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Evidence-based care and childbearing—a critical approach

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Abstract

Developing the best care for clients and patients is a paramount aim of all health care practices, which therefore, should be based on best evidence. This is also crucial for care during the childbearing period here defined as pregnancy, childbirth, and infancy. However, due to dominance of the evidence-based medicine (EBM) model, health care practice has encountered problems especially regarding its relationship to qualitative research. In this article, we analyze and discuss how research based on a lifeworld perspective fits with evidence-based care (EBC), and how a circular model instead of a hierarchy is suitable when attributing value to knowledge for EBC. The article focuses on the history of EBM and EBC, the power of the evidence concept, and EBC from a narrow to a broad view. Further qualitative research and its use for developing EBC is discussed and examples are presented from the authors' own lifeworld research in the Nordic childbearing context. Finally, an alternative circular model of knowledge for EBC is presented. In order to develop evidence-based care, there is need for multiple types of scientific knowledge with equal strength of evidence, integrated with clinical experience, setting, circumstances and health care resources, and incorporating the experiences and clinical state of the childbearing woman and her family.

Key words: Evidence-based care, evidence-based medicine, childbearing, Nordic countries, lifeworld research

Introduction

Developing the best care is paramount for all health care professionals and requires the search for evidence-based knowledge. The impetus for this article is an interest in developing good care during the childbearing period, here defined as pregnancy, childbirth, the neonatal period and infancy. Our research questions in these fields have mainly required qualitative methods, which in the evidence-based medicine (EBM) movement, have been ignored or even judged as non-evidence. The overall aim of this article is to analyze and describe how research based on a lifeworld perspective in childbearing fits with evidence based care (EBC), and how a circular model instead of a hierarchy one is suitable when attributing value to knowledge used

for EBC. We will begin by identifying EBM and its history; discuss the power of the evidence-concept; develop alternative broader definitions of EBC; describe research with a lifeworld perspective; provide examples from our own studies in the childbearing field; discuss the essential components of clinical practice and the perspective of unique woman and family; and conclude by proposing an alternative circular model of knowledge as the basis for developing EBC.

The history of evidence-based medicine and care

The EBM movement has its origins in the early 1970s, in a short monograph "Effectiveness and

efficiency. Random reflections on health services”, written by Archie Cochrane (1909–1988), a Scottish medical epidemiologist and strong advocate for conducting randomized controlled clinical trials (RCTs). Cochrane also criticized his medical colleagues for not practicing according to existing evidence (Cochrane, 1972; 1979). His ideas were communicated widely and quickly in the 1980s through an educational and training project for medical students in Canada and workshops for physicians. EBM was later defined by Sackett, Rosenberg, Gray, Haynes and Richardson (1996) as “conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients” (p. 71), to be obtained by integrating “individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett et al., p. 71). Invalid but previously accepted diagnostic tests and treatments were proposed for replacement with new more powerful, accurate, efficacious, and safer ones (Sackett et al., p. 71). Sackett and colleagues (1996) stressed that EBM should not be restricted to randomized trials and meta-analyses but involve locating the very best external evidence with which to answer clinical questions. Similar concepts have been developed for other professions, such as “evidence-based nursing”, “evidence-based midwifery”, and “evidence-based public health”. We prefer to use the concept “evidence-based care” (EBC) in this paper, a term which includes care performed by all health care professionals.

With the intention to remove bias, a hierarchy of research methods related to the level and strength of evidence has been identified. On the top of the hierarchy and labeled as the highest and best evidence, we find randomized controlled trials (RCT), systematic reviews of several RCTs, and evidence based practice guidelines based on reviews and RCTs. These have been labeled as the gold standard for judging whether a treatment is effective. Observational studies and other quantitative studies are judged as lower evidence. The level of evidence also depends on degree of association (Bellefleur & Bagshaw, 2006). Studies on experiential phenomena explored through a qualitative approach are not usually acknowledged in the hierarchy, are assessed as not a valid form of evidence at all, or are judged to provide a very weak level of evidence (DiCenso, Ciliska & Guyatt, 2005; Melnyk & Fineout-Overholt, 2005).

