

Synthesizing Evidence from Narrative, Text and Opinion

Zoe Jordan

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THE JOANNA BRIGGS
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This series of concise texts is designed to provide a “toolkit” on synthesizing evidence for healthcare decision-making and for translating evidence in action in both policy and practice. The series seeks to expand understandings of the basis of evidence-based healthcare and brings together an international range of contributors to describe, discuss and debate critical issues in the field.

Incredible developments have occurred in the synthesis and use of evidence in healthcare over the last several years, but the science and emerging practices that underpin evidence based healthcare are often poorly understood by policy makers and health professionals. Several emerging and exciting developments have much to offer health professionals. Firstly, new, deeper understandings of the nature of evidence and of ways to appraise and synthesize it have led to the development of more sophisticated methodologies for synthesis science. Secondly, the realization that the rapid increase in the availability of high quality evidence has not been matched by increases in the translation of this evidence into policy and/or clinical action has spurred on developments in the science of knowledge implementation and practice improvement.

The burgeoning publications in this area – particularly books on evidence based healthcare - can go only so far in informing responsible and conscientious policy makers and health-care practitioners. This new series Lippincott/Joanna Briggs Institute, “Synthesis Science in Healthcare”, is devoted to communicating these exciting new interventions to researchers, clinicians on the frontline of practice and policy makers.

The books in this series contain step-by-step detailed discussions and practical processes for assessing, pooling, disseminating and using the best available international evidence. In all healthcare systems, the growing consensus is that evidence-based practice offers the most responsible course of action for improving health outcomes. All clinicians and health scientists want to provide the best possible care for patients, families and communities. In this series, our aim is to close the evidence to action gap and make that possible.

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Introduction

Health professionals are often expected to work as part of a multidisciplinary team in order to provide appropriate care to patients and clients across health care settings. This activity requires a broad repertoire of skills, which includes the ability to access, appraise and utilize evidence from a variety of sources in their clinical decision-making. This ability is conceptualized as evidence based practice, which invariably is not easy to achieve and has not gone without its share of controversy in both clinical and academic circles since its inception.

Contemporary understandings of evidence-based healthcare (EBHC) practice focus on the need for all health professionals to practice in ways that are supported by the most up-to-date evidence or knowledge available, following the definition of Sackett and colleagues as:

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 means integrating individual clinical expertise with the best available external clinical evidence from systematic research. (Sackett et al 1996)

It is increasingly recognized that the type of evidence needed by clinicians and other decision makers depends on the nature of the question they are pursuing and its purpose. Hence, discourse (or narrative) and experience, as well as research related to the effects of interventions, are acknowledged as legitimate sources of evidence or knowledge.

Pearson et al (2007) contend that:

"...health care practitioners and consumers of health care make numerous decisions and, in doing so, weigh up numerous types of information before taking action. Although the results of well-designed research are an obvious source of evidence, the results of formal research are by no means the evidence referred to in everyday practice. Other determinants include the client and his/her relevant others, the practitioner's own experiences and the nature and norms of the setting and culture in which the health care is being delivered. These are all rich sources of evidence to draw upon in making clinical decisions".

Thus, evidence-based practice (EBP) should involve due consideration of the best available evidence; the context in which the care is delivered; client preference; and the professional judgment of the health professional. Central to this is a pluralistic approach to what constitutes legitimate evidence for practice; including the "professional judgment" of the clinician or decision maker. It thus asserts that there must therefore be a balance of evidence and wisdom when executing EBHC in an institutional setting. The growing sophistication of health service users is generating a demand for care that is both based on the best available, external evidence and accommodates the particularities of individuals. Patients/clients and health professionals anecdotally support a marriage of generalized evidence derived from systematic reviews of research to the particular and singular evidence derived from individual patients/clients. This knowledge of particularities is often intuitive and a form of wisdom.

Narrative, Opinion and Text as Evidence

Chapter 1:

Knowledge, Evidence and Wisdom in Clinical Decision Making

Introduction

The substantive nature of clinical wisdom and the role it plays in professional practice that is based on external evidence represents a recognizable gap in knowledge nationally and internationally. Although the exercise of clinical wisdom or judgment is acknowledged in mainstream evidence based health care, it is not well understood in terms of the extent to which external, research-derived wisdom outweighs clinical wisdom in everyday clinical decision making from both a practitioner perspective and a patient/client perspective. Patients/clients value the technically, scientifically informed practitioner who is also clinically 'wise', and health professionals of all persuasions recognize that using evidence without a high degree of clinical wisdom (which they often refer to as 'clinical judgment', 'clinical reasoning' or 'critical thinking') falls far short of best practice. Thus, marrying the generalized evidence derived from systematic reviews of research to the particular and singular evidence derived from individual patients/clients is anecdotally supported by patients/clients and health professionals, yet it is rarely discussed in evidence based practice circles, and understandings of it are, as yet, poorly developed.

What is meant by the term knowledge? Is it expertise and skills acquired through experience or education, or, the theoretical or practical understanding of a subject, or simply the sum of what is known? In this session you will be asked to consider definitions of knowledge in a personal and organizational context.

It is important to note that there are differing theories of knowledge. Empiricism and experience interpreted via the five senses represent an inductive form of knowledge. Knowledge acquired a priori, innate, is a rationalist and deductive form. Constructivism argues for knowledge produced inter-subjectively, with an additional emphasis on the importance of language.

The study of how we know what we know is contemporarily referred to as epistemology. There are different ways of knowing the world, such as positivism or post-positivism, interpretivist or critical, and these epistemologies represent the main theories of knowledge. It can be useful to point out the connections between these theories and our work as clinicians, or the kinds

Figure 1: Knowing That and Knowing How

Propositional knowledge – **Knowing That**
versus
Tacit knowledge – **Knowing How**

of evidence we use. *Knowing That* and *Knowing How* are two positions discussed at length in debates about knowledge in professional contexts (Figure 1).

What is Wisdom?

There are many and varied conceptions and definitions of the word ‘wisdom’. For some it might be interpreted as soundness of judgment. To be ‘wise’ often demonstrates having or showing experience, knowledge, and good judgment. Wisdom or prudence can also be seen as a virtue, thus conferring moral and ethical status to the ‘wise’.

Aristotelian approaches to wisdom argue for two intellectual virtues:

- Sofia – wisdom/scientific knowledge (Universal); and
- Phronesis – practical wisdom or prudence (Particulars).

Phronesis is about exercising judgment in particular circumstances. In stark contrast to modern conceptions of morality (typically of a Kantian origin) which are dominated by rules, Aristotle’s ethics holds the virtues at its centre and phronesis as a critical virtue, which develops with experience, allowing one to choose the right action in particular circumstances.

Health related disciplines are an applied science. Aristotle (2000) proposed that human’s perception, intellect, desire and spirituality control our behavior and our ways of understanding truth. There are five ways to approach truth: scientific knowledge (*episteme*), skill (*techne*), practical wisdom (*phronesis*), intellect (*nous*) and theoretical wisdom (*sophia*). Expert opinion is built up from clinical experience with theoretical wisdom and practical wisdom. Phenomenology is an applicable philosophical perspective and Gadamer proposes that regarding Aristotle’s practical philosophy, “Kunstlehre”, should be raised on the philosophical level, with both practical and theoretical interests, for the sake of the *arête*, practical “being and action” and phronesis (practical knowledge) (Gadamer, 1986). “Kunstlehre” contributes to the scientific foundation of these rules, and thus, can be characterized as a science. Aristotle defined that theoretical intellect (*sophia*, theoretical wisdom) as the power of speculation (*nous theoretikos*), and practical intellect (*phrónesis*; practical wisdom) as the power of deliberation (*dianoia praktike*).

Theoretical wisdom is the integration of wisdom and scientific knowledge and the ability to be concerned with the most valuable matters. Expert opinion is also the expression of practical wisdom of a special caring situation in regards to the nature of “Kunstlehre” in nursing care.

Husserl emphasizes that “Kunstlehre” is, in a sense, a pure science, which indicates that it is not only about practical advice, but also about pursuing “its own theoretical totality of truths

that are related to practical themes". Above all, and in essence, Husserl shows; "(...) just pure science in limitless theoretical interest, and carelessly oversees all practical claims, and afterwards qualifies supreme triumph over practical contribution" (Wang, 2009).

Aristotle proposed that *phronesis* is a continuous exercise, whereas *habitus* is acquired over time. *Phronesis* means, "being able to judge" (Dottori, 2009). Gadamer followed this idea and stated that *phronesis* is practice-oriented, and therefore, is a reflection upon the special rules of human and social practice (Wang, 2009).

While experts may propose an opinion which is beyond the theoretical base, Gadamer states that the practical knowledge (*phronesis*) of Aristotle is neither technical knowledge (*tèchne*) nor theoretical knowledge, as *phronesis* is practice-oriented, and therefore, is a reflection upon specific rules of human and social practice, thus, clinical knowledge is in the form of "general" and "theoretical".

In healthcare, examples of propositional versus tacit knowledge abound, and these provide a conduit through which we can discuss clinical wisdom.

Re-conceptualizing Evidence-Based Practice

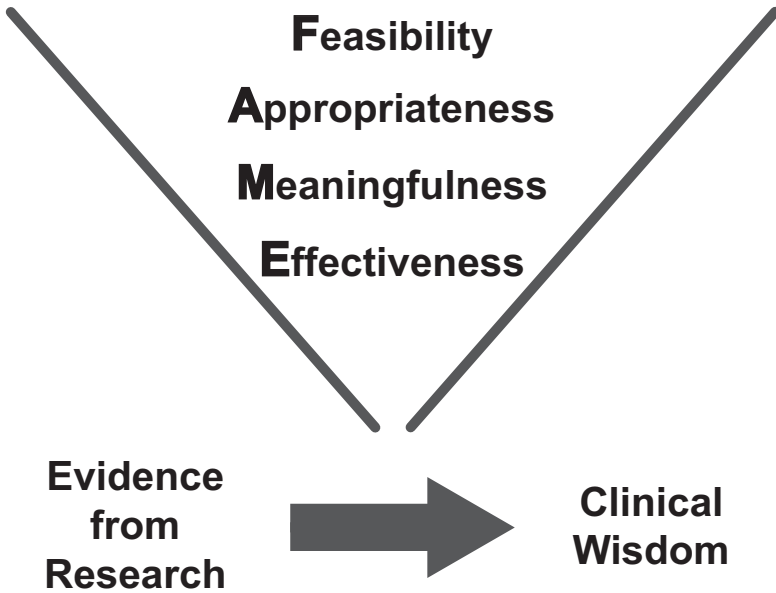
The aforementioned approach to wisdom has critical resonance to EBHC. This is because EBHC focuses on the need to use interventions that are supported by the most up-to-date evidence or knowledge. It thus relies heavily on 'wisdom' and the exercising of clinical judgment in various clinical contexts. EBHC also recognizes the importance of providing practitioners with condensed information gathered through the systematic review of international evidence, evidence, which will ultimately be implemented via personal or organizational discourses of wisdom. There must therefore be a balance of evidence and wisdom when executing EBHC in an institutional setting. The growing sophistication of health service users is generating a demand for care that is both based on the best available, external evidence and accommodates the particularities of individuals. Thus, marrying the generalized evidence derived from systematic reviews of research to the particular and singular evidence derived from individual patients/clients is anecdotally supported by patients/clients and health professionals. The following points highlight the need for EBP to be a balance of evidence, patients' preferences and needs, and clinical judgment:

- Evidence-based health care takes place when decisions that affect the care of patients are taken with due weight accorded to all valid, relevant information.
- Evidence-based health care unequivocally focuses on giving due weight to the context of care; client/patient preference; and the clinical judgment of the practitioner - alongside the best available evidence to produce the best patient outcomes.
- Evidence-based health care asserts a need to ensure that clinical decisions are JUDICIOUSLY INFORMED by the best available evidence and not blindly driven by it.

What Might Evidence-Informed Clinical Wisdom Look Like?

There is certainly a need for balancing the use of evidence in EBHC, with the use of clinical wisdom. For some commentators, there is an apparent universal crisis in health care in

Figure 2: Balance of Clinical Wisdom



relation to the everyday human needs regarding the fundamentals of care as a result of the overwhelming ‘scientisation’ of health care. As Benner (1999) suggests:

“Scientism is particularly evident when large-population statistics are given the same weight as basic science and translated to particular cases, without considering the particular and singular nature of the case. Population based statistics can inform, but not supplant, judgement” (p. 317).

So what would this balance look like? Evidence for healthcare (universal) needs to be tempered or filtered by contextual factors and accompanying particularities. Thus the JBI ‘fame’ scale can be deployed to illustrate a potential model for evidence informed clinical wisdom. This scale would read as follows: Feasibility, Appropriateness, Meaningfulness, Effectiveness, then at the very bottom, ‘Evidence from research’ and Clinical Wisdom (Figure 2). The importance of context and human narrative fits well with the FAME model of JBI.

