

SYSTEMATIC REVIEWS OF INTERPRETIVE RESEARCH: INTERPRETIVE DATA SYNTHESIS OF PROCESSED DATA

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ABSTRACT

This paper discusses the synthesis of qualitative data during the systematic review of interpretive research. Current approaches to data synthesis can be broadly classified as either descriptive or interpretive. Descriptive data synthesis is achieved through narrative and tabulation. While a number of different terms have been used, interpretive synthesis is achieved through processes similar to those used by primary interpretive researchers. However, there has been only limited professional discussion and debate of this issue and existing methods are in need of further investigation and the validity and usefulness of the product of this synthesis examined.

INTRODUCTION

With increasing emphasis being placed on the need to base clinical practice on high quality research evidence, the importance of systematic reviews has gradually increased. Issues such as the growing volume of health care literature and variable quality of published research have increased the influence of these reviews (Evans 2001). Systematic reviews identify, appraise and summarise the best available research evidence and because of this, have become an integral component of the evidence-based health care movement. The methods used during systematic reviews have undergone considerable methodological development, and as a consequence, there are now clearly defined processes and procedures to ensure the review is both systematic and rigorous (Evans and Kowanko 2000).

However, current systematic review methods have been concerned with the effectiveness of health care, thus the methodological development has focused on the randomised controlled trial (RCT) (Evans and Kowanko 2000). The reason for this is that systematic reviews have been concerned with cause and effect relationships, and the RCT has provided the most valid evidence. More recently, the focus of these reviews, and that of meta-analysis, has broadened to include observational studies (Blettner et al 1999; Martin and Austin 2000). However, despite this broader focus, systematic reviews are still predominantly concerned with numerical data.

For questions that concern issues other than effectiveness, existing review methods are not always appropriate. This is because research exploring the appropriateness or feasibility of health care often produces narrative rather than numerical data. This means current systematic review methods are unable to synthesise the findings of this research and as a consequence, it has been excluded from these reviews. This exclusion of non-RCT research has important implications for the nursing profession, which has a considerable investment in a

number of different research methods. This is most evident in nursing's rich history of investigation of health care issues using interpretive methodologies. As systematic reviews are increasingly being used to influence health care decisions, the exclusion of interpretive research from systematic reviews also results in its exclusion from the decision making process. This means other equally important views of the world are not taken into consideration during the decision making process, and so the effectiveness of health care continues to be the primary focus of many health care decisions.

SYSTEMATIC REVIEWS AND INTERPRETIVE RESEARCH

There has been a small but growing interest in methods by which the findings of interpretive research can be incorporated into reviews. The basis for this is that isolated interpretive studies do not in themselves contribute significantly to the understanding of phenomena (Jensen and Allen 1996) and that merging the findings generated by multiple studies will increase the robustness and transferability of the results. However, there are major differences between the integration of experimental and interpretive research. Reality for the interpretive researcher, and therefore the interpretive reviewer, is viewed as multiple and constructed (Sandelowski 1993). This conflicts with the intent of systematic reviews being reproducible. This is congruent with the experimental research they summarise. As a consequence, methods used for the synthesis of experimental research, focusing on numerical data and homogenous results, will be inappropriate for interpretive research.

The optimal approach for the synthesis of interpretive data is not clear and existing reviews have used a range of different methods. Meta-synthesis is one such approach and has been used in a number of reviews of interpretive studies (Jensen and Allen 1994; Sherwood 1997; Ogen-Burke et al 1998). In addition to meta-synthesis a number of other approaches have also been used. During one review the method of data synthesis was content analysis (Suikkala and Leino-Kilpi 2001), another collated major findings then visually searched the list for key themes (Neill 2000). A review by Barroso and Powell-Cope described their synthesis process as a constant comparative analysis (Barroso and Powell-Cope 2000), while another used a continuous comparison approach derived from grounded theory methods (Kylma and Vehvilainen-Julkenen 1997). A review by Lemmer et al used NUD*IST data handling software to aid in the analysis of data from individual studies (Lemmer et al 1999). A number of reviews incorporated both quantitative and qualitative studies in the same review (Jensen and Allen 1994; Neill 2000; Suikkala and Leino-Kilpi 2001).

These examples serve to demonstrate the variability that exists in current methods for synthesising data generated by interpretive studies. There is little

consistency between reviews, and the reporting of data synthesis methods is often inadequate. However, in evaluating reviews that incorporate interpretive research, there are two common approaches used:

- descriptive synthesis, and
- interpretive synthesis.

Within each of these two broad categories there are a number of more specific approaches that have been used.

DESCRIPTIVE SYNTHESIS

Two methods commonly used during reviews of interpretive research that are best described as a descriptive synthesis include narrative summary and tabulation. The common theme in these methods is that they aim to describe what has been reported in studies, and make little attempt to re-interpret the published data. The descriptions generated during the review process provide the basis for the conclusions drawn by the reviewer.