When using this model in defining the EBC in childbearing, the complexity of life and care explored by what and how questions are omitted. However, pregnancy, birth and family life are more than biological events (Page, Corkett, & McCandlish

2006), they are life-changing events (Bondas, 2005). For example, Hodnett et al., (2007) made a rigorous review of 16 RCTs and found that continuous support during childbirth resulted in the best outcomes of labor, reduced the likelihood of medication for pain relief, operative vaginal and caesarean births and five-minute Apgar score <7 after birth; and was connected with a positive experience of birth. However, the RCT review did not describe *how* this support was performed or the art of the relationship between the caregiver and the woman/her family. This lack of important information is not surprising, as *how*-questions are not answered in the RCTs but require other types of research based on a lifeworld approach.

The power of the evidence concept

The word ‘evidence’ is rooted in the Latin “*evidentis*“. It is a many-faceted concept which linguistically means to see and to gain insight into, and which is related to knowing. Semantically “evidence” has strongest ties to terms such as obvious, palpable, incontestable, natural, distinct, clear and proof. An etymological description of evidence, emphasizes seeing, to make something visible and beyond doubt (Eriksson, Nordman, & Myllymäki, 1999; Martinsen, 2006). However, a narrow use of the concept of evidence has been introduced by the EBM movement; it has been limited to measuring the effects of interventions; and it has in an uncritical way been imported to and integrated in the overall health care systems and practices. This demonstrates what has been stated before: Concepts are created by human beings; as soon as created, they begin to influence human beings and society.

To transfer a concept such as “evidence”, from one discipline (medicine) into others (such as nursing and midwifery) is possible but might create serious problems as the same assumptions cannot be met (cf. Morse, 2000; Martinsen, 2006). The borrowed concept needs to be examined to fit its purpose in the new context. Furthermore, a labeled concept should not be considered static but be viewed as dynamic and responsive to new knowledge and revised definitions (Meleis, 2007). Likewise, problems arise when “scientific” and “everyday” concepts are mixed. A scientific concept such as ‘evidence based medicine’ has specific defined attributes created by scholars and ascribed to specific contexts. Confusion arises when this scientific concept is used indiscriminately as an everyday concept (Morse, 2000).

This is what has happened with the EBM as well as the EBC concept. The scientific concept of “evidence” has become an everyday concept in

clinical practice; it is used as being the answer to everything. Health care professionals, researchers, and policy makers addressing the concept do not seem to know the original meaning, its epistemology or what questions it is supposed to answer. People seldom dare to criticize someone who talks about EBM or EBC in this sense. With the aim to reach political and medical legitimacy, claims such as “care should be evidence-based” do not only relate to strategies to use the best available evidence for developing best care; rather the claim has become an ideology. This seems to be the case also with regard to care during the childbearing period.

Evidence-based care from a narrow to a broad view

There are numerous weaknesses of the EBM movement. The primary weakness is the claim that there is one truth to be discovered rather than many truths to be interpreted (Zuzelo, 2007). Another is the hierarchical attribution of value of research methods in which only knowledge derived from natural science is accepted (Jenicek, 2006).

We do not believe in this one way of thinking and knowing at the expense of other paths to knowledge. Research with epidemiological and statistical approaches is only one way of developing knowledge, but one of several components in good quality care. In addition, we believe that all research methods possess shortcomings. This includes RCTs, lauded as the “gold standard” among the users of these research designs (Haynes, 2002). It is neither always possible nor ethical to randomize patients/clients to different types of care, using one intervention for one individual and a second to another. A major question is how often results from controlled studies as RCTs are appropriately transferable to practice and unique individual care?

