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# Will Evidence-Based Nursing Practice Make Practice Perfect?

**Carole A. Estabrooks**

La pratique ou la prise de décisions fondée sur des données probantes est en voie de devenir un secteur d'avenir dans le domaine des soins infirmiers et dans les professions de la santé en général. Ce concept, formulé par l'épidémiologiste britannique Archie Cochrane, a récemment été remis en vogue au Canada par le Forum national sur la santé qui s'est fait l'apôtre de la prise de décisions fondée sur des données probantes. Avant de faire des *soins infirmiers fondés sur des données probantes* notre mantra pour le XXI[e] siècle, il y aurait lieu d'examiner les origines et les répercussions de ce concept et d'approfondir certaines notions apparentées. Deux concepts importants devraient retenir notre attention, à savoir la nature et la structure des connaissances fondées sur la pratique et la nature et la structure de la preuve en général. À partir des résultats d'un sondage réalisé auprès d'infirmières dans l'Ouest du Canada, l'article décrit le vaste éventail de connaissances pratiques que les infirmières utilisent et qui sont en grande partie fondées sur l'expérience plutôt que sur la recherche.

Evidence-based practice, or evidence-based decision-making, is rapidly developing as a growth industry in nursing and the health professions more widely. It has its origins in the work of the British epidemiologist Archie Cochrane and has recently been re-energized in Canada by the National Forum on Health and its call for a culture of evidence-based decision-making. Before we adopt evidence-based nursing (EBN) as a mantra for the 21st century, we should examine its origins and its consequences, and we should probe related concepts, 2 of which are the nature and structure of practice-based knowledge and the nature and structure of evidence generally. Findings of a recent survey of nurses in western Canada are used to illustrate that nurses use a broad range of practice knowledge, much of which is experientially based rather than research-based.

## The Evidence in Evidence-Based Nursing

Though many clinicians might wish to use research in their practices, and though many researchers might wish to see the results of their studies put to good use, many factors get in the way of using research. We actually know very little about what makes *research use* happen or not happen. We are not even sure what *research use* really means, or what *research* is, or what the *evidence* in evidence-based practice really looks like. This is a significant problem when you consider that scien-

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tific knowledge is increasing exponentially and that, by some estimates, the scientific information available to us now will have increased by as much as 32 times by the year 2001 (Christman, 1991).

The purpose of this paper is to explore the origins of the evidence-based practice movement and some of its possible consequences for nursing, and to probe related concepts such as research utilization. It is argued that research utilization is a sub-set of evidence-based practice and that the term *evidence-based practice* ought to encompass a much broader range of evidence than the findings of scientific research. It is also argued that nursing would be well served by a critical examination of the evidence-based movement for its explicit and implicit assumptions, and for indications that it does actually bring improved patient and client outcomes as a result of improved nursing practice.

## The Origins of a Movement

Evidence-based practice is rapidly becoming a growth industry in nursing and the health professions generally. This is apparent in the emergence of the Cochrane Collaboration and the Cochrane Library, which houses the Database of Systematic Reviews (CDSR) and the Database of Abstracts of Reviews of Effectiveness (DARE), journals such as *Evidence-Based Nursing*, and centres such as the Joanna Briggs Institute for Evidence-Based Nursing in New Zealand. Nursing has some 25 years of experience with one dimension of evidence-based practice, research utilization. This experience dates from the large and often-cited Conduct and Utilization of Research in Nursing (CURN) project of the 1970s (Horsley, Crane, & Bingle, 1978; Horsley, Crane, Crabtree, & Wood, 1983) and from nursing's first empirical studies of the subject (Ketefian, 1975; Shore, 1972).