Thus, based on Gadamer’s perspective of *phronesis*, some clinical knowledge is not only theory-based, but rather independent of the situation. Nursing provides an ethical or good will care. Thus, nursing knowledge does not refer to an object outside the individual; rather it belongs to the individual. Dottori (2009) says, “It is not possible to learn how to exist. *Phronesis* is, therefore, everybody’s rational reflection on what is useful for himself, what serves for their life”.

Gadamer, in following Aristotle’s ideas, believed that understanding (or *synesis*) is set up as a modification of the virtue of ethical knowledge, which means the ability to make an ethical judgment. Aristotle stated precisely that a sphere, which *synesis* and *phronesis* deal with, is the same, but they are not the same, “because prudence is imperative (. . .), and understanding

only makes judgments.” The former deals with ethical knowledge, while the latter deals with theoretical, technical, and ethical knowledge (Wang, 2009).

Aristotle proposes three stages in the formulation of wisdom: right reason (*orthos logos*), intuitive reason (*nous*), and practical wisdom (*phronesis*). Evidence-based knowledge could be serviced as right reason and practical wisdom for understanding and judging clinical situations. This process could provide a deeper understanding of why and how expert opinions develop. Practical wisdom is a kind of competence of deep thought and clearly knowing process. Throughout the practical wisdom process reasoning for decision-making is formed.

Understanding the Wise Practitioner

One of the overarching aims of this book is to provide readers with the appropriate learning tools to explore what ‘wise’ practice is. Clinical wisdom is defined as “experience and knowledge, together with the power of applying them critically or practically”. Wisdoms are also referred to as “expertise”; “judgment” etc, but are frequently reduced to “knowledge, skills and attitudes”. We are often used to hearing these terms associated with “competencies” or “graduate attributes”.

Haggerty and Grace (2008) ask what it means to be a ‘wise nurse’. Should this be interpreted in a utilitarian sense of providing for the good of another and by extension, for the common good? If so, does this mean finding a balance between implementing the best scientific evidence available, whilst also exercising judgment particular to an individual patient’s needs? These are among the many issues and questions that feature prominently in this book, as they represent current debates in professional nursing circles.

No researcher or theorist does their work in a vacuum, and all are inspired and/or informed by other researchers. Benner is one such theorist who has made impressive contributions to debates about clinical wisdom and nursing practice. She drew on Dreyfus’ (two brothers) work in computer science, social psychology and Heidegger’s naturalistic observation of human behavior. Benner’s interest in how nurses learn, rather than what they do or should learn, brought her to consider qualitative approaches in general and phenomenological methods. Her ideas on Clinical Wisdom arose from considering how novice nurses come to learn how to be professionals and how to be ‘wise’. Given that this work was done at a time of increasing professionalizing of nursing, it is seminal both in the understanding of clinical practice, and of the new roles played by clinicians. Her work will thus be showcased in the next section.

The Work of Patricia Benner

Benner is the foremost scholar of clinical wisdom. She argues that clinically wise nurses should be considered experts precisely because they are directly responsible for clinical leadership and decision-making. Benner applied the Dreyfus model of skill acquisition and applied it to nursing. She asked, “How do nurses learn to do nursing?”

Key works:

- 1984 From Novice to Expert
- 1999 Clinical Wisdom and Interventions in Critical Care: A thinking-In-Action Approach.
- 2002 The nursing narratives for reflecting on ethical and clinical judgment.
- 1996, 2009 Expertise in Nursing Practice: Caring, Clinical Judgment and Ethics

Benner studied with Richard Lazarus, a social psychologist, and developed a phenomenological theory of stress and coping. She is also heavily influenced by the phenomenologist Heidegger, who stressed phenomenological descriptions of people, their concerns, practices, and life experiences. There is some debate about whether Benner drew explicitly on Schon and Argyris, or whether they developed their ideas in parallel. It may be that they were all moved by the 'spirit of the time', which began to value practical as well as theoretical knowledge.

Aristotle distinguishes between two intellectual virtues: *sophia* and *phronesis*. *Sophia* (usually translated as "wisdom") is the ability to think well about the nature of the world, to discern why the world is the way it is (this is sometimes equated with science); *sophia* involves deliberation concerning universal truths. *Phronesis* is the capability to consider the mode of action in order to deliver change, especially to enhance the quality of life. Aristotle says that *phronesis* is not simply a skill, however, as it involves not only the ability to decide how to achieve a certain end, but also the ability to reflect upon and determine that end.

Furthermore, expert opinion reflects the individual's full understanding of a concrete situation where they have to act, or, a deep theoretical reflection on the practice of understanding. Based on Gadamer's perspectives, human experience is always experienced in a time-context within which our phenomenological worlds are constantly unfolding, expanding, and restructured. Thus, experts and the health-related population are situated, on one hand, in their own dynamic world experience, and on the other hand, in their experience of each other. Thus, experts aggregate their theoretical wisdom and practical wisdom throughout their experience of encountering patients and self-reflection.

Below is a summary of Benner's main ideas:

- Dreyfus' 5-stage model of moving from novice to expert – *phronesis*
- Donald Schöns "knowing-in-action"
- Chris Argyris' concepts of "action learning"
- The seven major domains of practice

Benner's approach to knowledge thus emphasizes the narrative method. The idea is to capture content and contextual issues that are often missed by formal models of nursing knowledge, and to seek to uncover the knowledge embedded in clinical nursing practice. Her 2004 paper gives a clear explanation of the link between Dreyfus' model and Benner's research into the development of clinical wisdom in nurses. There is an interesting question about the role of the 'expert' and EBHC – the expert no longer relies on rules, guidelines or maxims, yet an expert nurse will still rely on evidence – just on a broader range of evidence, and move away from evidence only when wise experience dictates.

Characteristics of the Wise Practitioner

Based on Heidegger's perspectives, nurses need to understand the patient's mind and their experience is important. It presents itself as Being-in-the-world. For Heidegger, Dasein means we are already there involved in daily activities. It is this human understanding of "being-there" in the world that opens hermeneutics of our experience. Being-in-the-world is understood as a basic openness to the world which is structured as a totality of relevance, for, the understanding of Dasein is characterized as the activity in relation to which every phenomenon

takes on meaning (Tsay, 2011). Thus, a wise practitioner should understand the patient's situation from the patient's point of view.

Furthermore, based on Aristotle's practical philosophy, "Kunstlehre" should be raised on the philosophical level, with both practical and theoretical interests. Thus, experts should have theoretical wisdom and practical wisdom in relation to clinically situated understandings and reflective judgment.

To know what characterizes a 'wise' practitioner, Benner's research program is a useful starting point. Benner aimed:

- To delineate the practical knowledge embedded in expert practice
- To describe the nature of skill acquisition in critical care nursing practice
- To identify institutional impediments and resources for the development of expertise in nursing practice
- To begin to identify educational strategies that encourages development of expertise
- To articulate the nature of knowledge and interventions in critical care

Benner also discussed habits of thought and action, which she categorized in the following way:

- Clinical grasp and clinical inquiry: problem identification and clinical problem solving
- Clinical forethought: anticipating and preventing potential problems
- Clinical Wisdom and Interventions in Critical Care: A thinking-In-Action Approach. p. 2-3

Clinical grasp and Clinical forethought can thus be summarized as follows:

- Clinical grasp involves:
 - Making qualitative distinctions: distinguishing between a 'textbook' set of physiological signs and what those signs might mean in the individual patient.
 - Engaging in detective work: keeping track of what has been tried and what has worked (or not worked) with a particular patient;
 - Recognizing changing clinical relevance: the differing interpretation of signs when management of the patient moves from primarily curative to primarily palliative care;
 - Developing clinical knowledge in specific patient populations: the opportunity to develop expertise through working with, for example, school age children or the frail elderly will give the clinician a background set of expectations against which to judge the progress of a particular patient.
- Clinical forethought involves:
 - Anticipatory actions related to the specific diagnosis or injuries that the patient has and the likely crises, risks or vulnerabilities.
 - The ability to 'notice the unexpected'.

Reflecting on Clinical Wisdom

Scholars of clinical wisdom generally call for a balance of evidence and wisdom in professional nursing contexts. Patients/clients value the technically, scientifically informed practitioner who is also clinically 'wise' and health professionals recognize that using evidence without a high degree of clinical wisdom falls far short of best practice; thus, marrying the generalized

evidence derived from systematic reviews of research to the particular and singular evidence derived from individual patients/clients is anecdotally supported by patients/clients and health professionals.

Conclusion

Wise practitioners in various professions develop expertise and wisdom through continual reflection about the uncertainties, complexities, and value conflicts they confront in practice situations. Reflection-in-action is the process by which a new response is generated in the situation, in response to surprise and under conditions of uncertainty, in a way that involves on-the-spot experimentation and that does not necessarily take place in words. Reflection on that process, however, does have to take place in words; it involves an attempt to describe the knowledge that was generated and the condition under which it was generated and the on-the-spot experimentation that was carried out.

Chapter 2:

Evidence-Informed Clinical Wisdom

Introduction

This chapter discusses ways of balancing evidence and wisdom when executing evidence-based health care in an institutional setting. It considers the growing sophistication of health service users and their demand for care that is both based on the best available, external evidence and accommodates the particularities of individuals. Marrying the generalized evidence derived from systematic reviews of research to the particular and singular evidence derived from individual patients/clients is described.

The Evidence-Based Health Care (EBHC) movement has sometimes been criticized for not being capable of presenting pragmatic guidance/recommendations for clinicians who provide health care in real life settings. Two obstacles have been responsible for the EBHC not fully satisfying the need of clinicians. One is the lack of research studies and the other is the narrowly defined concept of EBHC that sees EBHC as being equivalent to research based practice. This chapter will discuss such obstacles in relation to types of knowledge required to practice health care. The approach that can embrace clinical wisdom in the EBHC will be addressed.

Lack of research evidence that can support practice

The lack of quantitative studies may be related to the difficulty in applying rigorous scientific/statistical rules when investigating or developing an effective method in direct patient care areas that reflects the lived world. Simply too many variables exist to be controlled in planning rigorous controlled trials. Furthermore, the lack of resources appears to be another obstacle to the generation of quantitative evidence that can provide recommendations on what evidence should be selected to meet the best outcomes.

Similarly, despite the current popularity among academics and clinicians, qualitative research may have not reached health care areas that involve direct patient care. The so-called “knowledge and practice gap” has been often discussed in health care since the early 1990s (Street, 1990). Qualitative research was considered to be the best research strategy that could reinforce and add to the knowledge base of nursing and practical areas of health care. Two decades later, a large area of practice appears to have been left by qualitative researchers and the EBHC movement. This is particularly the case in the highly practical and context-specific area of health care.

EBHC vs. Research-based health care

There is a critical misunderstanding about the concept of EBHC that considers EBHC as being equal to the term “research-based health care”. In such a narrow view, the clinical wisdom of expert clinicians is considered irrelevant since it is not generated using a rigorous research method. This may be correct in terms of “knowing what” type of knowledge is concerned, as

discussed in the first section. What drug should be used, what strategies are more effective than others, can only be determined by rigorous quantitative research, where non-research based knowledge has no role to play.

With regard to “knowing what” type of knowledge, clinician’s practical wisdom only can provide evidence concerning “perceived effectiveness” in contrast to statistically proven effectiveness. For instance, for many years the use of a donut device was considered to be effective in preventing pressure ulcers. In recent years, however, the EBHC movement has eliminated the donut device from practice because the current evidence has indicated it actually interferes with the blood flow in the area where it is applied (Moskowitz, 2010). It is this kind of example that encourages clinicians to move beyond experience-based practice to the practice supported by the scientific evidence.

Clinical wisdom/tacit knowledge

However, such an argument is valid only in the case of evidence concerning the effectiveness of health care interventions (knowing what evidence). An increased number of high quality RCTs may not be enough to produce sufficient and relevant knowledge for the development of a comprehensive evidence-base to support EBHC. The type of knowledge required to carry out health care activities (clinical wisdom) is complex and cannot be produced only from a positivist/statistical research method (Benner 1984, Carper 1978, Silva 1977, Marin 2004). As discussed in the first section, clinical wisdom refers to knowledge that supports judgment regarding how care should be provided in real life settings. Clinicians provide practice using both *Sofia* (scientific knowledge) and *Phronesis* (practical wisdom). Without incorporating practical/clinical wisdom derived from their experiences, it is not possible to provide health care for people in real life settings.

Evidence derived from clinical wisdom

Two types of evidence source exist that can present evidence on the clinical wisdom concerning a specific health phenomenon: qualitative research evidence and textual opinion evidence. This type of knowledge cannot be articulated through statistical research design. The introduction of the notion of clinical wisdom has promoted the rise of the qualitative research culture in the nursing profession worldwide. However, even the current popularity of qualitative research might have left some areas of health care practice almost untouched. This is particularly the case in the highly practical areas of health care such as assisting daily care in aged care contexts.