Essential for developing EBC is to perform research within the human science. EBM is developed within natural science aimed at being used within biomedicine. However, it is the incorporation of EBM in the human science field that creates problems. When phenomena in everyday life of human beings are studied within the EBM paradigm, they are only accepted in a structured questionnaire; the respondent answers matters that the researchers have defined as important to answer, not what is essential from the person’s own point of view. The only legitimacy for using open-ended questions is to develop fixed questions in a future standardized questionnaire. This results in omitting the lifeworld perspective, which is the vehicle for each individual’s experiences, existence, and access to the world (cf. Merleau-Ponty, 1945/ 1995). This

approach restricts development of good care. In the context of childbearing, this attitude has resulted in a one-sided focusing upon the biomedical aspects and outcomes of childbirth. Other approaches are needed to explore the complexity of the human being, such as being a birthing woman or a parent of an infant being cared for in a neonatal care unit. RCTs cannot provide insight into experiences that concern humanistic and existential values such as courage, joy, sorrow, loss, longing, caring, suffering, death and hope (cf. Martinsen, 2006), phenomena that are essential to investigate in caring disciplines such as nursing and midwifery.

Caring disciplines need to use various knowledge modalities based on a diversity of rationalities, methodologies, and epistemologies. The need for a broad view of evidence is a goal among an increasing number of nursing and midwifery scholars from all over the world. Eriksson and colleagues claim that evidence in a caring science perspective is a multidimensional concept (Eriksson, et al., 1999, Eriksson, & Nordman, 2004). Fawcett, Watson, Neuman, Walker and Fitzpatrick (2001) argue for a theory-guided EBC and suggest Carper’s (1978) four patterns of knowing (empirics, ethics, personal, and aesthetics), which embrace a holistic view of caring, as the theoretical guide in the development of EBC. Udod (2004) states that EBC is complementary to experience and caring theory, and Pipe (2007) proposes a combination of EBC and theory-driven care. Willman, Stoltz and Bathsevani (2006) see EBC as a bridge between research and clinical activities and a supplement to experiences and the ability to express empathy or ethical considerations. Research groups (Kitson, Harvey, & McCormack 1998; Rycroft-Malone et al., 2004a, Rycroft-Malone et al., 2004b) stress that clinicians, when making clinical decisions, should incorporate research evidence, contextual information, and clinical experience. We support a definition of evidence developed on an inclusive literature review: “Evidence is an observation, fact, or organized body of information offered to support or justify inferences or beliefs in the demonstration of some proposition or matter at issue” (Upshur, 2001, p. 7).

Kari Martinsen, a Norwegian nurse and philosopher, has provided ideas about evidence in health care (2006) which we endorse. She critiques EBM for being a controller of empirical research and assesses evidence to be a wide concept: “when evident is linked to seeing, as in gaining insight into and attending to, knowing and experiencing, it goes without saying that this is a much wider concept than simply proving something by measuring effects” (p. 124). Martinsen stresses that life philosophy and EBM/EBC ask different questions and thus

come up with different answers; they supplement each other. If an overall aim is to perform the very best care, knowledge is needed that provides “the objects or the issue with the greatest variation and richness of perspective, differentiation and richness of meaning” (Martinsen, 2006, p. 125).

Research with a lifeworld perspective

Through human science, it is possible to reveal the meaning of human existential phenomena. In this type of research, the lifeworld is central. The lifeworld is a pre-determined basis of all experience but, in itself, is tacit as it is the world in which we are immersed; it is “the whole in which we live as historical creatures” (Gadamer, 1995, pp. 246–247). The lifeworld is central in phenomenology as developed by the German philosopher Edmund Husserl (1859–1938). The overall aim when doing lifeworld research is to “describe and elucidate the lived world in a way that expands our understanding of human beings and human experience” (Dahlberg, Dahlberg, & Nyström, 2008, p. 37). To examine the experience of a world with which we indubitably communicate is different from accounting for a statistical relationship or presenting a proof (Martinsen, 2006). Research with a lifeworld perspective has the interest of understanding phenomena in everyday lives of people. It explores the inner side of life, providing a description of the meaning of a phenomenon in relation to, for example, illness, suffering, health, and caring (Dahlberg, et al., 2008). The knowledge developed is a tool for the reader to be more human (van Manen, 1990). The whole research process must be open, flexible, sensitive and creative for the phenomenon under investigation, in order to uncover concealed meanings (Dahlberg, et al., 2008); it must be congruent and useful (Nelson, 2008). As in all research, objectivity, validity and generalization are valuable concepts in performing lifeworld research of high quality but the assumptions are different from those of logical empiricism (cf. Dahlberg, et al., 2008). In order to increase understanding of the importance of lifeworld research in developing EBC during the childbearing period, we will present examples from our own studies.