At the same time that nursing was experimenting with large research utilization initiatives such as CURN, Archie Cochrane had planted the seeds of the Cochrane Collaboration with the publication of his influential book (Cochrane, 1972). Those seeds came to fruition in 1993 when the Cochrane Collaboration was founded by individuals from nine countries (Chalmers, 1993). Today it is a global enterprise with centres scattered around the world and has been said to rival the Human Genome Project in its implications for modern medicine (Naylor, 1995). The Cochrane initiative has moved rapidly to infuse a new approach to teaching and practising in medicine. While it currently has a lesser influence on nursing, there is little doubt that this is an interim state. In fact as the Cochrane initiative continues to approach

critical mass it will be one of the major forces, in the Commonwealth countries, exerting pressure on nursing to adopt an evidence-based position. In the United States, where the Cochrane Collaboration seems to be less widely disseminated, the Agency for Health Care Policy and Research (AHCPR) may be exerting similar pressures. In medicine this evidence-based stance is called Evidence-Based Medicine (EBM). Calls for evidence-based decision-making, evidence-based practice, evidence-based nursing practice, and/or evidence-based nursing arise from the EBM movement, although in Canada these have received a recent boost from the National Forum on Health, which called for a culture of evidence-based decision-making (Evidence-Based Decision Making Working Group, 1997).

In 1992 the Evidence-Based Medicine Working Group published a manifesto, "Evidence-based medicine: A new approach to teaching the practice of medicine," in *JAMA*. This has become an official and core document of the official, albeit self-appointed, group responsible for implementing Cochrane's innovative 1970s ideas about pulling together research that had been done in particular areas, synthesizing it, and making it available to guide clinical practice. Whether Cochrane's revolutionary and important ideas have been truly rendered by the Working Group has yet to be determined. However, it is clear from the manifesto and from Sackett, Richardson, Rosenberg, and Haynes' (1997) book *Evidence-Based Medicine: How to Practice and Teach EBM* that the ideas are now more than ideas.

The EBM movement has been much criticized, the most recent rash of criticism being published in the *Journal of Evaluation in Clinical Practice*. The proponents of the movement have been accused of ignoring the context of clinical practice (Aveyard, 1997), de-emphasizing the need for an understanding of pathophysiology (Morgan, 1997), ignoring standard aspects of clinical training such as physical examination, promulgating medicine by numbers (Hampton, 1997) and worshipping statistical manoeuvres (Charlton, 1997), Taylor-like managerialism (Hunter, 1996) and authoritarianism (Shahar, 1997). Its elite proponents have been accused of being patronizing and condescending (Morgan) and of sometimes being anti-science (Hunter). Predictably, rebuttals of these and earlier criticisms have been published — see, for example, Sackett, Rosenberg, Gray, and Haynes (1996) and the Evidence-Based Working Group (1992) itself. In nursing we are seeing the emergence of a similar response to criticisms of evidence-based practice (DiCenso, Cullum, & Ciliska, 1998).

Some of the criticisms may be valid, others reactionary. Criticism in itself is healthy for any new intellectual undertaking. However, it is safe to say that EBM is more than a way of practising; it has taken on the qualities of a social movement whose purpose is, in part, and in addition to the obvious, the redistribution of power in medicine. If the movement is successful, the power base will move from the clinical specialists and sub-specialists to the clinical epidemiologists who are both the producers and the purveyors of the new knowledge needed for EBM. How will this affect nursing? Thus far the literature on evidence-based nursing (EBN) does not for the most part reflect an understanding that the term embodies more than just good nursing practice. In fact EBN is often treated as a moniker for research utilization.