This appears to be *déjà vu* for researchers in nursing who have worked through the promotion of the qualitative research paradigm as opposed to the dominant-positivist/biomedical view. At the beginning of 1990s, Street referred to nursing practice as a ‘messy swamp’ in confusion and chaos while researchers conducted clean and scientific research on the high hard ground with no connection with the messy practice. She advocated the power of qualitative research for improving practice in real life to fill the so-called research and practice gap (Street 1990). Two decades later, qualitative research has received recognition as a rigorous methodological approach in nursing and other health care disciplines. However, some areas of nursing practice appear to have been left in the messy swamp with little light from the qualitative research

community and the EBHC movement. This is particularly the case in a highly practical and context-specific area.

To overcome this dilemma, the JBI promotes a new interpretation of textual-opinion papers in the light of clinical wisdom and knowing-how type of evidence. Historically, the EBHC movement has advocated a shift away from traditional experience-based health care to practice supported by the best available research evidence. However, a large part of the knowing-how type of clinical wisdom necessary to provide health care in the real world might not fully fit into the methodology-oriented academic reasoning system.

Textual evidence should be understood as the narrative expression of clinical wisdom from health professionals. Narrative knowledge does not fall into a conventional academic reasoning system of induction and deduction but it is possible that health professionals and other care providers can receive content-specific (e.g. bathing older adults with dementia) guidance and insights on how to improve their everyday practice in the form of narrative knowledge (Worth 2008 & Mattingly 1991).

Exploring clinical wisdom in Textual evidence

Historically, the EBHC movement has advocated a shift away from traditional experience-based health care to practice supported by the best available research evidence. However, a large part of practical knowledge necessary to provide health care in the real world do not fully fit into the methodology-oriented academic reasoning system (Worth 2008). Narratively articulated clinical wisdom makes sense beyond traditional academic paradigms and is largely identified in non-research opinion papers (Worth 2008). Narratively expressed clinical wisdom is concerned with human experience in the real world but does not attempt to establish formal truth based on empirical data (Mattingly 1991). Instead, it helps us to understand the lived world of the clinician by showing how care should be actually provided in the lived world.

From nurses' being there perspective, Heidegger proposed that human beings are present, the feeling of "being there". Human beings are "thrown" into situations in which we must continually act and interpret in a dynamic interaction with the environment. It is the normal and lawful interaction with the real-world environment that is considered primary to our way of existing in the world, our "being-in-the-world". Thus, experts' wisdom represents the knowledge of existence, which rests on an understanding of the 'being' experience from the patient's point of view (Dreyfus, 1991).

Conclusion

The new interpretation of textual opinion papers allows us to consider such papers as a rich source of clinical wisdom based on clinicians' experiences in the lived world - a type of knowledge that also reflects unexamined cultures and discourses around the experiences of both health professionals and health service users. Although such papers are not based on rigorous research methods, it is likely that clinicians and care providers can receive highly content-specific insights to improve their everyday practice.

Chapter 3:

Narrative, Expert Opinion and Text as Sources of Evidence

Introduction

So far in this book we have established that, while most health professionals have embraced the concept of evidence-informed clinical decision-making, it is true to say that clinical questions are not always answered by systematic reviews of research evidence. This chapter will explore different sources of knowledge for clinical decision-making. It is frequently the case that knowledge from different sources may be applicable (and/or available) to inform a particular procedure or intervention. In the absence of evidence derived from rigorous primary research studies, what are the options? And once this knowledge is identified, how can clinicians feel confident about its reliability and validity before utilizing it in their practice?

What constitutes knowledge?

Some serious consideration has been given to what constitutes evidence to inform clinical decision-making in health care environments and indeed within the evidence based movement. There has been much debate around the utility of quantitative versus qualitative research as valid sources of evidence. Indeed, at an international level, there has been considerable discussion and debate over not only the inclusion of qualitative research in the systematic review process, but the methodologies and methods surrounding its inclusion.

It appears now to be broadly accepted that knowledge generated from qualitative approaches to research is appropriate and acceptable in order to answer clinical questions that cannot be answered through quantitative forms of enquiry.

Humphris (1999) defined evidence-based health care as “the use and application of research evidence as a basis on which to make health care decisions, as opposed to decisions not based on evidence”. However, little time has been invested in discussing the value of evidence derived from clinical expertise and experience to inform clinical decision-making where “research” evidence is not available.

Although proponents of evidence based healthcare would argue that the results of high quality research are the only source of evidence for practice (and some, as suggested, would go further and suggest that it is only meta-analyses of results of randomized controlled trials and research studies that objectively determine the significance of findings statistically can be regarded as legitimate evidence) this has drawn considerable criticism from clinicians.

Clinicians argue that the nature of everyday practice demands an eclectic, pragmatic approach to conceptualizing evidence. As the “consumers” of systematic reviews, those who practice within the health system, regard the opinion of experts and the views of experienced clinicians and their professional bodies as valid forms of evidence for practice, especially when some interventions or activities are required in practice even if no evidence from research exists.

Clinicians argue that they cannot cease to respond to patient/client needs if these needs (and the appropriate or effective response to them) have not been well researched. The pragmatics of practice require clinicians to adopt a perspective that works and is the most appropriate within the context and under the circumstances that they work.

Fundamental to the evidence-based practice project globally is the provision of the “best available” evidence, in condensed and usable formats to clinicians to inform clinical decision-making. When a client problem or situation, and effective and appropriate interventions or activities to respond to it, is only addressed in the scientific literature from a perspective of clinical experience or the consensus of experts, it can be reasonably argued that this is the best available evidence (albeit that evidence generated through rigorous research may represent evidence of higher quality). From a pragmatic perspective, clinicians interpret evidence to mean the basis of belief; the substantiation or confirmation that they need to believe that something is true. When used in relation to clinical practice, clinicians seek evidence to substantiate the worth of a very wide range of activities and interventions and thus the type of evidence needed depends on the nature of the activity and its purpose.

So, knowledge generation in the form of hypothesis testing primary research studies is, of course, a legitimate and reliable source of evidence. However, the root of clinical enquiry often arises from discursive interactions – either between health professionals and multidisciplinary teams or between health professionals and their encounters with patients. These discursive interactions are frequently the seed from which more formal processes of enquiry are germinated.

So, although the benefits of results of well-designed research as a source of evidence are obvious and many, significant gaps in research remain. In the absence of such research, there are still rich sources of evidence upon which to draw in making decisions.

Language has become an important aspect of social and professional processes. We have seen the emergence of a knowledge based economy and thus an economy that is also discourse-based in the sense that new knowledge is produced, circulated and applied in production as new discourses. In this sense, language and other forms of discursive practice have become commodities. And make no mistake, they are valuable commodities, particularly in health environments, whether they are derived from rigorous primary research studies or not.

According to a 1999 report by the Global Forum for Health Research, only 10% of the \$50-60 billion that is spent every year for health research is used for research on the health problems of 90% of the world’s people (the so-called 10/90 disequilibrium) (Global Forum for Health Research 2000). This somewhat astounding revelation means that significant gaps in health research often exist. Thus, it is imperative that alternative sources of knowledge are identified and made available to health practitioners and consumers of healthcare to inform decision-making at the point of care and a means of collating and evaluating the quality of this knowledge base.

Defining the “text”

Having established that an alternative source of knowledge is appropriate and, in fact, necessary, it is important to ascertain how such knowledge “texts” can be defined and identified.

As a starting point, conceptually, the question of what constitutes a “text” can differ due to highly variable theoretical approaches to text linguistics and discourse analysis where even the concepts of text and discourse are used in a multitude of ways and are grounded in differing research traditions. Similarly, social scientists understanding and utilization of methods and the *act* of analyzing text is also quite variable. It is therefore important to establish what rules, guidelines, procedures and tools are to be utilized in order to fulfill this remit.

Text can be defined as a ‘communicative event’ that may correspond with a particular genre – in this case we are talking about sources of knowledge for the purpose of systematic reviews relating to health care research, inquiry, discussion, debate or opinion. Different genres have particular linguistic features, fulfill particular functions and are bound to specific rules of production and response. Contextual expectations, therefore, are also fundamental to understanding the role of text in different settings.

In relation to synthesis of non-research text within health care, we are generally speaking of published opinion based pieces, government or institutional policies and/or reports, unpublished (or grey/gray) literature, discussion papers, or consensus guidelines. Clinicians often refer to these texts as sources of knowledge to inform practice, particularly where no research-based information exists.

Conceptualizing the synthesis of text and opinion

It has been argued that the concept of synthesizing research (regardless of theoretical basis) is nonsensical, even ‘stupid’, permeating a ‘discourse of distrust’ of researchers and a tyranny of rules that evoke a sense of over-analyzing research under the guise of transparency, clarity and replicability (MacLure, 2004).

The aim of synthesizing text in this way is not to undermine the expertise of the source, but rather to acknowledge that, in the absence of primary research, the experience and knowledge of expert practitioners and professional bodies is a valid source of evidence to inform decision-making.

The synthesis of evidence derived from narrative, opinion and text is relatively new to the world of evidence-based practice. Textual analysis takes many forms. However, in its current form, the features of synthesis relating to narrative, text and opinion may be aligned with content analysis or discursive analysis and the need to derive meaning from the content and formation of statements made by others.

Steps in this process are aimed at identifying the degree to which the text being reviewed has “authority” in so far as its focus on serving the best interests of health care recipients. The systematic review of non-research text requires reviewers to consider its validity as a source of guidance for practice; identify and extract conclusions or recommendations made (messages conveyed) from papers included in the review; and to determine how these conclusions or recommendations have been influenced by those who present the findings from a historical, social and political perspective.

Fundamental to this approach is a certain level of interpretation as the reviewer attempts to analyze, describe and critique the various positions reflected in the text. Discursive inquiry involves an exploration of language and description of culture, which differ from other more traditional methods of investigation.

Discourse analysis

Discourse analysis is not a coherent paradigm of well-defined procedures, but a proliferated theoretical approach, which covers a broad range of methodological devices. It embodies a strong social constructivist view of the social world that shares the concerns of other qualitative approaches with the meaningfulness of social life. However, it attempts to provide a more profound interrogation of the precarious status of meaning (Phillips and Hardy 2002).

Traditional approaches to qualitative research assume a social world and then seek to understand it. However, discourse analysis attempts to explore how the socially produced ideas and objects that populate the world were created in the first place and how they are maintained over time (Phillips and Hardy 2002). While other qualitative approaches work to understand or interpret social reality as it exists, discourse analysis endeavors to uncover the way in which it is produced. It examines how language constructs phenomena not how it reflects and reveals it (Phillips and Hardy 2002).

Michel Foucault (1926–1984) has been described as one of the most influential philosophers of this century. Foucault's work is frequently referred to in a broad range of disciplines. He combined philosophical topics with historical investigation. Rejecting the tag postmodern or structuralist, it can be said that Foucault's contribution to the history of ideas involves a rethinking of three central concepts: discourse, power and knowledge. He refused to be identified with any specific or universally applicable method, rather calling for his works to be utilised as a toolkit from which others could take and use various elements to suit their own individual needs.

Discursive analysis, history and the human experience

A diagnosis of the present is the way in which Foucault utilised the examination of history. According to this approach, history is a way of seeing that the present is just as strange as the past and things and events may or may not be connected (Kendall & Wickham 1999).

Foucault rejects the idea of the self-governing subject, pointing out that what comes between ourselves and our experience is the grounds upon which we can act, speak and make sense of things. For Foucault, one of the most significant forces shaping our experiences is language. We use language to explain our ideas and feelings to others but also to ourselves (Danaher, Schirato & Webb 2000).

Archaeology, genealogy and discourse are the tools Foucault uses to give some order to history, at the same time as giving history the 'power-knowledge twist' that makes the Foucaultian approach so distinctive (Kendall & Wickham 1999). One requires a field of knowledge (archaeology), a narrative collection of rules (genealogy) and a mode of relation to one self (ethics) in order to critically analyse the human experience (Hoy 1986). Discourse, as the means through which a field 'speaks' of itself to itself, plays a major role in the operations of the field. So in mapping out a discursive field, Foucault wants to trace where particular instances of discourse have occurred, to make connections between these instances and to bring them together to identify a particular discursive formation.

Archaeology

When taking a Foucauldian approach to discourse analysis, the statement, as it occurs in the archive, is the main concern. Archaeology helps us to explore the networks of what is said

and what can be seen in a set of social arrangements: in the conduct of an archaeology, one finds out something about the visible in 'opening up' statements and something about the statement in 'opening up' visibilities (statements and visibilities mutually condition each other) (Kendall & Wickham 1999).

Kendall and Wickham (1999) go on to add that archaeology requires an investigation of the relationship between words and things; a focus on how a system of statements works; an attempt to formulate rules for the replicability of statements, ways of being and acting (i.e. the way statements produce subject positions); describe surfaces of emergence, attempts to describe institutions and describe forms of specification (how phenomena are made accessible to us).