The midwives

There is a wealth of knowledge in the life stories of health care professionals that can provide a base for EBC. Through a narrative study of practicing Icelandic midwives’ birth stories, Olafsdottir (2006) has identified midwives’ different ways of knowing. Her research concludes that clinical skills

in midwifery involve making subjective assumptions of truth that have been intuited in practice and through relationships with women and their families. This inner knowing, in balance with other types of knowing, helps assure good care and safe birthing. Thus, clinical expertise coupled with a sense of intuition, is one necessary way of knowing in midwifery care. In Sweden, Lundgren (2002) has described the essential of midwives’ encounters with women during childbirth as striving to become an “anchored companion”. This means to be available for the woman, to listen to and see her situation mirrored in her body and to share the responsibility of childbirth. The resulting theme “to be anchored” is to show respect for the limits of the woman’s ability as well as the midwife’s professionalism. The midwife thus helps the woman to be “fully there” all through the childbirth without going beyond her own capacity. Crucial in this relationship is a sharing of responsibility between midwife and a participative woman; a unique feature of midwifery relationships, which may differ from other caring encounters.

The mothers

The aim of care is that well-being should exist side by side with so-called medical normality and even in the presence of persisting disease and complications. Pregnancy is a crucial part of the childbearing period which Berg (2005), in a phenomenological hermeneutic study, in Sweden has investigated in relation to type 1 diabetes. The pregnant women’s handling of their life circumstances are summarized as a construct of duality: “to master or to be enslaved”, and a variety of examples of these opposite ways of living are identified. The findings are useful for health care professionals in antenatal care. They have a special responsibility to give care that not only optimize the biological possibility for a healthy child to be born but that also supports women with type 1 diabetes in mastering the situation and thus promotes health, well-being, and motherhood.

The lived experience of childbirth among Finnish women has been described by Callister, Vehviläinen-Julkunen & Lauri (2001) in a phenomenological study. One identified theme was a sense of awe at the creation of a new life within the context of birth as a bittersweet paradox. A strong sense of maternal confidence and self-efficacy was recognized which influenced the women’s perception and management of childbirth pain. Bondas (2005) has created a heuristic synthesis from theories, previous research and own research with four phenomenological studies of women’s experiences of pregnancy, antenatal and postpartum care, and of the presence of their partner during birth. Through a tapestry of

health, suffering and communion, a model of care emanated from the metaphorical construction “to be *with* child”. Desire to share the new situation accompanies the changes of the women’s health and way of living. Three modes of caring communion were important in promoting health for the women: family communion, sisterly communion with other women, and communion in care with a caregiver. The research study provides an integrated picture of what caring means for mothers-to-be and for new mothers; and the model is used in clinical care planning.

Health care professionals working in the childbearing field, as midwives, nurses and obstetricians need to make conscious and value-based choices. Caring actions not only intend to cure patients from diseases or treating complications but to help patients and relatives experience health and well-being. Today many women, reported as having “normal outcomes” from normal vaginal delivery and birth of a healthy child, experience ill health due to a negative experience. Such negative experiences will be integrated in the person’s lifeworld and thus form a foundation for experiences to come; this may even hinder a woman from giving birth again. An example of this is that women often experience fear and loneliness in relation to childbirth. One study exploring this fear has shown that the encounter between the woman and the midwife was a way of breaking down the feeling of loneliness; it restored the woman’s self-confidence and reduced suffering and pain (Nilsson & Lundgren, 2008).

