

# Strategies for the construction of a critical review of the literature

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This paper describes the process by which a literature review is conducted. It begins by identifying the purpose of a literature review, and then explores how key words can be used to define the scope of the review, how the review can be organized into themes and how conclusions can be drawn from the literature to inform further studies. Examples from nursing and health care are provided to illustrate the processes described. © 2001 Harcourt Publishers Ltd

## Introduction

Conducting and constructing a critical review of the literature can be one of the most challenging aspects of the research process, and one with which many researchers and students have experienced difficulty. As nurses and other health care disciplines strive to ensure that their practice is evidence-based and rigorous, assessors and consumers of research are starting to expect a more systematic approach to reviewing literature. The purpose of this paper is to assist in this process by identifying the processes involved in conducting a critical review of literature. This should be of value to nurse educators and practitioners involved in either courses or practice development in which a critical review of literature is an important component of a research project, or other assignments in which a critical analysis of literature is required. The purpose of a literature review is first outlined. This is followed by a consideration of how the scope of the review should be defined so that appropriate literature can be identified and selected using exclusion and inclusion criteria. Constructing the review into different themes is then discussed, followed by drawing conclusions from the literature in order to inform a future study.

## Purpose of a literature review

The overall purpose of a literature review is to critically appraise and synthesize the current state of knowledge relating to the topic under investigation, as a means of identifying gaps in the knowledge that a new study would seek to address. Hart (1998) proposes that a literature review is fundamental to the success of any academic research in that it ensures the feasibility of researching the chosen topic before the study actually commences. This, of course, may conflict with some qualitative approaches, particularly grounded theory, which advocates that researchers should refrain from reviewing the literature until some of the post-analytic phases. This, it is postulated, is to avoid the prospect of contaminating the researcher's attempts at discovery and their analytic abstraction of the data with unrecognized assumptions and perspectives acquired via the literature review (Straus & Corbin 1990, Glaser 1992). In general terms though, it is accepted that, in order to establish the clear purpose of a study, some recourse to the literature prior to the development of a proposal and data collection is considered to be good practice, and a wise investment of time and effort. One of the key elements of a high quality review of the

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literature is a well-planned search and selection strategy. This should make clear to the researcher and the reader how they have searched and why they have selected certain items of literature over others. Such a strategy is particularly important for systematic reviews. Polit and Hungler (1991) identify four important phases in the conduct of a literature review. These, however, exclude the important step of applying the literature to the study in question, as advocated by Clifford et al. (1997). Thus, a combination of these phases will include:

- Defining the scope of the review
- Identifying the sources of relevant information
- Reviewing the literature
- Writing the review
- Applying the literature to the proposed study.

### Defining the scope of the review

Prior to commencing the search for relevant literature, consideration should be given to the scope of the search. Will the search, for example, only include empirical works or should theoretical works that focus upon the nature of the discourses, conceptual frameworks and models specific to the study phenomenon also be considered? Another important decision to consider is whether the review will concentrate on published works in scholarly journals only, or whether what is termed the 'grey literature', such as commissioned reports, organizational projects and conference papers will be included (Moloney & Maggs 1999). Several frameworks for searching the literature are available and can be useful tools for the reviewer at this stage (Burnard 1993, Burns & Grove 1993, Hart 1998).

### Identifying and selecting the sources of relevant information

Conducting a literature review can often involve the reviewer spending considerable time in a learning centre conducting manual and computerized searches (Clifford et al. 1997). Guidance for the novice reviewer is generally available from librarians, and can

significantly reduce the time taken to search for information. Sources of information available in learning centres generally include:

- Abstracts and indexes for manual searching
- Microfiche for manual searching and reading
- Compact disc read-only memory systems (CD-ROM).

When using a CD-ROM facility to search the literature, access will be gained to a vast array of worldwide literature. Using key words related to the research problem will help to narrow the search and help to identify relevant sources of information. One should remember, however, that the worldwide literature contained within the CD-ROM contains key words used in connection with a United Kingdom problem that may not reveal sources of information that use other terms to refer to the same phenomenon; e.g. collaborative care (UK) and shared governance (USA), or 'learning disabilities' (UK) and 'mental deficiency' (USA). There are a variety of CD-ROM databases related to health care available to the reviewer. These include:

