochrane Database of Systematic Reviews from 1996 until 2009.

Method

A broad search strategy identified titles of reviews and protocols that focused on nursing care in the Cochrane Database of Systematic Reviews. The abstract of each title was examined and predetermined data were collected and analysed.

Results

1249 titles out of a possible 6244 records were identified as being relevant to nursing care. Most of them focused on newborn and adult populations and related to comparing one intervention with another, and management strategies. The most common nursing specialties represented were internal medicine (34%) and mother and child care (25%).

Conclusion

Twenty one percent of reviews published in the Cochrane Database of Systematic Reviews are of direct interest to those involved in nursing care however their relevance was not always obvious.

Keywords

Cochrane, evidence based nursing, nurses, nursing care, systematic review

INTRODUCTION

The history of evidence-based nursing is closely related to the evolution of evidence-based medicine. The most frequently used definition of evidence-based medicine is from Sackett¹, one of the pioneers in this area: “Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients”. The practice of evidence-based medicine relates to integrating individual clinical expertise with the best available external clinical evidence from systematic research. Such an approach to decision-making is in contrast to opinion-based decision-making that is based primarily on values and resources.²

This definition of evidence-based medicine can be applied to all other health care disciplines. Applied to nursing it becomes: “integrating the best available research evidence with information about patient preferences, nurses’ skill level, and available resources to make decisions about patient care”.

Many authors from different countries and contexts have explored barriers obstructing evidence-based nursing. They include time factors, limited access to the literature, lack of confidence in the staff’s ability to critically evaluate empirical research, limited interest in scientific inquiry, a work environment that does not support or value evidence-based practice, inadequate research resources, lack of evidence and limited authority or power to change practice based on research findings.³⁻⁹

The laborious implementation and embedding of evidence-based information into nursing practice is at least partially explainable by the limited access for nurses to high quality information resources, however the increased emphasis on efficiency, controlling costs and quality in health care delivery systems is rapidly changing, together with the advancement of science and technology thereby increasing the need for reliable, up-to-date evidence about effective nursing interventions.

One of the most dominant sources of evidence about the effectiveness of different types of interventions is the Cochrane Database of Systematic Reviews housed in the Cochrane Library. The library offers all health care providers, including nurses, the best quantitative evidence currently available for clinical decision making in the form of systematic reviews (SRs) in order to provide the most consistent care for patients (visit: www.cochrane.org), however the nursing care content of the Cochrane Library is not clearly identifiable.

In 2006 an international group of nurses associated with the Joanna Briggs Institute (visit: www.joannabriggs.edu.au) discussed the possibility of establishing a nursing care entity within the Cochrane Collaboration. Following broad support to pursue this further, a concept paper was developed with the assistance of the Australasian Cochrane Centre which formed part of a funding submission to the Australian Government Department of Health and Ageing to provide support during the registration process. A preliminary proposal for a Nursing Care Entity was developed and endorsed by the Directors and members of the Joanna Briggs Institute Collaborating Centres at a meeting in Durban, South Africa in August 2006.¹⁰

The preliminary proposal was also sent to members of the Cochrane Collaboration involved in nursing care. In 2007 following substantial revision an application to establish a Cochrane Nursing Care Network was submitted to the Cochrane Collaboration's Monitoring and Registration Group.¹⁰

Throughout 2008, the sponsors of the application liaised with the Monitoring and Registration Group and members of the Cochrane Collaboration Steering Group to address various comments and concerns raised about the application itself plus broader issues concerning the status of profession-based Fields. In February 2009, a revised application and letters of support were submitted to the Monitoring and Registration Group. The Cochrane Nursing Care Network was officially registered with the Cochrane Collaboration on 25 March 2009. In March 2010 it was renamed the Cochrane Nursing Care Field (CNCF) in order to avoid confusion between the role of Networks and Fields within the Collaboration.¹⁰

Almost 10 years ago, Jennings and Loan¹¹ concluded that nurses might underestimate the implications of the evidence-based movement. Today, the increasing international engagement of nurses, and others associated with nursing care, offers much potential for advancing the aims of the CNCF and is contributing to the preparation of Cochrane SRs and their uptake into nursing practice.

A preliminary study was undertaken to determine how useful the contents of the current Cochrane Database of Systematic Reviews were to those involved in nursing care since there was some perceptions that the contents of the database were not relevant to this population.

AIM

To identify and describe the characteristics of nursing-related SRs published in the Cochrane Database of Systematic Reviews since the database became available on the World Wide Web (1996) until 2009.