Page (1996) refers to clinical freedom-fighters who believe in their inalienable right to freedom in clinical decision-making, and to intellectuals who think EBM is second-rate science. In nursing, however, we have not yet developed a serious critique. There are occasional warnings — Rafferty cautions that evidence-based practice can "make nurses responsible for issues that are beyond their control unless they are in an environment...where nurse led and evidence-based cultures are adequately supported" (Naish, 1997, p. 64). There is an occasional sweeping condemnation (Mitchell, 1997), based more in an opposing nursing epistemology than in a rational critique of the use of research in practice. And there are thoughtful papers — Mulhall (1998) raises provocative questions about the uses to which we put evidence-based practice, while Kitson (1997) cautions that:

> ...nursing may embrace the evidence-based movement without fully understanding the rules. And as written at the moment, the rules are about medical diagnosis, single clinical interventions, RCTs and meta-analyses...there is a limit to nursing evidence conforming to these criteria. What must not happen is that nurses are then excluded from the movement because their research is too poor or insufficient in rigour or size. (p. 38)

It behoves us to proceed thoughtfully and with caution — not rejecting the idea of evidence-based practice, but also not letting it become a tool to disempower clinicians or to cause more blaming of clinicians for not *doing it*. Scholars, students, and clinicians alike need to be critical consumers of nursing's writing on evidence-based practice. We must differentiate between information that contributes to better health outcomes — or to better practice in the name of eventual better outcomes — and information that is more relevant to our professionalization agenda. If we focus on the part of EBN and research utilization that has to do with improving patient and client outcomes, we find

good preliminary evidence that practice based on sound research affects outcomes positively.

Indications that research-based nursing interventions have the potential to positively affect client/patient outcomes include the following meta-analyses: Beck (1995); Blegen (1993); Broome, Lilis, and Smith (1989); Brown (1992); Brown and Grimes (1995); Devine (1992); Devine and Cook (1983, 1986); Devine and Reifschneider (1995); Goode et al. (1991); Hathaway (1986); Heater, Becker, and Olson (1988); Irvine and Evans (1995); Kinney, Burfitt, Stullenbarger, Rees, and DeBolt (1996); Krywanio (1996); Mullen, Mains, and Velez (1992); Mumford, Schlesinger, and Glass (1982); Olson, Heater, and Becker (1990); Schwartz, Moody, Yarandi, and Anderson (1987); and Theis and Johnson (1995). While promising, the results of these studies must be considered carefully. They represent often convincing arguments employed by the profession to advance its case for conducting and using research in nursing. However, these meta-analyses result in conclusions about the efficacy of interventions that are usually carried out under experimental or quasi-experimental conditions. Moving from these results to the practice setting and claiming that research, when used by clinicians, results in improved client/patient outcomes may be unwarranted. We have not studied most aspects of the dissemination, adoption, transfer, implementation, and utilization of research process in nursing. We do not know if *reinvention* (Larsen, 1980; Lewis & Siebold, 1993; Rice & Rogers, 1980; Rogers, 1988, 1995), for example, is a factor when research is moved from the study context to the practice context. If it is a factor, then the efficacy of an intervention under study conditions cannot necessarily be directly extrapolated to the practice setting.

## Evidence-Based Nursing Practice and Research Utilization

### *What Is Research Utilization?*

When we speak of research utilization and the research utilization problem in nursing, we are speaking of the gap between what is known and what is done — how do we get valid, useful, and largely scientific information into the hands of, and used by, the clinician? Research utilization can be defined very broadly as *the use of research findings in any and all aspects of one's work as a registered nurse.* While there are specific kinds of research utilization, such as instrumental, conceptual, and persuasive (Estabrooks, 1997), at its simplest it is *the use of research.*

Most readers are familiar with instrumental research utilization. It is the direct application of research findings, often encountered in the form of procedures, clinical protocols, practice guidelines, standard care plans, new techniques, and so on. It is the kind of research use most often meant when we write about or try to create research-based practice in clinical settings. When we have tried to measure the extent to which nurses use research, it has almost always been instrumental use that we have been measuring.

It is likely that conceptual research use occurs more often — that is, nurses become aware of research findings, take them in, and let them inform their practice in ways that are often indirect. Research used this way serves an "enlightenment" function in their practice (Hasenfeld & Patti, 1992; Weiss, 1979). It may be that clinicians do or could incorporate qualitative research findings conceptually more easily than instrumentally.