Discursive practices, according to Foucault, are like events that occur at a particular time and create effects within a discursive field. Thus, they should be examined historically in order to understand and explain how particular world-views come into being: the continuities and discontinuities that contribute to how people make sense of the world and how this evolves. Knowledge and truth are not ahistorical in this sense, but are produced by epistemes and are caught up in struggles of power. Foucault (1972) states:

"... history proper was concerned to define relations . . . between facts or dated events: the series being known, it was simply a question of defining the position of each element in relation to the other elements in the series. The problem now is to constitute series: to define the elements proper to each series, to fix its boundaries, to reveal its own specific type of relations, to formulate its laws, and, beyond this, to describe the relations between different series, thus constituting series of series, or tables . . ." (p. 8)

Mills (1997) states that Foucault's archaeological analysis of discourse is important because he is not simply analysing the discourses which are circulating in our society at present; what he wants us to see is the arbitrariness of this range of discourses, the strangeness of those discourses, in spite of their familiarity. He also wants to chart the development of certain discursive practices, so that we can see that, rather than being permanent, as their familiarity would suggest, discourses are constantly changing and their origins can be traced to certain key shifts in history (Mills 1997).

Genealogy

Foucault distinguishes between archaeology and genealogy when he says:

"If we were to characterise it in two terms, then 'archaeology' would be the appropriate methodology of this analysis of local discursivities and genealogy would be the tactics whereby, on the basis of these local discursivities, the subjected knowledges which were thus released would be brought in to play." (Foucault 1980, p. 85)

According to Kendall and Wickham (1999), archaeology is Foucault's method and genealogy is not so much a method as a way of putting archaeology to work, a way of linking it to our present concerns.

Carabine (cited in Wetherell, Taylor & Yates 2001) offers this explanation: "Foucault's genealogy offers us a lens through which to undertake discourse analysis and with which we can read discourses" (p. 268). Carabine goes on to add that this lens means we can read discourses as, on the one hand, being infused with power/knowledge and, on the other, as playing a

role in producing power/knowledge networks. In other words, if Foucault's archaeological analysis relates to discourse in historical context, then his genealogical analysis seeks to explain how these discourses were produced and changed over time. It reconceptualises discursive events in terms of truth and power in the construction and deconstruction.

Discursive regularities, statement and archive

For Foucault, a discourse is not a set of utterances, which is stable over time; he tries to work against notions of progress and development, which dominate liberal ways of thinking. Instead of viewing history as a simple progression towards greater civilisation or equality, Foucault argues that history is discontinuous; there is not a seamless narrative. He is therefore concerned with charting moments of discontinuity when discursive structures undergo radical change (Mills 1997).

Foucault seeks a level of analysis, which takes account of concepts, their continuities, their interconnectivities, small shifts and radical re-ordering. He argues that the rules for the formation of concepts operate within the discourse rather than being external to it (Foucault 1972). It is these regularities or irregularities that form the conditions of existence for any discursive formation.

Statements, according to Foucault, are not structures, but a function of existence that properly belongs to signs on the basis of which one may then decide, through analysis or intuition, whether or not they make sense. To understand the variety of styles of statements, Foucault found that it was necessary to take into account other systematically changing discursive practices, such as who has the right to make statements, from what site statements emanate and what position the subject of discourse occupies (Dreyfus & Rabinow 1982).

For Foucault, a discourse is not only a group of statements for which conditions of existence are definable, but also a historical event or an archive of historical statements. Archaeology constitutes a way of conducting historical analysis of discourse. To be more precise archaeology seeks to describe the archive, the term employed by Foucault to refer to "the general system of the formation and transformation of statements" existent at a given period within a particular society (Foucault 1972, p. 146). The archive determines both the system of enunciability of a statement-event and its system of functioning.

According to Carabine (cited in Wetherell, Taylor & Yates 2001) a discursive strategy refers to the ways that a discourse is deployed. It is the means by which a discourse is given meaning and force, and through which its object is defined. It is a device through which knowledge about the object is developed and the subject constituted. So, within this study, it is a device through which perspectives on and strategies for international collaboration are put into discourse.

Deconstructing 'truth' and power relations

For Foucault, discourse is more than just spoken word; it is the mechanism through which power operates. Foucault's conceptualisation of power and the relationship between power and knowledge are important to the examination of organisational existence and functioning.

Early conceptions of power were characterised as conditioned upon a conflicting relationship among self-determining agents who consciously advanced their individually defined interests against the understood interests of equally self-determining others (Abel 2005). In contrast to

this view, Foucault expands the dimensions of a definition of power and suggests that power is not something that is “acquired, seized or shared, something one holds on to or allows to slip away” (Foucault 1990, p. 94).

Power, for Foucault, is not just the ruthless domination of the weaker by the stronger and is not, in fact, something that is owned at all. Rather, Foucault believed power to be everywhere; not because it embraces everything but because it comes from everywhere (McHoul & Grace 1993). By conceptualising power as not necessarily a dominant influence distorting both discourse and practice but as potentially enlightening and legitimate, it provides a means of going on discursively and rationally toward a positive future in a consensual society (Abel 2005).

Foucaultian power has been described as something not held, but practiced. It is not imposed from above, but is a series of relations within a system or society; there is no ‘outside’ to power, no place untouched by it; in the end, power produces desires, formations, objects of knowledge and discourses, rather than primarily repressing, controlling, or providing an outlet for powers already held by pre-existing subjects, knowledges or formations (Nealon 2008).

Foucault also recognizes truth as a form of power and uses the term ‘games of truth’ to emphasise that, while public institutions authorise their activities by claiming to be speaking the ‘truth’, these truth claims are dependent on institutional and discursive practices. He defines a game of truth as a set of rules by which truth is produced. Foucault’s thesis on power highlighted the essential link between power relations and their capacity to produce the truths we live by. He argued that “we are subjected to the production of truth through power and we cannot exercise power except through the production of truth” (McHoul & Grace 1993, p. 59).

In his studies of governmentality, Foucault defines power as ‘actions on others’ actions’ and views it in society as not a fixed or closed regimen, but an endless and open strategic game (Burchell, Gordon & Miller 1991).

Organisational discourse can be clearly linked with power constructs. Power, in such circumstances, is not an attribute or possession of any individual, but rather a characteristic of human interaction. Power arises between individuals in their relationships through discursive practice, or conversation. Conversations are more than simply the spoken word; they are a mechanism through which power operates. Foucault’s conceptualisation of power and the relationship between power and knowledge are important to the examination of organisational existence and functioning.

Shaw (2002) argues that professional discourses allow us to argue both retrospectively and prospectively about our work practices. She states “. . . they legitimise the kind of causality we will use to articulate the nature of our human agency, the kind of difference we can make, the scope and limitation of our power to influence the evolution of events” (p. 96).

When Foucault analysed discourse he was not examining the system of its language or its rules of construction (as he was not concerned with knowing what makes it legitimate or makes it intelligible, or allows it to serve in communication). Foucault was more concerned with how statements come in to being, the conditions that enable their emergence and how they are related to previous statements or events (Burchell, Gordon & Miller 1991).

Discourse, text, opinion and evidence

In this way, published opinion based pieces, government or institutional policies and/or reports, unpublished (or grey/gray) literature, discussion papers, or consensus guidelines are all shaped by the social norms of the context from which the text arises and they are political in the sense that they carry the power that reflects the interests of those who have written them. Opinion leaders, professional organizations and learned bodies (such as professional academies, royal colleges, etc) have a powerful influence in shaping the way in which health professionals frame and discuss appropriate ways of practicing effectively and appropriately.

Discourse, as the means through which a field 'speaks' of itself to itself, plays a major role in the operations of the field. In mapping out a discursive field, Foucault wants to trace where particular instances of discourse have occurred, to make connections between these instances and to bring them together to identify a particular discursive formation.

Norman Fairclough, a prominent figure in critical discourse analysis, who defines discourse as including "representations of how things are and have been, as well as imaginaries – representations of how things might or could or should be". He states, "the 'knowledge' of the knowledge-based economy includes imaginaries in this sense – projections of possible states of affairs, 'possible worlds'".

Critical discourse analysis, entails some form of detailed textual analysis. It specifically includes a combination of interdiscursive analysis of texts (i.e. of how different genres, discourses and styles are articulated together) and linguistic and other forms of semiotic analysis. What data is selected, how it is collected, depend upon the project and object of research.

Conclusion

While it can be argued that narrative, opinion and other forms of text are potentially legitimate alternate sources of knowledge to inform clinical decisions, it is a relatively new field within the evidence-based movement. The synthesis of this type of knowledge is also in its infancy and draws conceptually on methods derived from discourse and content analysis. It is important to acknowledge that, in an information rich society, we are still lacking in solid research based evidence to inform all of the clinical decisions that are required of health professionals every day. Thus, where "other" forms of evidence are available it is essential that they are assessed for quality and are made available for clinicians to utilize.

The Systematic Review of Narrative, Expert Opinion and Text

Chapter 4:

Protocol Development

Introduction

Systematic review protocols are as important as any other research proposal or plan and ensure that the review undertaken is of the highest quality with transparency of process, regardless of the type of evidence included. It provides a predetermined plan with the intent of ensuring scientific rigor and minimizing bias. It also facilitates an effective approach to the update process so it is important that this phase of the review process is considered carefully and adhered to as closely as possible, with any critical variations in process documented.

Protocol title

While a number of mnemonics have been discussed in the sections on quantitative and qualitative protocol development, and can be used for opinion and text, one additional mnemonic may be useful to the nature of opinion-based systematic reviews. The mnemonic SPICE includes the more generalized term evaluation rather than outcome, and may be more useful in textual evidence by avoiding association with the quantitative implications of outcomes being associated with causal evidence, particularly randomized controlled trials. SPICE incorporates the Setting, Perspective, Intervention, Comparison and Evaluation. However, not all elements necessarily apply to every text or opinion-based review, and use of mnemonics should be considered a guide rather than a policy.

Background

The background should describe and situate the elements of the review, regardless of whether a particular mnemonic is used or not. The background should provide sufficient detail on each of the mnemonic elements to justify the conduct of the review and the choice of the various elements of the review.

The Joanna Briggs Institute places significant emphasis on an extensive, comprehensive, clear and meaningful background section to every systematic review. Given the international circulation of systematic reviews, variations in local understandings of clinical practice, health

service management and client or patient experiences need to be clearly stated. It is often as important to justify why elements are not to be included.

Review Objectives/Questions

The objectives guide and direct the development of the specific review criteria. Clarity in the objectives and specificity in the review questions assists in developing a protocol, facilitates more effective searching, and provides a structure for the development of the full review report. The review objectives must be stated in full. Conventionally, a statement of the overall objective is made and elements of the review are then listed as review questions. With reviews of text and opinion, consideration needs to be given to the phrasing of objectives and specific questions as causal relationships are not established through evidence of this nature, hence cause and effect type questions should be avoided.

Inclusion Criteria

Population/Type of participants

Describe the population, giving attention to whether specific characteristics of interest, such as age, gender, level of education or professional qualification are important to the question. These specific characteristics should be stated. Specific reference to population characteristics, either for inclusion or exclusion should be based on a clear justification rather than personal reasoning. The term population is used but not to imply that aspects of population pertinent to quantitative reviews such as sampling methods, sample sizes or homogeneity are either significant or appropriate in a review of text and opinion.

Intervention/phenomena of interest

Is there a specific intervention or phenomena of interest? As with other types of reviews, interventions may be broad areas of practice management, or specific, singular interventions. However, reviews of text or opinion may also reflect an interest in opinions around power, politics or other aspects of health care other than direct interventions, in which case, these should be described in detail.

Comparator

The use of a comparator is not required for a review of text and opinion based literature. In circumstances where it is considered appropriate, as with the intervention, its nature and characteristics should be described.

Outcome

As with the comparator, a specific outcome statement is not required. In circumstances where it is considered appropriate, as with the intervention, its nature and characteristics should be described.

Search strategy

This section should flow naturally from the criteria that have been established to this point, and particularly from the objective and questions the review seeks to address. As reviews of

opinion do not draw on published research as the principal designs of interest, the reference is to types of “papers” or “publications” rather than types of “studies”.

The search strategy does need to reflect current international standards for best practice in literature searching. Rather, the search strategy should aim to find both published and unpublished studies using a three-step search strategy. An initial limited search of MEDLINE and CINAHL should be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search using all identified keywords and index terms should then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles should be searched for additional studies. Studies published in other languages may be considered for inclusion in the review. The search for studies to be considered for inclusion in this review should also be time limited.

The protocol should also include a list of databases to be searched. If unpublished papers are to be included, the specific strategies to identify them are also described, and lists of key words per database are also recorded.

Assessment of methodological quality

Expert opinion – whether expressed by an individual, by a learned body or by a group of experts in the form of a consensus guideline – draws on the experience of practitioners. Thus, validity in this context relates to the soundness of opinion in terms of its logic and its ability to convince, the authority of the source and the quality of the opinion that renders it supportable. Whilst expert opinion is rightly claimed to not be a product of “good” science, it is empirically derived and mediated through the cognitive processes of practitioners who have typically been trained in scientific method.