METHODS

A broad search strategy using MeSH terms to identify SRs relevant to nursing care that were published in the Cochrane Database of Systematic Reviews was developed and subsequently ran in December 2009. The terms used were: nurs* AND (care OR prevention OR clinical OR education). All abstracts were examined by two of the authors (BJCG and PC) independently and based on the information provided in the abstract the following information was extracted using a predeveloped spreadsheet:

- Age of **P**opulation: either one or multiple (if applicable) of: newborn (0-1 years), children (1-18 y), adults (19-65 y), elderly (65+).
- **I**ntervention: this was assessed in two phases:
Phase 1: Kind of intervention. Due to the large variation in interventions, the authors developed the following categories:
 1. Medication: all pharmaceutical products
 2. Non Pharmaceuticals: e.g aromatherapy, nutritional products, devices, acupuncture
 3. Techniques: e.g. ways of administrating or performing

4. Education: methods of education, information, training
5. Management: policies, tailoring interventions, interventions to promote adoption

Phase 2: one of the following:

1. Prevention
 2. Education
 3. Care
 4. Treatment
- **C**omparison: Did the review contain a comparison - yes/no
 - **O**utcome: the authors defined eight outcome categories:
 1. Clinical efficiency/efficacy: including morbidity, mortality, other benefits
 2. Safety: harms, adverse events
 3. Quality of Life
 4. Use of health care facilities/providers/products
 5. Cost
 6. Adherence
 7. Knowledge
 8. Miscellaneous: outcomes that did not fit in to the seven above
 - **S**etting: hospital, nursing home, home care, primary care, all care (e.g. combination), not mentioned.
 - Nurse specialty: e.g. intensive care, oncology, pediatric, geriatric
 - Authors' conclusion: no or limited evidence versus useful evidence for practice?
 - The need for further research according to the authors: not needed versus needed
 - Latest update
 - Number of included studies
 - Relevant data on the authors: type of institution, and country of origin.

The presence of a meta analysis was also determined for each review by examining the full text version.

The two authors then met with the last author and promoter of this research (MG) to compare results, discuss differences or interpretations and to clean the data. Results of each of the above fields were then analyzed and presented graphically.

RESULTS

Basic Demographics

The search was undertaken at the end of December 2009, 1249 records out of a possible 6244 records were identified of which 52.4% were SRs with a meta-analysis, 26.8% were SRs without a meta-analysis and 19.5% were protocols. In this period of fourteen years 0.9% (n=12) SRs were withdrawn and 0.4% (n=6) SRs appeared in the list of titles but could not be opened in the database. Figure 1 depicts the evolution of the number of new nursing care-relevant publications by year since the inception of the Cochrane Library. It shows that nursing-related SRs have grown from 5.7% (n=2) in 1996 to 21.4% (n=1249) in 2009.

Figure 1

Since 2003 the number of nursing-related SRs containing a meta-analysis has grown fast from 25 to 126 (Figure 2). Withdrawn SRs (n=12) and unknown SRs (n=6) were excluded from any further analysis. Unknown SRs were titles of SRs that appeared in the list of results, but were impossible to retrieve an abstract nor a full text version.

Figure 2

The mean number of included studies within SRs was 11 (median 7; SD \pm 16; Range 0-131).

The PICOS-elements

Half of all the abstracts (51%) contained all PICO-elements (Figure 3). In 66% of the SRs both an intervention (I) and a comparison (C) was mentioned.

Figure 3: PICOS-elements mentioned in abstract

Only 16.7% of the abstracts mentioned a setting. The most common settings were hospitals (37%), all settings (27%) and the community (21%).

Over 80% of abstracts provided information about the age of the population of interest. The most studied population were adults (between 19 and 64 years) representing 34%. The second largest represented population were newborns (9%), defined as between 0 and 1 year. Approximately only 6% of SRs were specifically focused on the elderly (65+ years).

Figure 4: Studied Populations According to Age

For phase 1 of classifying the interventions, over 42% focussed on techniques, 25% on medication, 18% on management, 9% on non-pharmaceuticals and 3% on education. In phase 2 the most common nursing fields were treatment (45%) and care (43%). Several SRs covered more than one field and were therefore included in each relevant field. The combinations of care and cure, prevention and care, education and prevention were very common.

1489 outcomes were specifically mentioned in the 1231 SRs and were classified in eight outcome categories. Data on outcomes was predominantly focused on clinical efficiency (61.2%), followed by safety (18.8%). Results of the remaining categories were all under 10%. Outcome and intervention classification results are summarised in Table 1 below.