- The UK Cochrane Centre: <http://www.cochrane.co.uk>
- Bandolier: [www.ebandolier.com](http://www.ebandolier.com)
- Centre for Reviews and Dissemination: [www.york.ac.uk/inst/crd/welcome.html](http://www.york.ac.uk/inst/crd/welcome.html)
- Centre for Evidence-based Medicine: <http://cebm.jr2.ox.ac.uk/>
- NMAP: <http://nmap.ac.uk>
- RCN Nursing Research and Development Co-ordinating Centre: [www.man.ac.uk/rcn](http://www.man.ac.uk/rcn)
- ENB: [www.enb.org.uk](http://www.enb.org.uk)
- Health Technology Assessment: [www.hta.nhsweb.nhs.uk](http://www.hta.nhsweb.nhs.uk)

Many learning centres provide written guidelines to assist people in using CD-ROM facilities effectively, and the majority of electronic databases have integral help indexes.

At this stage, reviewers may be faced with two possibilities: too little or too much literature. In the case of too little literature emerging from the initial search, the reviewer may need to broaden the search to include different key words reflecting a wider area of interest. This may involve examining how the topic of interest has been viewed, or investigated in other subject-areas or disciplines

and applying conclusions, methods or findings to the proposed study. An example of this would be a researcher who wishes to review the nature and scope of nurse consultant roles. Since these are new roles in nursing, there is unlikely to be much written on the subject in the nursing discipline. The concept of consultancy, however, is not new. As well as being used in medicine, consultants can be found in other disciplines such as business and engineering. A broader search might therefore include key words such as 'consultant', 'consultancy', 'consultancy in business', and 'consultancy in medicine'. This should provide sufficient background in the use of consultancy for the reviewer to consider the application of the concept to nursing. The self-evident gap in knowledge then becomes the justification for conducting empirical research.

In the case of a high volume of associated literature, the reviewer may attempt to systematically narrow the search and make the review more manageable. This process is facilitated by the development of inclusion and exclusion criteria. These should be justified by the reviewer using transparent criteria, and should ensure that decisions to include or exclude are based on sound judgements as opposed to an exercise in reducing the reviewer's workload. Moloney and Maggs (1999) provide clear examples of inclusion and exclusion criteria in their systematic review focusing on the relationship between written manual nursing care planning, record keeping and patient outcomes. Examples of these include:

### Inclusion criteria

- Time frame, e.g. 1987–1997
- Language or national context
- Main focus of paper, i.e. care planning, record keeping by nurses or multi-disciplinary staff
- Explicit methodology
- Outcome measurements

### Exclusion criteria

Papers excluded from the review were works that focused predominantly upon:

- Informal means of communication
- Information technology-based systems of communication/record keeping

- Nurse management systems relating to rostering or nursing workload measurement
- Paediatrics
- Psychiatry.

These inclusion and exclusion criteria can provide researchers and consumers of research with a transparent framework for decision-making in regard to the relevance and significance of works included. In the above example, however, it was not entirely clear as to why certain clinical specialities were excluded. In the case of the above study these processes enabled the researchers to identify 304 possible sources of information which, upon further scrutiny, were eventually reduced to 13 appropriate studies for inclusion in the review.

## Reviewing the literature

When the body of literature to be included in the review has finally been established, the task then turns to reading. The initial approach to this phase will involve a preliminary skim reading of the abstracts and main body of the literature to provide insights into what has been done, why it has been done and how it was done. This exercise will not only alert the reviewer to the current status of knowledge in the field, but can also illuminate possible gaps in the theoretical knowledge and methodological limitations. This phase can also enable the reviewer to identify themes within the literature that can bring some sense of structure to the more detailed review of each paper and the final construction of the critical review.

## Construction of the review

Once literature has been acquired from various sources, several strategies can be implemented in constructing the literature review. It is important to remember that the main purpose of a critical review is to demonstrate insight into the current state of knowledge in the field and the major questions being investigated, so that gaps pertaining to current knowledge can be identified with confidence. As with any academic paper, the literature review should be

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structured around an introduction, a main body and a conclusion.

### Introduction to the review

The introduction should outline the problem area and the aims and structure of the review. There are many examples of published literature reviews that illustrate this process. Blackwood (1999), for example, introduces a review into endotracheal suctioning (ETS) by briefly explaining the purpose of this procedure, the threats that it can impose on normal functioning of the respiratory system and inconsistencies in the way in which the procedure is practised. The 'problem' for the review of the literature is then identified as the introduction of normal saline installation (NSI) prior to ETS, and the theory for the use of NSI is outlined. The reviewer states clearly at the outset that there is no scientific evidence to support NSI. This, then, serves to establish a basis for the development of an argument within the main body of the review, i.e. evidence in favour of the use of NSI, against evidence against its use.