The focus then of appraisal is on authenticity: specifically, authenticity of the opinion, its source, and possible motivating factors and how alternate opinions are addressed. The items of appraisal are standardized for this type of literature, while the methods are the same as for appraisal of any type of literature. Standardized appraisal criteria require the primary and secondary reviewer to meet or electronically discuss the criteria to ensure a common understanding, then to apply them individually to each paper. Once both primary and secondary reviewers have conducted appraisal, any discrepancies in opinion are discussed and a mutual decision agreed upon.

Data extraction

The section of the protocol should detail what data is to be extracted and the tool that will be used for extracting that data. Data extraction serves the same purpose across evidence types - as in the previous modules that considered quantitative, qualitative and economic evidence, extraction aims to facilitate the accurate retrieval of important data that can be identified from many papers and summarized into a single document. An extraction is a summary of the main details of the publication and should be conducted after carefully reading the publication. Data extraction incorporates several fields relating to the type of text, its authors and participants, then the content of the paper in the form of conclusions.

The specific fields and types of text to extract are as follows:

Types of Text

The type of opinion that is being appraised, for example, an expert opinion, a guideline, a Best Practice Information Sheet.

Those Represented

To whom the paper refers or relates.

Stated Allegiance/Position

A short statement summarizing the main thrust of the publication.

Setting

Setting is the specific location where the opinion was written, for example, a nursing home, a hospital or a dementia specific ward in a sub-acute hospital. Some papers will have no setting at all.

Geographical Context

The Geographical context is the location of the author(s) - be as specific as possible, for example Poland, Austria, or rural New Zealand.

Cultural Context

The cultural context is the cultural features in the publication setting, such as, but not limited to, time period (16th century); ethnic groupings (indigenous Australians); age groupings (e.g. - older people living in the community); or socio-economic groups (e.g. - working class). When entering information it is important to be as specific as possible. This data should identify cultural features such as time period, employment, lifestyle, ethnicity, age, gender, and socio-economic class or context.

Logic of Argument

An assessment of the clarity of the argument's presentation and logic. Is other evidence provided to support assumptions and conclusions?

Author's Conclusion

The main finding(s) of the publication.

Reviewer's Comments

A summary of the strengths and weaknesses of the paper.

Textual data extraction involves transferring conclusions from the original publication using an approach agreed upon and standardized for the specific review. Thus, an agreed format is essential to minimize error, provide an historical record of decisions made about the data in terms of the review, and to become the data set for categorization and synthesis. Specifically, the reviewer is seeking to extract the Conclusions drawn by the author or speaker and the argument that supports the conclusion. The supporting argument is usually a quotation from

the source document and is cited by page number with the Conclusion. Many text and opinion based reports only develop themes and do not report conclusions explicitly. It is for this reason that reviewers are required to read and re-read each paper closely to identify the conclusions to be generated.

Data synthesis

This section of the protocol should include details of how the extracted data will be synthesized. The aim of meta-aggregation is to: firstly, assemble conclusions; secondly, categorize these conclusions into categories based on similarity in meaning; and thirdly, to aggregate these to generate a set of statements that adequately represent that aggregation. These statements are referred to as synthesized findings - and they can be used as a basis for evidence-based practice. In order to facilitate this process, as with ensuring a common understanding of the appraisal criteria and how they will be applied, reviewers need to discuss synthesis and work to common understandings on the assignment of categories, and assignment to synthesized findings.

The aim of synthesis is for the reviewer to establish synthesized findings by bringing together key conclusions drawn from all of the included papers. Conclusions are principal opinion statements embedded in the paper by the reviewer(s) after examining the text in the paper. It is for this reason that reviewers are required to read and re-read the paper closely to identify the conclusions to be generated.

Once all information on a review is collected (see section on extraction) in the form of extractions and conclusions, the conclusions can be allocated by the reviewer on the basis of similarity to user defined "Categories". Categories are groups of conclusions that reflect similar relationships between similar phenomena, variables or circumstances that may inform practice.

Categorizing is the first step in aggregating conclusions and moves from a focus on individual papers to the conclusions as a whole. To do this, the reviewer needs to read all of the conclusions from all the papers to identify categories.

To synthesize the categories, the reviewer needs to consider the full list of categories and identify categories of sufficient similarity in meaning to generate synthesized findings. A synthesis is defined as a group of categorized conclusions that allows for the generation of recommendations for practice.

Conflict of Interest

A statement should be included in every review protocol which either declares the absence of any conflict of interest, or which describes a specified or potential conflict of interest. This may relate to things such as commercial funding of review activity or other professional affiliations that may be considered as a potential influence on the conduct and outcomes of the review.

Acknowledgements

The source of financial grants and other funding must be acknowledged, including a frank declaration of the reviewers' commercial links and affiliations. The contribution of colleagues or Institutions should also be acknowledged.

References

Protocols are required to use Vancouver style referencing. References should be numbered in the order in which they appear with superscript Arabic numerals in the order in which they appear in text. Full reference details should be listed in numerical order in the reference section.

More information about the Vancouver style is detailed in the International Committee of Medical Journal Editors' revised 'Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication', and can be found at <http://www.ICMJE.org/>

Appendices

Appendices should be placed at the end of the protocol and be numbered with Roman numerals in the order in which they appear in text. At a minimum this will include critical appraisal and data extraction tools.

Conclusion

As with any research endeavor, the development of a rigorous proposal or protocol is vital for producing a high quality systematic review. This predetermined plan ensures the rigor of process and facilitates effective updates when necessary, which in a climate of continuous information production is imperative. As with a primary research study every effort should be made to adhere to the criteria set out in the protocol as the systematic review progresses. The investment of time in this process is the best guarantee of a positive outcome and a high quality review.

Chapter 5:

Searching for the Evidence

Introduction

Once a question, issue or problem has been identified from the field and a protocol developed the next step is to find the evidence. In order to do this it is necessary to have knowledge of techniques used to unearth the evidence and make it available. Although systematic reviews and practice guidelines are designed to save practitioners time by presenting condensed information, it is important that these summaries of information are open to assessment, and this can only be ensured by accessing the process used in the review. Just as research (whether published or unpublished) can vary in quality, so can a search for the evidence.

Developing a search strategy is not an easy task. It is highly complex and requires a great deal of skill. Working closely with a librarian can be a great benefit to this process, particularly when searching for narrative, opinion and text. This chapter examines sources of narrative, opinion and text and presents strategies to use search engines that consider the “grey literature”.

Search Strategy

Developing a search strategy for Opinion and Text-based evidence

There are a range of databases that are relevant to finding expert opinion based literature. Examples include CINAHL, PubMed, CRD database from the NHS Centre for Reviews and Dissemination, University of York, PsychINFO, National Guideline Clearing House and Cochrane Library.

Search terms for text and opinion papers

Search filters are pre-tested strategies that identify articles based on criteria such as specified words in the title, abstract and keywords, e.g. testimony, expert opinion. They can be of use to restrict the number of articles identified from the vast amount of literature in the major databases. Search filters look for sources according to relevance, not the quality of the article or citation itself. Quality judgments are performed separately and require skills in critical appraisal.

Databases and terms for identifying expert opinion

A research librarian should be able to assist with development of a search strategy for textual evidence.

Grey or Gray Literature, Deep Web searching

Developing a Search Strategy for Grey literature

Since the mid-1980s and particularly since the explosion of the Internet and the opportunity to publish electronically all kinds of information, there has been an ‘information revolution’. This revolution is making it increasingly impossible for people to read everything on any particular subject. In this case medicine, healthcare, nursing or any other evidence-based practices

are no exception. There is such a huge amount of data being written, published and cited that Internet search engines and medical specialist databases such as MEDLINE, EMBASE, CINAHL, Cochrane Library, PsycINFO, cannot hope to catalogue or index everything. There are bound to be valuable sources of medical evidence, which can nonetheless prove useful when doing systematic reviews, but have not been 'captured' by commercial electronic publishers.

Grey (or gray – alternative spelling) literature includes documents such as:

- Technical reports from government, business, or academic institutions
- Conference papers and proceedings
- Preprints
- Theses and dissertations
- Newsletters
- raw data such as census and economic results or ongoing research results

The US Interagency on Gray Literature Working Group (1995) defined grey literature (or 'grey lit' as it is sometimes referred to in the information management business) as: "foreign or domestic open source material that usually is available through specialized channels and may not enter normal channels or system of publication, distribution, bibliographical control or acquisition by booksellers or subscription agents". (University of New Mexico, 2007)

Furthermore, grey literature has been defined as:

That which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers moves the field of grey literature beyond established borders into new frontiers, where lines of demarcation between conventional/non-conventional and published/unpublished literature cease to obstruct further development and expansion. At the same time, this new definition challenges commercial publishers to rethink their position on grey literature. (The Joanna Briggs Institute, 2008)

When building a search strategy for grey literature, it is important to select terms specifically for each source. In using mainstream databases, or Google-type searches (including GoogleScholar), it is best to draw from a list of keywords and variations developed prior to starting the search. To be consistent and systematic throughout the process, using the same keywords and strategy is recommended. It is important to create a strategy, compile a list of keywords, wildcard combinations and identify organizations that produce grey literature. If controlled vocabularies are used, record the index terms, qualifiers, keywords, truncation, and wildcards.

Searching the medical grey literature can be time-consuming because there is no 'one-stop shopping' database or search engine that indexes materials the way, for example as CINAHL does for nursing and allied health or MEDLINE does for the biomedical sciences. The Mednar database indexes qualitative grey literature articles and may be useful

<http://mednar.com/mednar/>

as may the Qualitative times website

<http://www.qualitativeresearch.uga.edu/QualPage/>

It should be remembered that your access to bibliographic databases may depend on the subscriptions taken by your library service and the search interface may also vary depending on the database vendor, for example Ovid, EBSCO, ProQuest, etc. or whether you access MEDLINE via the free PubMed interface:

The following search engines are very useful for finding health-based scientific literature:

<http://www.scirus.com>
<http://www.metacrawler.com>
<http://www.disref.com.au/>
<http://www.hon.ch/Medhunt/Medhunt.html>
<http://www.medworld.stanford.edu/medbot/>
<http://sumsearch.uthscsa.edu/cgi-bin/SUMSearch.exe/>
<http://www.intute.ac.uk/healthandlifesciences/omnilost.html>
<http://www.mdchoice.com/index.asp>
<http://www.science.gov/>
<http://www.eHealthcareBot.com/>
<http://medworld.stanford.edu/medbot/>
<http://omnimedicalsearch.com/>
<http://www.ingentaconnect.com/>
<http://www.medical-zone.com/>

Scirus (<http://www.scirus.com>), for example, is a science-specific search engine with access to over 410 million science-related web pages (as of February 2011), and it indexes sites that other search engines do not. Its medical sites include ArXiv.org, Biomed Central, Cogprints, DiVa, LexisNexis, and PsyDok. PsyDok is a disciplinary Open Access repository for psychological documents. PsyDok is operated by Saarland University and State Library (SULB), which also hosts the special subject collection psychology and the virtual library psychology. PsyDok is a free, full-text e-print archive of published, peer-reviewed journal post-prints plus pre-publications, reports, manuals, grey literature, books, journals, proceedings, dissertations and similar document types.

Search the World Wide Web for higher level - usually government-affiliated-funding bodies, for instance Australia's NHMRC (National Health and Medical Research Council) or MSAC (Medical Services Advisory Committee) for pointers to reports such as clinical trials or reviews from funded research programs.

Be aware that there are health information gateways or portals on the Internet containing links to well organized websites containing primary research documents, clinical guidelines, other sources and further links. For example:

- World Health Organization, <http://www.who.int/library/>
- National Institute on Alcohol Abuse and Alcoholism, <http://www.niaaa.nih.gov/>
- Canadian Health Network, <http://www.canadian-health-network.ca/customtools/homee.html>

- Health Insite, <http://www.healthinsite.gov.au/>
- MedlinePlus, <http://www.nlm.nih.gov/medlineplus>
- National Guidelines Clearinghouse, <http://www.guideline.gov/index.asp>
- National Electronic Library for Health (UK), <http://www.nelh.nhs.uk/>
- Partners in Information Access for the Public Health Workforce, <http://phpartners.org/guide.html>
- Clinical guidelines sites

Identify universities, colleges, institutes, collaborative research centers (CRCs) nationally and internationally that have profiles or even specializations in your area of interest, and check their library websites – they should provide a range of relevant resources and web links already listed. For example, theses or dissertations are generally included on universities' library pages because these have to be catalogued by library technicians according to subject heading, author, title, etc. University library pages will also have links to other universities' theses collections, for example:

- Dissertation Abstracts
- Theses Canada Portal
- Networked Digital Library of Theses and Dissertations (NDLTD)
- Index to Theses

Search academic libraries' Online Public Access Catalogues (OPACS), which are excellent sources of grey literature in that these catalogues provide access to local and regional materials, are sources for bibliographic verification, they index dissertations, government and technical reports, particularly if the authors are affiliated with the parent organization or agency as scholars or researchers

Authors, if in academic positions, sometimes have their own web pages. Find home pages for specific researchers - either by navigating through their institution's home page or by Internet.