Narrative summary: The most common approach used to summarise and present the findings of interpretive studies in reviews has been through a narrative discussion. A narrative summary in the context of this paper refers to a general descriptive discussion of the findings of research. This narrative discussion provides an overview of study findings, major themes and issues of importance. It has been used for topics such as women's experiences of abuse (Sleutel 1998), women's experience with biliary cirrhosis (Fahey 1999) and needs and wishes for food of people with terminal illness (Hughes and Neal 2000). While the narrative approach to summarising research has been criticised when used during systematic reviews addressing effectiveness, for interpretive research, a narrative discussion provides one way by which to summarise emerging themes.

However, as text cannot be summarised concisely as is done with numerical data, details of the studies such as methods used, populations and specific findings of individual studies will be lost in the broad descriptive summary. Additionally, summarising interpretive findings using narrative may also pose a number of threats to the validity of the review. Firstly, there are no clear processes and procedures and as a result, the validity of findings is threatened because of the many subjective decisions made while generating the narrative. That is, it is impossible to determine whether the narrative represents a fair and reasonable summary of the body of research, or more a reporting of the reviewer's personal views and opinions. Secondly, the lack of any clear processes and procedures for summarising data means there is unlikely to be a decision trail which is important if others are to judge the worth of the review. Finally, capturing and documenting the complexities of a topic that has a large body of research is difficult for any type of review. However, these difficulties are greater when a narrative summary is used. While these factors do not automatically

mean narrative summaries are not valid, demonstrating this validity can be difficult.

Tabulation: Tabulation, or presenting the characteristics of studies in tables, is another method used to summarise interpretive studies. With this approach, characteristics such as study population, setting and research methods can be listed. For example, Woodward and Webb made extensive use of tables to summarise a range of methodologically different research addressing women's anxieties surrounding breast disorders (Woodward and Webb 2001). Tabulation provides a descriptive synthesis of data that allows the reader of the review to compare results between studies and to formulate their own views of the body of research. Additionally, differences in study populations, methods of data collection and data analysis are more easily identified. As tabulation reduces studies to their key components, it can be used for topics that have a large body of research. However, tabulation only provides a list of study characteristics and therefore it cannot be used as the sole method of data synthesis.

In summary, descriptive syntheses provide a description of the body of research with minimal re-interpretation of the published data. While a narrative synthesis is often used on its own, tabulation must always be supplemented by narrative. The combination of narrative and tabulation provides the most comprehensive summary of qualitative research as the limitations of one method are complimented by the benefits of the other. Additionally, the combination of narrative and tabulation permits a large number of studies to be incorporated into a review, and as demonstrated by Woodward and Webb (2001), can be used to summarise a range of different types of research. However, while conclusions can be generated from the description of the phenomenon, these methods only provide a description, in that they document what has been reported and make no attempt to generate new understandings from published data.

INTERPRETIVE SYNTHESIS

A number of approaches have been used to re-interpret the data reported in published studies. The terms used to describe these processes include meta-ethnography, meta-synthesis, content analysis and qualitative synthesis.

Meta-ethnography: Noblit and Hare proposed meta-ethnography in 1988 as a framework for the summary of qualitative studies (Noblit and Hare 1988). The term meta-ethnography was used to highlight the fact that it was an interpretive alternative to meta-analysis. Noblit and Hare suggested that meta-ethnography was an attempt to develop an inductive and interpretive form of knowledge synthesis, and so provide a rigorous procedure for deriving substantive interpretations about a set of ethnographic or interpretive studies (Noblit and Hare 1988). Meta-ethnography synthesises findings of research

rather than the aggregation that is used during systematic reviews of RCTs.

Meta-synthesis: The term meta-synthesis has been used in the nursing literature to describe the interpretive data synthesis process (Sandelowski et al 1997). While meta-synthesis shares many similarities to meta-ethnography, it also incorporates some of the components of the systematic review process (Evans and Pearson 2001). Meta-synthesis is a framework for the synthesis of non-experimental studies relating to a phenomenon of interest. Like meta-ethnography, it focuses on the themes and descriptions generated by interpretive studies rather than the numerical data produced by experimental and observational research (Sherwood 1999). As these findings have been generated by multiple studies and therefore involve a range of different populations and circumstances, it creates a composite of descriptions of the phenomenon. It has been suggested that the greater degree of abstraction from the inductive process of comparison and synthesis produces results that are more generalisable to nursing practice (Sherwood 1999).

Content analysis: Content analysis has also been used as a method for synthesising research (Suikkala and Leino-Kilpi 2001). Content analysis has been described as a means to obtain simple descriptions of data (Cavanagh 1997), and to systematically and objectively describe and quantify phenomena (Downe-Wambolt 1992). Nandy and Sarvel note that it is an established research tool and is used to gain knowledge, new insights and a representation of facts (Nandy and Sarvela 1997). Content analysis has been used to describe a large variety of topics in a number of different mediums, such as music videos (DuRant et al 1997), women's magazines (Hill and Radimer 1996), professional journals (Armstrong and Standsfield 1996), and advertising (Pratt and Pratt 1995). In addition to the descriptive analysis, qualitative content analysis is also undertaken and differs from the numerically based analysis of the text (Morgan 1993). The descriptions of phenomena are achieved through the analysis of the meanings of words and phrases.