The introduction should also include the source of literature used in the review, e.g. nursing bibliographies, international index, CD-ROM, Cochrane database, BIDS, etc. The key search terms used should also be stated. This serves two purposes. It enables the reviewer to keep a record of the current state of the search, thereby saving time conducting a replication of the search days later, and also allows researchers to check the validity of the claims made about the availability of literature, by conducting the same search using the same criteria and sources.

### Main body

There are four main methods of structuring the main body of the literature review: examining the theoretical literature and then methodological literature underpinning the selected study; examining the theoretical literature and then the empirical literature in discrete sections; dividing the literature into content themes; and examining the literature chronologically.

### Examining the theoretical literature and the methodological literature underpinning the selected study

In subjects where there is an absence of empirical literature, the only literature available might be of a theoretical nature. Such subjects often generate the need for qualitative research, such as grounded theory. The purpose of the literature review in this case will be two-fold: first to review the theories on the subject, and secondly to consider the implication of these theories for the development of an appropriate methodology to conduct a new study. Firstly, the theoretical papers that critically discuss the nature, constituents and dimensions of the topic as portrayed by various authors could be reviewed. The main issues can then be summarized and the reviewer will add his/her own analysis, evaluation and conclusions. For the purpose of this analysis, several questions need to be asked of the theories espoused including the following:

- Is there a consensus regarding the meaning, nature or constitution of the topic?
- Are there counter-arguments as to the meaning, nature and constitution of the topic, if so what are they?
- Do you agree with these counter-arguments?
- If there are no counter-arguments, can you think of any? These could be based upon theory or experience.

Second, the way in which these theories suggest the need for a given methodology need to be discussed. Other studies of a similar nature might then be reviewed to justify why a particular methodology lends itself to this type of problem. This second section, therefore, becomes a review of the philosophical tenets of a particular methodology and its merits for the chosen study in the light of other studies that have used this same approach.

### Examining the theoretical literature and then the empirical literature in discrete sections

If the literature in the topic area contains many theoretical works (that discuss or describe a concept, construct, or topic that is not based on

actual research) and empirical papers (those based on research with identified findings), the literature could be divided into these two categories.

The first section would be devoted to reviewing the theoretical literature following the steps identified above.

Once the analysis of the theoretical literature is complete, the empirical literature could be treated in a similar way. Analysis and evaluation of empirical literature, however, will need to include critical appraisal of methodologies used within the studies reviewed. Questions to consider include:

- Did the methodology of one study produce more valid results than another study?
- Does one study have more practical relevance than another study?

Although this method is a legitimate method of conducting a literature review, care must be taken to avoid description of theory (in the first section), and description of different studies (in the second section). The next option discussed (developing content themes) is one way of avoiding this.

### Dividing the literature into content themes

The third strategy could be to divide the literature into distinct themes, which would come from within the literature itself. An example of this could be stress with themes of:

- (i) Definitions and cause of stress
- (ii) Burnout in nurses
- (iii) Nurses' coping strategies
- (iv) Organizational responses to stress (Carnwell 1997).

Another example could be pain, with themes of:

- (i) Theories of pain
- (ii) Assessment of pain
- (iii) Management of pain
- (iv) Nurses' attitude to pain and their effect upon decision-making
- (v) Cultural aspects of pain.

These could also be categorized methodologically, e.g:

- (i) Studies utilizing a survey approach
- (ii) Studies utilizing interview approaches

- (iii) Studies using experimental approaches
- (iv) Studies using patient simulations.

This method integrates theoretical literature and empirical literature, and might serve to guard against the temptation to description. The literature within each theme should be reviewed by asking questions as follows:

- (i) Is the evidence conclusive, or is there theoretical consensus?
- (ii) Are there counter-arguments or counter-evidence?
- (iii) If there is no counter-argument or counter-evidence presented, can you think of any?
- (iv) If there are multiple viewpoints or positions regarding the topic, what is your considered view?

Once the literature within each theme has been reviewed and synthesized, a short summary should identify the key arguments and how they relate to the next theme. This technique ensures that each theme flows appropriately on to the next theme, so that the review as a logical structure.

Writing a thematized review is probably the most popular way of conducting the process, and there are many published examples. One such example is Blackwood's (1999) review of endotracheal suctioning, which was successfully divided into themes as follows: secretion removal, inconsistencies in technique, effects on physiological parameters, and effects of psychological well-being. Within each of these themes, Blackwood reviewed the scientific evidence relating to ETT and NSI. Moreover, by examining counter-arguments and counter-evidence she was able to build an argument that she could summarize and 'lay claim' to in her final discussion.