Contact others working in the same/similar area to see if they already have reference lists they are prepared to share or names of others working in the same/related fields, for example contact authors of Cochrane protocols that are not yet completed. This is especially useful for clinicians because they know who works in their specific area of interest.

Identify any conference series in the area of interest. You will find these in academic or national libraries due to the legal deposit rule.

Many national libraries collect grey literature created in their countries under legal deposit requirements. Their catalogues are usually available on the Internet. Some also contain holdings of other libraries of that country, as in the Australian National Library's Libraries Australia: <http://librariesaustralia.nla.gov.au/apps/kss> If you want to conduct an international search, be aware of the existence of WORLDCAT, a service which aims to link the catalogues of all major libraries under one umbrella. <http://www.worldcat.org/>

The media often reports recent medical or clinical trials so check newspaper sites on the Internet. Take note (if you can) of who conducted the trial, where, when, the methodology used, and nature of experimental group or groups so you can locate the original source.

Set up 'auto alerts' if possible on key databases so that you can learn about new relevant material as it becomes available.

Join a relevant web discussion group/list and post questions and areas of interest; your contacts may identify leads for you to follow.

Grey literature is increasingly referenced in journal articles, so reference lists should be checked via hand-searching. Hand searching is recommended for systematic reviews because of the hazards associated with missed studies. Hand searching is also a method of finding recent publications not yet indexed by or cited by other researchers.

Finding grey literature on a government website

Generally, most health or medicine-related government-sponsored or maintained websites will go to the trouble of showing:

- a) how or if their documents are organized alphabetically, topically or thematically;
- b) how individual documents are structured, i.e. contents pages, text, executive summary, etc.;
- c) database-type search strategies to find them;
- d) links to other web sites or other documents that are related to the documents that they produce;
- e) when their collection of grey literature has been updated; and
- f) documents in PDF or Microsoft Word downloadable form.

A brief grey literature case study

Consider a search on the topic: "Acupuncture in the management of drug & alcohol dependence". With this query you may wish to explore the effectiveness of acupuncture in the management of drug and alcohol dependence. The goal of this study is to uncover as many randomized controlled trials (RCTs) as possible, and to perform a meta-analysis on the data.

Step One – Mainstream Database Search

Do your initial research in the mainstream databases, such as:

PudMed

EMBASE

CINAHL

Cochrane Library

BIOSIS (Biological Abstracts)

PsycINFO

Sociological Abstracts

AMED – Allied and Complementary Medicine Database

There may be a fair bit of duplication between some of these but you should also note down (perhaps as two separate columns) two things: (a) the keywords or terms used in acupuncture-related medical treatment not forgetting to check if the database uses a thesaurus or controlled

vocabulary of indexing terms; and (b) the names of institutions, organizations, agencies, research groups mentioned.

The terminology that you could use in various combinations when searching, (including wildcards and truncation, which may vary from database to database and should therefore be checked), may include the following:

acupuncture, meridian, acupressure, electroacupuncture, shiatsu, drug, polydrug, substance, alcohol, tranquilize, tranquilizer, narcotic, opiate, solvent, inhalant, street drug, prescri, non-prescri*, nonprescri*, abuse, use, usin*, misus*, utliz*, utilis*, depend, addict, illegal, illicit, habit, withdraw, behavio*, abstinen*, abstain*, abstention, rehab, intox*, detox*, dual, diagnosis, disorder. [Note - in the example, the * has been used to indicate either a wildcard or truncation symbol.]*

Step Two - Contacting Directories and Organisations

Do a Yahoo or Google Search using keywords Acupuncture, Alternative Medicine, Alternative Medicine databases, Acupuncture Organizations, in combination with the terms from your initial database search. Remember that Google.com 'Advanced Search' is best for this part of the search as it allows you to 'limit' your inquiry in many ways (go to http://www.google.com.au/advanced_search?hl=en).

For our topic, here are a few organizations that are relevant to your search:

- ETOH - Alcohol and Alcohol Problems Science Database, referred to as ETOH, <http://etoh.niaaa.nih.gov/Databases.htm>
- National Institute on Alcohol Abuse and Alcoholism (NIAAA), <http://www.niaaa.nih.gov/>
- National Institute on Drug Abuse (NIDA), <http://www.nida.nih.gov/>
- Canadian Centre on Substance Abuse (CCSA), <http://www.ccsa.ca/CCSA/EN/TopNav/Home/>
- National Center for Complementary and Alternative Medicine (NCCAM), <http://nccam.nih.gov/health/acupuncture/>
- National Acupuncture Detoxification Association (NADA), <http://www.acudetox.com>

Step Three – Finding and Searching Specialized Databases for Grey Literature

Contacting relevant organizations noted in your mainstream database search is a good way to assess what resources exist in the form of special databases, library catalogues, etc. Some websites have resources providing a 'jumping-off' point for your search deeper into the World Wide Web. Finding the web sites in Step Two and 'digging deeper' into them will enable you to discover the documents they have, and their links to more precise sites with databases that specialize in acupuncture issues. Examples of these are as follows:

- HTA Database, <http://144.32.150.197/scripts/WEBC.EXE/NHSCRD/start>
- The Traditional Chinese Drug Database (TCDBASE), <http://www.cintcm.com/index.htm>
- Drug Database (Alcohol and other Drugs Council of Australia), <http://203.48.73.10/liberty3/gateway/gateway.exe?application=Liberty3&displayform=opac/main>
- Canadian Centre for Substance Abuse, http://www.ccsa.ca/CCSA/EN/Addiction_Databases/LibraryCollectionForm.htm
- Combined Health Information Database (CHID), <http://chid.nih.gov/search/>

Grey literature differs from other published literature in that it is:

- Not formally part of 'traditional publishing models'. Producers, to name a few, include research groups, non-profit organizations, universities and government departments.
- In many cases high-quality research still waiting to be published and/or indexed.
- Not widely disseminated but nonetheless important in that an infrastructure does exist to disseminate this material and make it visible.
- Some organizations create their own reports, studies of trials, guidelines, etc.
- Specialized strategies are still needed to facilitate identification and retrieval.

Librarians try to adopt pro-active approaches to finding this material, though web-based searching, self-archiving and open access are helping to facilitate access. If you have access to a library service, your librarian should be able to assist you in your quest for uncovering the grey literature in your area of interest.

Intute is a free online service providing access to the very best web resources for education and research. All material is evaluated and selected by a network of subject specialists to create the Intute database.

<http://www.intute.ac.uk/> This database includes pre-vetted resources by subject-specialists in areas of health, science, tech, social sciences, and arts/ humanities. Intute has an effective search option that can be browsed by MeSH or by keywords.

With millions of resources available on the Internet, it is difficult to find relevant and appropriate material even if you have good search skills and use advanced search engines.

Issues of trust, quality, and search skills are very real and significant concerns - particularly in a learning context. Academics, teachers, students and researchers are faced with a complex environment, with different routes into numerous different resources, different user interfaces, search mechanisms and authentication processes.

The Intute database makes it possible to discover the best and most relevant resources in one easily accessible place. You can explore and discover trusted information, assured that it has been evaluated by specialists for its quality and relevance.

<http://mednar.com/mednar/> Mednar is a one-stop federated search engine therefore non-indexing, designed for professional medical researchers to quickly access information from a multitude of credible sources. Researchers can take advantage of Mednar's many tools to narrow their searches, drill down into topics, de-duplicates, ranks and clusters results as well as allowing you to discover new information sources. Comprehensively searches multiple databases in real time, instead of crawling and indexing static content like Google or many meta-search engines, Mednar queries select, high quality databases to search simultaneously. It utilizes the native search tools available at each of the 47 related sites/databases. If you follow the search links, you'll find a search box at all of the sources.

<http://worldwidescience.org/index.html> Another Deep Web search mechanism, WorldWideScience.org is a global science gateway connecting you to national and international scientific databases and portals. WorldWideScience.org accelerates scientific discovery and progress by providing one-stop searching of global science sources. The WorldWideScience Alliance, a multilateral partnership, consists of participating member countries and provides the governance structure for WorldWideScience.org.

It's very good for a global perspective, includes OpenSIGLE, Chinese, Indian, African, Korean, etc, sources and the database interface has only been in existence since June 2007.

Thesis/Dissertations

ProQuest Dissertations & Theses Database (PQDT)

With more than 2.3 million entries, the ProQuest Dissertations & Theses (PQDT) database is the most comprehensive collection of dissertations and theses in the world. Graduate students customarily consult the database to make sure their proposed thesis or dissertation topics have not already been written about. Students, faculty, and other researchers search it for titles related to their scholarly interests. Of the millions of graduate works listed, we offer over 1.9 million in full text format. PQDT is a subscription database, so consult your library for availability.

Dissertation Abstracts Online (DIALOG) is a definitive subject, title, and author guide to virtually every American dissertation accepted at an accredited institution since 1861. Selected Masters theses have been included since 1962. In addition, since 1988, the database includes citations for dissertations from 50 British universities that have been collected by and filmed at The British Document Supply Centre. Beginning with DAIC Volume 49, Number 2 (Spring 1988), citations and abstracts from Section C, Worldwide Dissertations (formerly European Dissertations), have been included in the file.

Abstracts are included for doctoral records from July 1980 (Dissertation Abstracts International, Volume 41, Number 1) to the present. Abstracts are included for masters theses from Spring 1988 (Masters Abstracts, Volume 26, Number 1) to the present.

Individual, degree-granting institutions submit copies of dissertations and theses completed to University Microfilms International (UMI). Citations for these dissertations are included in the database and in University Microfilms International print publications: Dissertation Abstracts International (DAI), American Doctoral Dissertations (ADD), Comprehensive Dissertation Index (CDI), and Masters Abstracts International (MAI). A list of cooperating institutions can be found in the preface to any volume of Comprehensive Dissertation Index, Dissertation Abstracts International, or Masters Abstracts International.

Searching for text and opinion evidence

A research librarian should be able to assist with development of a search strategy for textual evidence. Examples of search strategies for finding expert opinion based literature are as follows:

BioMedCentral

Opinion and text-based evidence as part of research articles can be found using the 'Advanced' searching strategy (with filter option as needed) only over any time period and the keyword results are as follows:

- 'expert' [title] and 'opinion' [title]
- 'expert opinion' [title – exact phrase]
- 'editorial' [title] and 'opinion' [title]
- 'opinion' [title] and 'evidence' [title, abstract and text]

'editorial opinion' [title – exact phrase]

'medical' [title] and 'experts' [title]

clinical' [title] and 'knowledge' [title]

opinion-based' [title, abstract and text]

'opinions' [title]

'expert opinion' [title, abstract and text]

'testimony' [title, abstract and text]

'comment' [title]

'opinion-based' [title, abstract and text] and 'evidence' [title, abstract and text]

Also use Boolean search strategy for any combination of the above terms.

National Guideline Clearinghouse (NGC)

The home page (<http://www.guideline.gov/>) is the starting point for searching for opinion/expert/text-based evidence on this U.S.-based site. NGC uses several search strategies, including Boolean, phrase searching, concept mapping, keyword or text word, parentheses (go to <http://www.guideline.gov/help/howtosearch.aspx>).

Cochrane Library

There are several ways to use Cochrane Library to find opinion or expert-related evidence.

MeSH Searching

Cochrane Library has the same MeSH identifiers as MEDLINE and the CRD databases, so use them to find expert opinion-type evidence in Cochrane.

Exact phrase searching

Use double quotation marks around terms in 'Search' box [option to use is Title, Abstract or Keywords].

"opinion-based"

"expert testimony"

"medical expert"

"personal opinion"

"clinical opinion"

"medical opinion"

"editorial comment"

"commentary"

Advanced Searching

Boolean Central boxes permit you to specify individual search terms or phrases; right-hand boxes are for selecting field (author, keywords, all text); left-hand boxes for Boolean operators. Results of Boolean searching with Title, Abstract and Text option:

expert AND opinion

opinion AND based AND evidence

opinion-based AND evidence
expert-based AND evidence
expert AND opinion AND evidence
expert AND testimony
editorial AND comment AND evidence
editorial AND opinion AND evidence
editorial AND commentary AND evidence

Searching by Restriction

Use the Restrict Search by Product section to limit the search to a specific Cochrane Library database or databases.

PubMed

The search strategy for citations will involve two kinds: text word and MeSH:

Examples of keyword/phrase searching

Typing in 'expert opinion' will be a very broad search term and locate a large number of hits, so this needs to be refined. Use the 'Limits' screen to filter according to needs, for example: title/abstract; humans, English language, full-text; date range 2001–2011 ('published in the last 10 years').

MeSH searching

The relevant Subject Headings are:

- (i) Expert Testimony – use for: expert opinion; expert opinions; opinion, expert
- (ii) Comment [Publication Type] – use for commentary, editorial comment, viewpoint
- (iii) Editorial [Publication Type] – scope note: 'the opinions, beliefs, and policy of the editor or publisher of a journal. . . on matters of medical or scientific significance to the medical community or society at large'.