There are many examples of persuasive research utilization in nursing. One of the most powerful is Florence Nightingale's work in marshalling volumes of epidemiological data during the Crimean War and using them to persuade the Secretary of War and others of the need for radical reform in the British military, thus saving the lives of countless British soldiers. Nightingale's broad and sweeping success in the persuasive use of research data to make policy changes that led directly to a measurable reduction in mortality, and the work of Lillian Wald, whose use of similar kinds of data led to significant reform in children's health in the United States, stand as essentially unmatched achievements in the heritage of nursing. These are examples of persuasive use of research at the macro level. However, in much more modest and local ways nurses at all levels can and do use research as a means of persuasion (Estabrooks, 1997). This phenomenon remains, however, essentially unstudied.

### *What Is Evidence-Based Nursing Practice?*

EBN is, this author believes, much broader than research utilization, encompassing not only research findings, but other forms of practice knowledge as well. The term *evidence-based practice* has crept into nursing somewhat surreptitiously, and nursing has begun to use it without paying obvious attention to its origins or what it conveys to nurses, the public, politicians, and other health professionals. Since it has been argued that EBN has its origins in EBM, it might be instructive to explore some of the ways in which EBM has been defined:

> Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. (Sackett et al., 1996, p. 71)
>
> Evidence-based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. Evidence-based medicine requires new skills of the physician literature searching and the application of formal rules of evidence evaluating the clinical literature. (Evidence-Based Working Group, 1992, p. 2420)

Are these definitions compatible with the epistemological basis and practice of nursing? What assumptions underlie them? Is it true, as Sackett et al. (1996) suggest, that "evidence-based medicine is not restricted to randomised trials and meta-analyses" (p. 72), even though Sackett et al. also hold the randomized trial and syntheses of randomized trials as the "gold standards" of evidence? We would be well served by a clarification of what indeed we mean when we call for evidence-based practice/decision-making in nursing. Recently Mulhall defined EBN as "care concerning the incorporation of evidence from research, clinical expertise, and patient preferences into decisions about the health care of individual patients" (1998, p. 5). Is this the right definition for us? Does it lead to constructive answers to the questions posed above?

We talk of evidence-based practice and hold it as a core standard in many jurisdictions because we believe that if we had *it* we would have better nursing practice and hence better patient and client outcomes. We also find it attractive because we believe it would bolster our efforts to achieve full professionalization. But what do we actually mean by it? Do we mean to blend clinical judgement and research evidence? What kind of research will constitute legitimate research evidence? Are there forms of research other than scientific that we will deem legitimate forms of evidence for practice? How will we synthesise and incorporate different research findings that result from different methodological, and sometimes epistemological, research traditions? Will there be a hierarchy of research evidence? Of evidence in general? What will be the role of synthesized research findings? Are we presently equipped to synthesize all forms of research findings? Will our conceptualization of EBN be congruent with the needs of clinicians and the sources of knowledge they draw upon in their practices? What sources of practice knowledge *do* they draw upon? Are these related to EBN? Should they be?

## Sources of Practice Knowledge

The literature offers few studies on the kinds of knowledge that nurses use in their practice. Baessler et al. (1994) report some findings within the context of a larger report. Mulhall (1998) argues that nurses and consumers need more than scientific or economic evidence. Johnson and Ratner (1997) offer a theoretical discussion of the nature of practice knowledge, suggesting at a minimum that there is more to practice knowledge than scientific knowledge. Some 20 years ago Carper (1978) suggested that nursing knowledge could be classified into empirics (the science of nursing), aesthetics (the art of nursing), ethics (the moral component), and personal knowledge. As we begin a more intensive period of embracing the EBN agenda, Carper's classification is particularly suited to a conceptualization of evidence. The findings described in the following sections from a larger study of research utilization (Estabrooks, 1997) lend further support to a conceptualization of nursing knowledge, specifically *practice* knowledge, that is much broader than just scientific. It follows that such support also extends to our understanding of the extent and scope of the *evidence* in EBN.