### Examining the literature chronologically

Although a less used approach to conducting a literature review, a chronological review has its place in subject matter that has evolved over time periods, in which theories have been developed, tested and refined over several decades. Two examples illustrate the development of a chronological review – theories of psychoanalysis over the

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past century, and changes in social policy relating to people with learning disabilities. In the case of theories of psychoanalysis, the literature could be divided into time periods such as 'literature pertaining to Freud's theory of psychoanalytic theory' followed by 'Erikson's development of Freud's theory'. The reviewer could then develop further themes that address more recent developments of Freud's theory. In the second example, the first theme could review literature pertaining to 'social policies concerning people with learning disabilities at the turn of the 20th century'. Subsequent themes might consider 'social policy for people with learning disabilities from 1920 to 1940'.

As with the other methods, the review would be laid out in a clear structure, and the literature within each time period would be analysed. Questions pertaining to the literature would be the same as those discussed above. Strategies such as those suggested will facilitate the appropriate examination and intellectual deliberation deserving of a critical appraisal of the literature surrounding a particular topic. They should also represent much more than a list of what the reviewer has read and what others have said. The implementation of these strategies will necessitate some personal investment in time and critical thought. The intended outcome, however, is to provide insight, alternative perspectives and above all avoid the charge of being merely descriptive. Whatever method of structuring the review is adopted, once all the literature is exhausted, the conclusion can be constructed.

### Concluding the literature review

The conclusion should integrate all the theme summaries into a broad terminal conclusion, which would logically lead onto the purpose of a new study and possible conceptual framework. In formulating a conclusion, it is necessary to draw together conclusions from both categories into the main conclusions. Gaps and shortcomings in previous works should now be evident, and why these may not answer a particular research question which therefore needs to be investigated. It might equally be justified to replicate one of the studies reviewed, for example, on a

different or larger population group. The gaps and shortcomings identified logically lead onto the purpose of a proposed study.

It may also be possible to use the material in the different sections of the review to formulate either a conceptual or a theoretical framework. A conceptual framework involves identifying the main concepts within the literature and connecting these together (in the form of a diagram) to demonstrate how they might be used to inform a future study. A literature review around changes in social policy relating to people with learning disabilities, for example, might draw on concepts such as societal norms, power, advocacy, empowerment and normalization. If theories rather than concepts are used to underpin a future study, this suggests that the theories around the topic of interest are well developed. If this is the case, then a small number of key theories pertinent to the planned study may be used, rather than a broader array of concepts from a range of literature, that are less well developed. An example of this could be Lazarus and Folkman's (1984) theory of stress and coping.

### Summary

The literature review is an important part of the research process, and its importance in helping to define and refine a research question, as well as the design of a future study, should not be underestimated. This article has attempted to address some of the dilemmas faced by researchers conducting a literature review, such as defining key words for a search of the literature, and deciding how to structure the review. Issues around critical evaluation of the literature are also addressed.

### References

- Blackwood B 1999 Normal saline installation with endotracheal suctioning: primum non nocere (first do no harm). *Journal of Advanced Nursing* 29(4):928-934
- Burnard P 1993 Facilities for searching the literature and storing references. *Nurse Researcher* 1(1):56-63
- Burns N, Groves SK 1993 *The practice of nursing research: conduct, critique and utilisation*. 2nd ed. W.B. Saunders, Philadelphia
- Carnwell R 1997 Writing research reports. *Practice Nursing* 8(13):14-19

## *Construction of a critical review of the literature*

- Clifford C 1997 *Nursing and health care research: a skills-based introduction*. Prentice Hall Nursing Series, London
- Glaser BG 1992 *Basics of grounded theory analysis*. Sociology Press, California
- Hart C 1998 *Doing a literature review: releasing the social science research imagination*. Sage Publications, London
- Lazarus RS, Folkman S 1984 *Stress, appraisal and coping*. Springer, New York
- Moloney R, Maggs C 1999 A systematic review of the relationships between written manual nursing care planning, record keeping and patient outcomes. *Journal of Advanced Nursing* 30(1):51-57
- Polit DF, Hungler BP 1991 *Nursing research: principles and methods*. 4th ed. J.B. Lipincott, Philadelphia
- Strauss S, Corbin J 1990 *Basics of qualitative research: grounded theory procedures and techniques*. Sage Publications, London