In PubMed, Subject Headings can be searched in conjunction with subheadings. For example, Expert Testimony has the following: 'economics', 'ethics', 'history', 'legislation and jurisprudence', 'methods', 'standards', 'statistics and numerical data', 'trends', 'utilization'.

Documenting a search strategy

One of the major strengths of a systematic review is the systematic approach to identifying relevant studies. An important factor in this process is documenting the search and the findings of the search. Commonly, electronic databases are used to search for papers, many such databases have indexing systems or thesauruses, which allow users to construct complex search strategies and save them as text files. These text files can then be imported into bibliographic software such as Endnote for management. The documentation of search strategies is a key element of the scientific validity of a systematic review. It enables readers to look at and evaluate the steps taken, decisions made and consider the comprehensiveness and exhaustiveness of the search strategy for each included database. Any restrictions to the search such as timeframe, number of databases searched and languages should be reported

in this section of the report and any limitations or implications of these restrictions should be discussed in the discussion section of the review.

Each electronic database is likely to use a different system for indexing key words within their search engines. Hence the search strategy will be tailored to each particular database. These variations are important and need to be captured and included in the systematic review report. Additionally, if a comprehensive systematic review is being conducted through CReMS, the search strategies for each database for each approach are recorded and reported via CReMS and are added as appendices.

Regardless of the specific review approach adopted (e.g. qualitative or quantitative), the search strategy needs to be comprehensively reported. Commonly, electronic databases are used to search for papers, many such databases have indexing systems or thesauruses, which allow users to construct complex search strategies and save them as text files. The documentation of search strategies is a key element of the scientific validity of a systematic review. It enables readers to look at and evaluate the steps taken, decisions made and consider the comprehensiveness and exhaustiveness of the search strategy for each included database.

Managing references

Bibliographic programs such as EndNote can be extremely helpful in keeping track of database searches. A research librarian or information scientist is also an extremely useful resource when conducting the search.

Conclusion

Doing a comprehensive search is time consuming, laborious and requires a degree of commitment and skill. The logistics of undertaking this process, particularly for evidence that is derived from narrative, opinion and text, need to be well thought through. It is important to be clear about what databases and other resources are going to be most useful in identifying the type of evidence required and what can be accessed and searched reasonably and within the constraints of the review process. This is true for a systematic review of any type of evidence, but is particularly important for reviews that aim to identify 'gray' or unpublished literature that may take the form of reports from governments, academia, business or industry. However, if taken seriously and conducted in a thorough and transparent manner, a search for this type of evidence can produce pragmatic and useful information that can reasonably be assessed for quality and included in a review.

Chapter 6:

Appraising the Evidence

Introduction

This chapter will present a practical system to critically appraise narrative, expert opinion and text. The types of data generated from different types of research (both quantitative and qualitative) require different strategies for critical appraisal, data extraction and data analysis and/or synthesis. Similarly, the nature of these activities is unique for evidence derived from non-research publications. All papers selected for inclusion in a systematic review (that is, those that meet the selection criteria described in the protocol) need to be subjected to rigorous appraisal by two reviewers. This is true of the review process regardless of the nature of the evidence being examined. The purpose of this appraisal process is to include only the information that is deemed to be of the highest quality and exclude the rest, as the purpose of the review is to summarize only the best available evidence.

Critical appraisal is a challenging component of any review with the aim being to assess the validity of the information (in this case usually expert opinion) as a source of guidance for practice when the results of rigorous inquiry do not exist. Whether it is expressed by an individual, by a learned body, or by a group of experts in the form of consensus guidelines, expert opinion draws on the experience of practitioners. Thus, validity in this context is related to the soundness of opinion in terms of its logic and its ability to convince, the authority of the source and the quality of the opinion that renders it supportable. While expert opinion is rightly claimed to not be the product of 'good' science, it is empirically derived and mediated through the cognitive processes of practitioners who have typically been trained in scientific method. This is not to say that the superior quality of evidence derived from rigorous research is to be denied. However, in the absence of evidence derived from rigorous research, it is not appropriate to discount expert opinion as a valid source of evidence to inform clinical decision-making.

Pearson (2003) describes a process designed to examine text in documents, reports and consensus guidelines. The process seeks to locate major themes in the text or narrative that represent expert opinion. Approaches to critically appraise such nebulous and often conflicting data will always be tentative. That is not, however, a sufficient objection to rule out the use of a transparent process designed to identify the best available evidence for practice when the results of research are not available. Appropriate sources of such evidence are therefore any text in which an informed opinion on the benefits or otherwise of an intervention or practice is manifested. That is, any source (be it a journal article, editorial, book, report, guidelines or other publication) that informs practice that emanates from a source that is regarded as authoritative by practitioners.

Assessment of methodological quality

There is much dissent in the literature on the appropriateness of referring to expert opinion as evidence and there has been little work published on establishing criteria to assess the validity

of text that does not emerge from a rigorous process of inquiry. Thus, whatever process is utilized, it is important that the measures used to establish quality are transparent.

There are various tools available to critically appraise evidence of this nature and whichever tool is chosen it is important that both the primary and secondary reviewer undertakes the process. The two reviewers should discuss each item of appraisal for each paper included in their review. In particular, discussions should focus on what is considered acceptable to the needs of the review in terms of the characteristics of the text and opinion. The reviewers should be clear on what constitutes acceptable levels of information to allocate a positive appraisal compared with a negative, or response of “unclear”. This discussion should take place before conducting the appraisal, as each publication in a review should be assessed independently by both reviewers. The critical appraisal tool should be attached to the review.

Critical appraisal of Text or Expert opinion

The focus on limiting bias to establish validity in the appraisal of quantitative studies is not possible when dealing with text and opinion. In appraisal of text, the opinions being raised are vetted, the credibility of the source investigated, the motives for the opinion examined, and the global context in terms of alternate or complementary views are considered. Validity in this context therefore relates to what is being said, the source and its credibility and logic; and consideration of the overt and covert motives at play.

The following text works through the critical appraisal checklist items.

1. Is the source of opinion clearly identified?

Is there a named author? Unnamed editorial pieces in journals or newspapers, or magazines give broader license for comment, authorship should be identifiable.

2. Does the source of opinion have standing in the field of expertise?

The qualifications, current appointment and current affiliations with specific groups need to be stated in the publication and the reviewer needs to be satisfied that the author(s) has some standing within the field.

3. Are the interests of patients/clients the central focus of the opinion?

This question seeks to establish if the paper's focus is on achieving the best health outcomes or on advantaging a particular professional or other group? If the review topic is related to a clinical intervention, or aspect of health care delivery, a focus on health outcomes will be pertinent to the review. However, if for example the review is focused on addressing an issue of inter-professional behavior or power relations, a focus on the relevant groups is desired and applicable. Therefore this question should be answered in context with the purpose of the review. The aim of this question is to establish the author's purpose in writing the paper by considering the intended audience.

4. Is the opinion's basis in logic/experience clearly argued?

In order to establish the clarity or otherwise of the rationale or basis for the opinion, give consideration to the direction of the main lines of argument. Questions to pose of each textual paper include: What are the main points in the conclusions or recommendations?

What arguments does the author use to support the main points? Is the argument logical? Have important terms been clearly defined? Do the arguments support the main points?

5. *Is the argument that has been developed analytical? Is the opinion the result of an analytical process drawing on experience or the literature?*

Does the argument present as an analytical construct of a line of debate or does it appear that ad hoc reasoning was employed?

6. *Is there reference to the extant literature/evidence and any incongruence with it logically defended?*

If there is reference to the extant literature, is it a non-biased, inclusive representation, or is it a non-critical description of content specifically supportive of the line of argument being put forward? These considerations will highlight the robustness of how cited literature was managed.

7. *Is the opinion supported by peers?*

This relates to peer opinion that has been published rather than peers in the sense of a colleague. To ascertain if the opinion expressed has wider support, consider also if the author demonstrated awareness of alternate or dominant opinions in the literature and provided an informed defense of their position as it relates to other or similar discourses.

An example checklist for critical appraisal is provided at Appendix I.

Conclusion

Critically appraising evidence is complex, time consuming and characterized by an ongoing debate on how quality can best be determined across the broad spectrum of evidence types. In particular, establishing the validity of evidence located within narrative, text and opinion based literature is something of a methodological and political minefield. While there is a need for further research on the criteria for assessing the validity of all types of evidence, which in turn will assist with improving the standards of reporting, it remains a vital component of any systematic review. Critical appraisal of narrative, opinion and text is, perhaps, one of the most difficult components of the systematic review process, but will ensure that the final product includes meaningful information upon which to base practice that results in improved outcomes for patients.

Chapter 7:

Synthesizing the Evidence

Introduction

This chapter describes how to extract and aggregate textual data and presents a practical system to manage this process. Data utilized in a systematic review are collected with the aid of a data collection tool. Data is collected in this way in order to ensure that all of the relevant data is collected, to minimize the risk of transcription errors while data is collected, to allow the accuracy of data to be checked and to serve a record of the data collected. Although the actual data collected will vary according to the type of review being conducted it always relates to the review question and this is no different for a review of text and opinion.

Extracting data from Text and Opinion

As detailed in the protocol section in Chapter 4, this section of the review should include details of the types of data extracted for inclusion in the review. An extraction of narrative, opinion and text may include up to ten fields relating to the type of text, its authors and participants, and the content of the paper. For example:

1. Types of Text

The type of opinion being reported, for example an expert opinion, a newspaper article, or a guideline.

2. Those Represented

To whom the paper refers.

3. Stated Allegiance/Position

A short statement summarizing the main thrust of the publication.

4. Setting

Setting is the specific location, for example nursing home, hospital or dementia-specific ward in a sub-acute hospital.

5. Geographical Context

The Geographical Context is the location of the opinion - be as specific as possible, for example Poland, Austria, or rural New Zealand.

6. Cultural Context

The Cultural Context refers to the cultural features in the publication setting, such as, but not limited to: time period (16th century); ethnic groupings (indigenous nationalities); age groupings (e.g. older people living in the community); or socio-economic groups (e.g. working class). When entering information be as specific as possible. This data should identify cultural features such as employment, lifestyle, ethnicity, age, gender, socio-economic class, and time period.

7. Logic of Argument

An assessment of the clarity of the argument's presentation and logic. Is other evidence provided to support assumptions and conclusions?

8. Data Analysis

This section of the report should include any techniques that may have been used to analyze the data – e.g. named software program.

9. Author's Conclusion

Use this field to describe the main finding of the publication.

10. Reviewer's Comments

Use this field to summarize the strengths and weaknesses of the paper.

Either the primary or secondary reviewer can perform the extraction and an example form is provided at Appendix II.

The results section then focuses on providing a detailed description of the results of the review. For clarity and consistency of presentation, JBI recommends that the reviewers, in discussion with their review panel give consideration to whether the findings can be reported under the outcomes specified in the protocol.

Where a systematic review seeks to address multiple questions, the results may be structured in such a way that particular outcomes are presented under specific questions.

The role of tables and appendices should not be overlooked. Adding extensive detail on studies in the results section may “crowd” the findings, making them less accessible to readers, hence use of tables, graphs and in text reference to specific appendices is encouraged. Additionally, and significantly, the report structure should give consideration to the needs of the journal, for JBI systematic reviews, the preferred journal is the International Journal of Evidence-Based Health Care, details about this journal are available online.

It is important to include your data extraction tool of choice as an appendix to the review and that all of the extracted findings are discussed and assigned levels of credibility in the review.

Data Analysis

As the process relates to textual findings rather than numeric data, the need for methodological homogeneity – so important in the meta-analysis of the results of quantitative studies – is not a consideration. The meta-aggregation of findings of qualitative studies can legitimately aggregate findings from studies that have used radically different, competing and antagonistic methodological claims and assumptions, within a qualitative paradigm. Meta-aggregation in NOTARI does not distinguish between methodologies or theoretical standpoints and adopts a pluralist position that values viewing phenomena from different perspectives.

Data Synthesis

This section of the report should include how the findings were synthesized. Where meta-aggregation is possible, textual findings should be pooled however, if necessary, the reviewer

may use interpretive techniques to summarize the findings of individual papers. The processes for categorization and formulating synthesized findings will often mirror that of reviews of qualitative research.

Data synthesis should involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings rated according to their credibility, and categorizing these findings on the basis of similarity in meaning. These categories should then be subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible the findings can be presented in narrative form.

Prior to carrying out data synthesis, reviewers first need to establish, and then document:

- their own rules for setting up categories;
- how to assign conclusions (findings) to categories; and
- how to aggregate categories into synthesized findings.

Conclusions are principal findings reached by the reviewer(s) after examining the results of data analysis, for example themes, metaphors, consisting of a statement that relates to two or more phenomena, variables or circumstances that may inform practice. A reviewer can add conclusions to a study after an extraction is completed on that paper.