Table 1: Intervention and Outcome Classifications

Remaining Fields

The information contained in the authors conclusions varied. More than a third (36%) of the nursing-related SRs in the Cochrane Database of Systematic Reviews contained useful evidence for nursing practice (as opposed to concluding there was no or limited evidence). More than half (57%) of authors recommended further study was needed.

If explicitly stated in the abstract the specialty was extracted. If this information was not provided the authors grouped the review into a specialty based on the pathology of the patients and/or the intervention(s) as mentioned in the PICO. A wide range of nursing specialties were covered and due to this variation the authors decided to categorise the specialties into nine broader groups for ease of viewing. For example anaesthesiology, traumatology and all kinds of surgery were grouped into one speciality named surgery and specialties like cardiology, dermatology, endocrinology, gastroenterology, haematology, non-surgical oncology were all grouped in internal medicine (classifications outlined in Table 2). The most popular categories were internal medicine (34%) and mother and child care (25%). Geriatrics was only represented in 2.5% of abstracts. (Figure 5)

Figure 5
Nursing Specialties covered in Cochrane Systematic Review Abstracts

Table 2: Nursing Specialties Classifications

Finally in terms of the characteristics of the authors of the SRs, the only information that could be examined related to the place of work and the country of origin. Universities and general hospitals were the most common places of work of the authors. There were 7 countries, all Westernized, out of a possible 56 that produced 80% of all nursing-related SRs. They were: United Kingdom (UK) (42.6%), Australia (15.5%), Canada (9.3%), United States of America (USA) (5.4%), Netherlands (3.5%), Ireland (2%) and Germany (1.8%). Thirty percent of the 56 countries that produced SRs are Westernized. The non-Westernized countries (70%) produced 10.7% of all nursing-related SRs.

DISCUSSION

The aim of this study was to investigate how useful the contents of the current Cochrane Database of Systematic Reviews are to those involved in nursing care. As of late 2009, 21% of the SRs published are of direct interest for nurses and those involved in nursing care. The number of SRs continues to increase annually and reviews are becoming more complex (i.e. with a meta-analysis).

Based on the information available in the abstract, the common characteristics of these SRs were:

- They predominantly focused on internal medicine and mother and child care topics
- The setting varied but were mainly undertaken in hospitals
- Most focused on adults (19 - 64 years of age)
- The majority focussed on techniques associated with an intervention and measured outcomes related to clinical efficiency/efficacy
- Most advocated for further research to be undertaken and approximately a third contained recommendations that could be used in practice
- Most of the authors of the reviews worked in university or hospital settings and were from Westernized Countries

There is a need for more primary studies to be conducted in nursing care such as those that focus on care in order to produce SRs and meta-analyses relevant to nurses. Nursing care however is difficult to assess in the typical randomised controlled trial (RCT) design commonly required for Cochrane SRs. This study collected data exclusively from the Cochrane Database of Systematic Reviews and as such focussed solely on reviews of effects. Nursing care is complex and although reviews of this nature are useful, they are not the only type of review needed. Questions pertaining to the experience of a patient and the appropriateness of providing treatment and care are just as important in nursing care. These questions cannot be answered by RCTs and require analysis of different types of evidence which was not covered here.

It should be mentioned that this study relied only on information extracted from the abstract of the review. The authors are aware that this may have limitations due to the word limit applied to abstracts which may have caused important information to be left out. In some cases the authors of the original review may not be involved in writing the abstract, which may mean the interpretation, or accuracy of the abstract may be compromised. A larger scale study that examines the full reviews instead of abstracts and that collects additional information would be useful to confirm the findings of this preliminary study.

Another limitation related to the search strategy. The researchers tested a number of different search strategies and the results always varied. Initially the search was restricted to title and abstract but it obtained no or very limited results. The term "nurse" or "nursing" was never mentioned in the title and very often not explicitly mentioned either in the abstract or the full text. This meant that most of the time the researchers had to interpret whether the systematic review was relevant to nurses and if so, to what nursing specialty which is open to criticism. The final search used all text fields in the Cochrane Database of Systematic Reviews. This method yielded the most satisfactory results for all researchers involved.

In conclusion this study suggests that the perceptions some people have that the contents of the Cochrane Database of Systematic Reviews are not relevant to non-medical professions such as nursing are incorrect, with nearly a quarter of reviews being of some relevance to nursing care. Although there are reviews available they can be hard to locate and enhancing the visibility of the Cochrane Library in general and the visibility of nursing-related topics within it will increase its use by nurses. The CNCF is ideally situated to facilitate this work since its primary mission is to increase the uptake of the Cochrane Library by nurses and other involved in delivering, leading or researching nursing care.

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