Qualitative synthesis: Some reviews of interpretive research described the synthesis process as a qualitative meta-analysis (Ogden-Burke et al 1998) or qualitative synthesis (Jensen 1994; Fredriksson 1999). However, these methods of synthesis were informed by the work of Noblit and Hare about meta-ethnography (Noblit and Hare 1988), and Sandelowski about meta-synthesis (Sandelowski et al 1997) and are similar to the previously described methods.

THE SYNTHESIS PROCESS

While the methods used to synthesise the findings from published interpretive research vary to some degree, there are many areas of commonality. Additionally, these methods of synthesis also share many similarities with

those used by primary researchers during the initial analysis of the primary data. Despite the different terms used to describe these methods, approaches to data synthesis involve four distinct phases:

1. gather the sample of studies,
2. identify the key findings of each study,
3. determine how these findings relate to those of other studies, and
4. bring common findings together to generate a description of the phenomenon.

The specific steps in the synthesis of interpretive studies as described in published reviews include:

1. Gather the sample

a Determine the unit of analysis

The type of studies that will be included in the review are determined and then documented in the inclusion criteria of the review protocol.

b Locate the studies

A search of databases and other mediums is undertaken to locate relevant studies.

c Select the sample

Studies that are identified during the search are selected for inclusion in the review using the inclusion criteria. This selection process ensures a homogeneous sample, in terms of the characteristics of studies, is included in the review.

2. Identify the key findings

a Read and re-read study reports

Repeated reading of the reports to develop a sense of the studies as a whole. During the reading attention is paid to both the details of accounts and to what each study says.

b Collect findings

The key findings are collected from each study, and are then listed in a single file. This listing of major results, concepts and propositions reduces studies to their key components.

3. Relate themes across studies

a Identify themes

The list of major findings is searched to identify common themes. Differences between studies are compared and contrasted and similar themes identified.

b Collate themes

The key findings from studies are grouped and categorised into areas of similarity. These relationships between studies are examined for key phrases and explanatory themes.

c Sub-themes

From the collated themes, sub-themes are identified. This process results in a progressive refinement of the understanding of the phenomenon.

d Examine the analysis

The themes and sub-themes are re-examined to interpret the content of each theme, and to identify consistencies and incongruities.

4. Describe the phenomenon

a Create the description

Each theme is written up referring back to the original study to check the accuracy of the description.

b Express synthesis

The findings of the synthesis are written up describing all themes and sub-themes, and supporting each with exemplars from original studies.

DISCUSSION

The description of interpretive data synthesis reported in this paper represents an overview of common approaches used in published reviews. These approaches can be broadly categorised as descriptive and interpretive, with one providing a summary of findings, the other generating a new interpretation from the published data. The usefulness and validity of the re-interpretation of processed data has yet to be adequately investigated. However, it should also be noted that the usefulness and validity of the findings of the descriptive synthesis have also not been fully investigated, despite its frequent use.

Another dilemma arises from the philosophical grounding of interpretive research, where reality is viewed as multiple and constructed, and as a consequence, no two studies produce identical results. Opposing this, systematic reviews use standardised methods to maintain the rigour of the review, and like the experimental research they summarise, systematic reviews are reproducible. In contrast, as with the primary research they summarise, no two systematic reviews of interpretive studies are likely to produce identical results. This potential difference in results challenges commonly held views about systematic reviews. Despite these multiple realities, interpretive systematic reviews will produce a composite of descriptions to capture the essence of the phenomenon. However, it is not clear whether the differences in the realities of the primary researcher and reviewer can be reconciled during the review process.

While the need for further investigation and refinement of existing interpretive review methods is acknowledged, there are a number of potential benefits to be gained from these reviews. The most important benefit is the ability to pool the findings from multiple interpretive studies. This process allows the reviewer to systematically investigate,

compare and contrast multiple accounts of a phenomenon. The synthesis process allows a composite description of the phenomenon to be generated. This description is strengthened because it has been generated from multiple populations, settings and circumstances. In addition to this, the inclusion of interpretive research in reviews provides a means by which this evidence can contribute to evidence-based health care. Through these interpretive systematic reviews another perspective is introduced into the decision making process and so helps shape health care to better meet the needs of the consumer.

The methods for the interpretive synthesis of processed data are still at an early stage of development. To ensure this development continues two major activities must be pursued. Firstly, more reviews of qualitative research are needed as these represent the initial exploration of this area. These reviews allow the exploration of this method, provide a repertoire of approaches and help delineate the boundaries. Secondly, greater critical debate of these reviews is urgently needed. Existing published reviews have generally been accepted uncritically, with the methods used and product of the synthesis remaining unchallenged. This passive acceptance of a process that is still in a developmental stage does little to further this development.

CONCLUSION

In conclusion, while there is a growing interest in the synthesis of interpretive research in systematic reviews, further methodological development is needed. As a number of these reviews have been published using a range of different synthesis methods, these reviews represent the initial exploration of this area. The two broad approaches to the synthesis of interpretive data in published reviews have been through a descriptive or interpretive synthesis. However, the optimal method has yet to be determined. If interpretive research is to have a significant impact on the evidence-based health care movement, then this is an area that warrants further investigation.

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