The fathers

Important persons in the childbearing field are the fathers. Ways of being a father has been studied by Kaila-Behm and Vehviläinen-Julkunen (2000) through interviews with Finnish fathers and essays written by public health nurses. Different dimensions of fatherhood were identified such as bystander, supporter of spouse, partner, and head of the family. Further, transition to first-time fatherhood was investigated in Swedish phenomenological research projects. One study, which explored fathers’ experiences of childbirth education, showed that the course created preparedness for birth and fatherhood but placed the fathers in a secondary role; the fathers were invited to participate in the educational program but the activities addressed the mothers’ needs (Premberg & Lundgren, 2006). Findings in a second study (Premberg, Hellström & Berg, 2007) revealed that the essence of the experiences of the first year as a father was to place the child in the centre without giving up one’s own personhood. The infant provided warmth and happiness in the family,

and the men experienced a deeper relationship to their partner. The contact between the father and the infant was facilitated by engagement and time spent alone together. The knowledge obtained in these studies is an important basis for developed supportive actions for fathers and their families during the childbearing period.

Life-and death decision-making

Brinchmann (2003) have in Norwegian studies focused on life-and-death decision making in neonatal medicine. One major finding was that life-and-death decisions concerning very premature infants are largely based on clinicians’ moral judgment, experience and intuition (Brinchmann & Nordvedt, 2001). A study of parents’ experiences with life-and-death decisions showed the danger of trusting only scientific knowledge without taking into consideration other important knowledge and information in professional and moral judgments (Brinchmann et al., 2002). Huge ethical dilemmas were expressed due to overemphasis on ultrasound technology. In one case, the doctor and mother disagreed about the estimated time for expected birth. The mother knew when she became pregnant, but the doctor set another date based on “evidence” (ultrasound); a scheduled late abortion thus turned out to be a tiny infant who nearly survived. In another situation, a physician nearly discontinued treatment (turned off the ventilator), based on ultrasound pictures of the infants’ brain. This turned out to be a terrible mistake but it was discovered in time; the treatment continued and the child survived without major problems.

Nurses in neonatal intensive care

In a Danish hermeneutic-phenomenological study, nurses’ experiences of transfer of a neonatal or small child to or from the neonatal intensive care unit were the focus of attention. Nurses were found to be quite accountable for the transfer, they were supportive to unhappy and worrying parents, observant, and caring towards the sick infant, but themselves experienced both safety and insecurity (Hall, 2001). These results might sustain health care leaders in staff development and encourage focusing on what matters in a broad EBC.

Secondary analyses and metasynthesis

Secondary analysis involves the use of existing qualitative data in order to pursue a research interest, which differs from that of the original work (Heaton, 2004; Thorne, 1994). Through a secondary analysis of eight qualitative studies on normal and high-risk

birthing situations, six relational concepts were identified, each describing one aspect from the women's perspective and one responsive aspect from the midwives. These were surrender-availability, trust-mediation of trust, participation-mutuality, loneliness-confirmation, differenceness-support uniqueness, and creation of meaning—support meaningfulness. The concepts are useful as part of a disciplinary guide for midwifery care (Lundgren & Berg, 2007). Hall (2007) continued her research through a secondary analyze of ten of own lifeworld studies concerning nurses', parents' and grandparents' experiences when a newborn or small child is critically ill. The findings revealed that the dynamics around the critically ill child were dialectic encompassing the dimensions caring—uncaring, knowing—ignorance, mutuality—isolation and pleasant tone—unpleasant tone. This secondary analysis on top of the prior qualitative studies added to the body of knowledge of the dynamics in and between caregivers in this critical health situation.