The JBI approach to synthesizing the conclusions of textual or non-research studies requires reviewers to consider the validity of each report as a source of guidance for practice; identify and extract the conclusions from papers included in the review; and to aggregate these conclusions as synthesized findings. To reiterate:

Findings are conclusions reached and reported by the author of the paper, often in the form of themes, categories or metaphors.

The most complex problem in synthesizing textual data is agreeing on and communicating techniques to compare the conclusions of each publication. The JBI approach uses the NOTARI analytical module for the meta-synthesis of opinion and text. This process involves categorizing and re-categorizing the conclusions of two or more studies to develop synthesized findings. In order to pursue this, reviewers, before carrying out data synthesis, need to establish their own rules on:

- how to assign conclusions to categories, and
- how to aggregate categories into synthesized findings.

Reviewers should also document these decisions and their rationale in the systematic review report.

Many text and opinion-based reports only develop themes and do not report conclusions explicitly. It is for this reason that reviewers are required to read and re-read each paper closely to identify the conclusions to be generated.

Each conclusion/finding should be assigned a level of credibility, based on the congruency of the finding with supporting data from the paper where the finding was found. Textual evidence has three levels of credibility:

Unequivocal - relates to evidence beyond reasonable doubt which may include findings that are matter of fact, directly reported/observed and not open to challenge

Credible - relates to those findings that are, albeit interpretations, plausible in light of the data and theoretical framework. They can be logically inferred from the data. Because the findings are interpretive they can be challenged.

Unsupported - is when the findings are not supported by the data

When all conclusions and supporting illustrative data have been identified, the reviewer needs to read all of the conclusions and identify similarities that can then be used to create categories of more than one finding.

Categorization is the first step in aggregating conclusions and moves from a focus on individual papers to consideration of all conclusions for all papers included in the review. Categorization is based on similarity in meaning as determined by the reviewers. Once categories have been established, they are read and re-read in light of the findings, their illustrations and in discussion between reviewers to establish synthesized findings. NOTARI sorts the data into a meta-synthesis table or "NOTARI-View", when allocation of categories to synthesized findings (a set of statements that adequately represent the data) is completed. These statements can be used as a basis for evidence-based practice.

Results and reporting

The components of a systematic review report will, to a large extent, mirror the content of the original systematic review protocol. As with the protocol, there should be a comprehensive background to the review that outlines the reasons and rationale for conducting the review. It should also include a description of the objectives of the review, the criteria for considering papers in the review, the search strategy and methods for critical appraisal, data extraction and synthesis as outlined previously in this book. In addition to these components, the report should include, of course, the results of the synthesis and a rigorous summary and discussion of the identified literature, addressing issues arising out of the conduct of the review (such as limitations) and appropriate recommendations for both further research and for practice.

The core of evidence based practice is the systematic review and the need for synthesised, easily accessible evidence to inform clinical decision making has never been greater as the time poor health professional battles with an ever increasing volume of information. In addition, the body of knowledge upon which health professionals base their practice is evolving and thus it is important that the results of systematic reviews are documented, published and, where possible, additional products derived from them in order to make them as accessible and easy to utilise as possible.

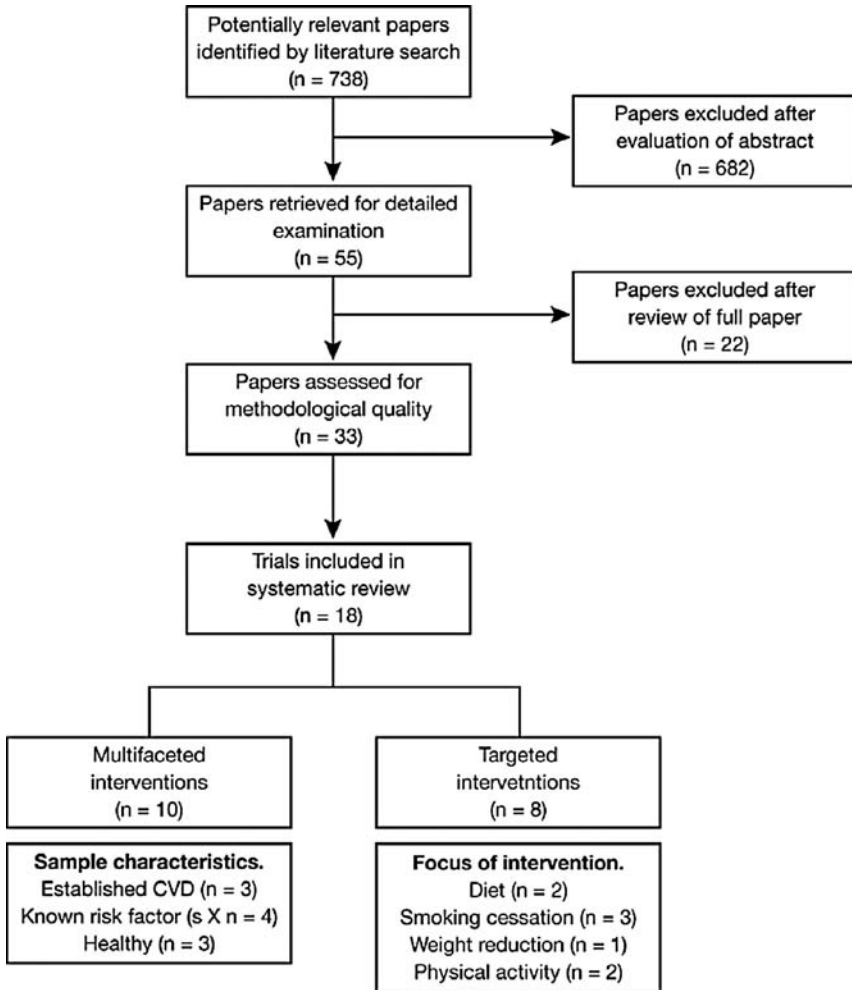
Description of publications

This section should include the type and number of papers identified by the search and the numbers of studies that were included and excluded from the review. A flowchart such as that shown in Figure 3.

The results section should be framed in such a way that as a minimum, the following fields are described or given consideration by the reviewers in preparing their systematic review report:

Papers: Numbers of studies identified, Numbers of retrieved Papers, Numbers of appraised Papers, Numbers of excluded Papers and overview of reasons for exclusion, Numbers of included Papers

Figure 3: A Flowchart of Search Results



The results section then focuses on providing a detailed description of the results of the review. Where a systematic review has several foci, the results should be presented in a logical, structured way, relevant to the specific questions. The role of tables and appendices should not be overlooked. Adding extensive detail on studies in the results section may “crowd” the findings, making them less accessible to readers, hence use of tables, graphs and in text reference to specific appendices is encouraged.

Review Findings

There is no standardized international approach to structuring how the findings of systematic reviews of textual or non-research evidence should be reported. The audience for the review

should be considered when structuring and writing up the findings. NOTARI-view graphs represent a specific item of analysis that can be incorporated in to the results section of a review. However, the results are more than the NOTARI-view graphs, and whether it is structured based on the intervention of interest, or some other structure, the content of this section needs to present the results with clarity using the available tools (NOTARI-view graphs, tables, figures) supported by textual descriptions.

Given there is no clear international standard or agreement on the structure or key components of this section of a review report, and the level of variation evident in published systematic reviews the parameters described in this section should be considered guidance for consideration rather than a prescription.

Discussion

This section should provide a detailed discussion of issues arising from the conduct of the review, as well as a discussion of the findings of the review and to demonstrate the significance of the review findings in relation to practice and research. Areas that may be addressed include:

- A summary of the major findings of the review
- Issues related to the quality of the research within the area of interest (such as poor indexing)
- Other issues of relevance
- Implications for practice and research, including recommendations for the future
- Potential limitations of the systematic review (such as a narrow search timeframe or other restrictions)

The discussion does not bring in new literature or findings that have not been reported in the results section but does seek to establish a line of argument based on the findings regarding the phenomenon of interest, or its impact on the outcomes identified in the protocol.

Conclusions

Implications for practice

Where evidence is of a sufficient level, appropriate recommendations should be made. The implications must be based on the documented results, not reviewer opinion. Recommendations must be clear, concise and unambiguous.

Implications for research

All implications for research must be derived from the results of the review, based on identified gaps, or on areas of weakness in the literature such as professional credibility of the authors. Implications for research should avoid generalized statements calling for further research, but should be linked to specific issues (such as longer follow up periods).

Developing recommendations

The Joanna Briggs Institute develops and publishes recommendations for practice with each systematic review, wherever possible. Across the different types of evidence and approaches to systematic reviews, a common approach is the construct of recommendations for

practice, which can be summed up as the requirement for recommendations to be phrased as declamatory statements.

Assigning levels of evidence

The Joanna Briggs Institute and its entities, assign a level of evidence to all recommendations drawn in JBI Systematic Reviews. The reviewers (in conjunction with their review panel) should draft and revise recommendations for practice and research, and include a level of evidence congruent with the research design that led to the recommendation. The JBI Levels of Evidence can be found in Appendix III.

The level of evidence relates to individual papers included in the systematic review. The levels of evidence reflect current international standards and expectations. However, as JBI takes a broader conceptual view of evidence, as reflected in the capacity to conduct reviews on the feasibility, appropriateness or meaningfulness of health care or health care experiences, the JBI levels of evidence incorporate particular criteria related to the appraisal of included studies, with the overall of assessing the trustworthiness of the evidence.

Conflict of Interest

A statement should be included in every review protocol that either declares the absence of any conflict of interest, or describes a specified or potential conflict of interest. Conflict of interest statements should adhere to the guidelines of the International Committee of Medical Journal Editors (ICMJE) for individual authors and project support (http://www.icmje.org/ethical_4conflicts.html). Additionally, the Committee on Publication Ethics (COPE) have extensive guidelines for conflict of interest statements that are intended to protect the authors as well as the readers, and review authors should ensure they are familiar with and adhere to the principals described within the COPE framework (<http://www.publicationethics.org/>).

Acknowledgements

The source of financial grants and other funding must be acknowledged, including a frank declaration of the reviewers' commercial links and affiliations. The contribution of colleagues or Institutions should also be acknowledged.

References

Protocols are required to use Vancouver style referencing. References should be numbered in the order in which they appear with superscript Arabic numerals in the order in which they appear in text. Full reference details should be listed in numerical order in the reference section.

More information about the Vancouver style is detailed in the International Committee of Medical Journal Editors' revised 'Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication', and can be found at <http://www.ICMJE.org/>

Appendices

The appendices should include:

- critical appraisal form(s);
- data extraction form(s);
- table of included studies; and
- table of excluded studies with justification for exclusion.

Conclusion

We have established that research is not always available to inform clinical decision-making and thus text and expert opinion are valid sources of evidence to inform practice. Although such evidence is not based on rigorous research processes it is never the less important to establish the validity of this information. While methods for the critical appraisal, extraction of data and synthesis of opinion and text are not necessarily widely accepted or promoted, transparent approaches to this endeavor will ensure an open and legitimate conceptual framework from which to start.

Data synthesis, regardless of the type of evidence, seeks to 'pool' the data extracted from like sources. Regardless of the approach taken to achieve this pooling of data it is important that an open and explicit process is utilized so that it may be critiqued and potentially replicated by others. There are important issues to be considered when undertaking this complex process, as outlined in this chapter.

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Appendices

Appendix I: Critical Appraisal Checklist for Narrative, Expert Opinion & Text

Reviewer _____ Date _____

Author _____ Year _____ Record Number _____

1. Is the source of the opinion clearly identified?
2. Does the source of the opinion have standing in the field of expertise?
3. Are the interests of patients/clients the central focus of the opinion?
4. Is the opinion's basis in logic/experience clearly argued?
5. Is the argument developed analytical?
6. Is there reference to the extant literature/evidence and any incongruence with it logically defended?
7. Is the opinion supported by peers?

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion):

Appendix II: Data Extraction for Narrative, Expert Opinion & Text

Reviewer _____ Date _____

Author _____ Year _____ Record Number _____

Study Description

Type of Text:

Those Represented:

Stated Allegiance/ Position:

Setting:

Geographical:

Cultural:

Logic of Argument:

Authors Conclusion:

Reviewers Comments:

Conclusions	Illustrations from publication	Evidence		
		Unequivocal	Credible	Unsupported

Appendix III: The JBI Levels of Evidence

Levels of Evidence	Feasibility F(1-4)	Appropriateness A(1-4)	Meaningfulness M(1-4)	Effectiveness E(1-4)	Economic Evidence
1	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Meta-analysis (with homogeneity) of experimental studies (eg RCT with concealed randomisation) OR One or more large experimental studies with narrow confidence intervals	Metasynthesis (with homogeneity) of evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
2	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	One or more smaller RCTs with wider confidence intervals OR Quasi-experimental studies (without randomisation)	Evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
3	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Cohort studies (with control group) b. Case-controlled c. Observational studies (without control group)	Evaluations of important alternative interventions comparing a limited number of appropriate cost measurement, without a clinically sensible sensitivity analysis
4	Expert opinion	Expert opinion	Expert opinion	Expert opinion, or physiology bench research, or consensus	Expert opinion, or based on economic theory