We also believe that meta-syntheses of qualitative studies contribute to EBC (Bondas & Hall, 2007a,b). A meta-synthesis is a kind of review in which the researchers synthesize single qualitative studies into a new comprehensive wholeness often expressed through metaphors (Noblit & Hare, 1988). Just as a meta-analysis in the quantitative tradition, a meta-synthesis documents the current state of research in a certain health context; it has possibilities to reach new levels of understandings of clinical matters and to articulate general trends as well as contradictions and complexities within a particular phenomenon. Studies of parenting, newborn, and childcare are frequently subjected to meta-synthesis research (Bondas & Hall, 2007b). For example, Aagaard and Hall (2008), in a metasynthesis of 14 qualitative studies about mothers' experiences of having a preterm baby in a neonatal intensive care unit, found their motherhood to be a maternal striving from being insecure and dependent to developing a strong feeling of being a normal mother to the preterm born infant.

Other knowledge important for evidence-based care

A key element for EBC is personalizing the evidence to fit a specific patient's circumstances. It is unanimous that EBM/EBC, or whatever concept used, besides research evidence, should incorporate other types of knowledge. Sackett et al. (1996) has stressed that EBM is the integration of best research evidence with clinical expertise and patient values and predicaments to facilitate clinical decision-making.

Patient's experiences and preferences

Just as the midwife in relationship with the woman should create opportunities for shared responsibility, nurses and other health professionals need to provide conditions for true patient participation. They need to recognize each patient's unique knowledge, respecting the individual's description of his or her situation, rather than just inviting the person to participate in decision-making. Patients as well have experience-based knowledge, including insights in how to behave and what to prefer in their own situations (DiCenso et al., 2005; Caron-Flinteman, Broerse & Bunders, 2005; Eldh, Ekman & Ehnfors, 2006).

Clinical state, setting and circumstances, and health care resources

Another important element of knowledge in developing EBC is considering clinical state, setting, and circumstances. This means, for example, that patients living in remote areas may not have access to the same diagnostic or treatment options that could be offered in a university hospital, and that patients' clinical circumstances as severity of illness will influence their response to an intervention. Likewise, it is important to consider resource implications. This implies that decision makers always must weigh benefits and risks, inconvenience, and costs associated with alternative management strategies and, in so doing, consider the patient's values (DiCenso et al., 2005).

Clinical experience

Another very important element in EBM/EBC is clinical experience (Sackett et al., 1996; Rycroft-Malone et. al 2004b). Clinical experience could also be labeled "experience-based knowledge" and refers to knowledge emancipating from experience in practice (Norberg, 2006). We support claims by the Royal College of physicians in UK (2005, p. x1); that health care, including medicine, is more than the sum of knowledge of disease. It "concerns the experiences, feelings and interpretations of human beings in often extraordinary moments of fear, anxiety and doubt". They add that clinical practice contains a lot of unpredictable situations needing different kinds of competence; explicit scientific knowledge of different kinds together with the often-tacit experiential knowledge involving both technical skills and wisdom.

The uniqueness of professional experience-based knowledge is that it is not codified and reported in a structured way. Not until it has been highlighted through reflection and dialogue with others, it can be

examined and developed (Norberg, 2006). Professional reflection is an important part of the EBC process and means that clinicians (nurse, midwife, physician, and other health care professionals) make an ethical analysis of their own caring activity where presuppositions and possible effects are included, both desired and not desired. This process comprises both self-reflection and reflections together with colleagues (c.f. Bengtsson, 1993).

A circular model of knowledge for evidence-based care

Sackett et al. (1996) warned about evidence tyranny, i.e. the science receiving too much emphasis, as well as the use of not useful treatments, i.e. the experience-based knowledge receiving too much attention. Upshur (2001, p. 11) stressed, "evidence in health care is neither exclusively abstract, mathematical, and general nor narrative and particular", and that there is no a priori reason to exclude qualitative research from assuming the status of evidence (Upshur, 2001). Instead, research evidence is a mediation and interaction of different types of knowledge. This is not a novel declaration. Already Aristotle, the Greek philosopher, mentioned this when talking about the interaction of the universal and particular types of knowledge as the exercise of practical reasoning (Phronesis). To use the words of Dahlberg et al. (2008, p. 333): "To work scientifically, aiming at objectivity, validity and generality does not mean that there is one and only one scientific method, or that the method is chosen beforehand. It is the opposite—in order for research to be scientific we need a wealth of methodological equipment and to carefully choose methods to suit the phenomenon under study".

We believe qualitative research is crucial for developing the very best care during the childbearing period: it provides evidence as well as other sorts of truths. As described from our own studies above, qualitative research describes aspects of pregnancy and neonatal care not possible to achieve by quantitative research alone.

We further find patients'/clients' experiences and preferences, clinical presuppositions, health care resources, and clinical experience as necessary components of knowledge in addition to scientific results, just as the advocates for EBM did (Sackett et al., 1996). Belonging to practice disciplines as midwifery and nursing we believe in a mix of scientific and clinical knowledge. We have to keep in mind that great variation, richness of perspectives; differentiation and richness of meaning (Martinsen, 2006) are basis for good, individual and unique care. This includes scientific knowledge with different

epistemological standpoints, experience-based reflected professional knowledge, and knowledge developed from the unique patient's/client's lifeworld perspective, which includes experiences, anamnesis with childbearing history, and needs.

Instead of taking a linear approach to evidence and knowledge, we agree with Downe and McCourt (2004) who proposed to look at science as a paradigm of ongoing dialogues. We support the ideas of other researchers and scholars (Upshur, 2001; Rycroft-Malone et al., 2004b; DiCenso et al., 2005; Walsh & Downe, 2005; Willman et al., 2006) who propose replacing the hierarchic model with a circular model for EBC, implying a multiplicity of research designs, approaches and methods.

DiCenso et al. (2005) have developed a model for evidence-based clinical decisions, modified from Haynes, Devereaux and Guyatt (2002) in which they have included four different kinds of knowledge: research evidence; patient preferences and actions; health care resources; clinical state, setting and circumstances; and a fifth element; clinical expertise which overlays and integrates these four elements of knowledge. Clinical expertise refers to the clinician's ability to integrate all these elements of knowledge to perform good EBC.

We find this model to be a good attempt to demonstrate the complexity of EBC and the different elements of knowledge in addition to research evidence all of which is necessary when performing evidence-based daily care. However, DiCenso and colleagues (2005) still argue for a hierarchic model with high to low evidence obtained with different research designs. RCTs are still at the top and qualitative research not at all mentioned in the model. The authors describe the tension between quantitative and qualitative researchers, which has created polarity, and they refer to others who see the benefits of a critical nursing science that combines stories and numbers. They state that "the best research evidence can be quantitative or qualitative depending on the question asked" (p. 10) but mostly point out that both designs build "nursing knowledge" (p. 10), rather than creating evidence.

We believe that the circular form illustrates that there is no hierarchy between scientific knowledge and other types of knowledge, nor between different kinds of scientific knowledge. In such a model, all methodologically sound scientific knowledge is treated equally: lifeworld approaches no matter whether descriptive or interpretative and quantitative approaches consisting of both descriptive and intervention studies. The model demonstrates how different types of knowledge are utilized in developing best practice. Our proposed circular model for EBC thus includes and balance different types of

evidence gained from diverse research methods and findings, from clinical practice and skills, and from the childbearing women and families.

Conclusion

We launched this study primarily to enhance the importance of involving findings from qualitative studies in the EBC focusing on childbearing. As authors representing nursing, midwifery and caring in the five Nordic countries and being involved in qualitative research, we experienced that qualitative derived knowledge slowly was degraded in the name of the evidence-based movement. We have argued that there is a need to understand the concept of evidence more broadly than presently is the case in our practice disciplines midwifery and nursing. We have stressed that research evidence should encompass different kinds of scientific knowledge representing varied perspectives: explanatory research based on identified conditions exploring reason-cause, and research with lifeworld approaches exploring what- and how-questions that provide patterns of meaning. We have argued for a circular model of knowledge as the basis for EBC where different kinds of knowledge are necessary and should be treated equally when aiming at improving health care conscientiously and judiciously.

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