**Table 1** *Demographic Characteristics of Sample* (n = *600)*

| Characteristic | Sample | Population |
|---|---|---|
| *Age* (mean) | 41.70 | 41.25 |
| *Sex* | | |
| Female | 97.5% | 98.04% |
| Male | 2.5% | 1.96% |
| *Nursing Education* | | |
| Diploma | 70.8% | 79.66% |
| Baccalaureate | 25.2% | 19.82% |
| Master's | 0.50% | 0.36% |
| Other | 2.7% | negl. |
| *Clinical Area* | | |
| General Hospital | 41.8% | 51.93% |
| Critical Care/Specialty | 20.8% | 19.10% |
| Geriatric/LTC | 18.3% | 12.05% |
| Public Health | 9.3% | 4.83% |
| Home Care | 5.7% | 6.18% |
| Other | 3.8% | 5.78% |
| *Hours Worked per Week* (average) | 28.40 | not avail. |

## Methods

A randomly selected sample of 1,500 staff nurses was drawn from the Alberta Association of Registered Nurses (AARN) membership list on the annual registration form for the year ending September 30, 1996. The criterion for inclusion in the sample was: "actively engaged in the delivery of direct nursing care to patients or clients, i.e., choice of 'staff nurse' on the registration form." Dillman's (1978) methods were used to conduct a cross-sectional survey, which was mailed in early 1996. Reminders were mailed to non-respondents approximately 3, 6, and 9 weeks after the original mailout. A replacement questionnaire was included at week 6. A final useable sample of 600 (40%) was achieved. Comparison of the sample with the population of more than 15,000 staff nurses on demographic and related variables suggested it was comparable to the population from which it was drawn (see Table 1). Consent to participate was implied by returning the questionnaire.

### *Instrument*

Because there was no instrument suitable for the overall purposes of the study, a survey questionnaire was developed using standard procedures (e.g., Dillman, 1978; Fowler, 1993; Rossi, Wright, & Anderson, 1983). A pilot study was then conducted on a convenience sample ($n = 23$) of post-baccalaureate and master's-level nursing students. The findings reported here arose from a series of 16 questions in a section beginning with the transition statement "The following questions relate to the kind of knowledge you use in your nursing practice." Twelve of the 16 questions were taken from Baessler et al.'s (1994) Research Utilization Questionnaire, with minor modifications in wording. Four questions were added (items j, n, o, and p) (see Table 2).

## Findings

The frequency with which nurses used the various sources of knowledge is reflected in mean scores for each item. Those scores ordered from most to least frequent are shown in Table 3. The two most frequently used knowledge sources were found to be experiential, followed by nursing school (3rd), workplace sources (4th and 5th), physician sources (6th and 7th), intuitions (8th), and what has worked for years (9th). Literature (whether in textbook or journal form) was found to rate in the bottom five for frequency. This is interesting given that for decades the primary, albeit passive, form of dissemination for researchers has been publication in journals, primarily scientific journals.

**Table 2** *Sources of Practice Knowledge Questions**

| 2. The knowledge that I use in my practice is based on... | Never | Seldom | Sometimes | Frequently | Always |
|---|---|---|---|---|---|
| a. information that I learn about each patient/client as an individual | 1 | 2 | 3 | 4 | 5 |
| b. my intuitions about what seems to be "right" for the patient/client | 1 | 2 | 3 | 4 | 5 |
| c. my personal experience of nursing patients/clients over time | 1 | 2 | 3 | 4 | 5 |
| d. information I learned in nursing school | 1 | 2 | 3 | 4 | 5 |
| e. what physicians discuss with me | 1 | 2 | 3 | 4 | 5 |
| f. new therapies and medications that I learn about after physicians order them for patients | 1 | 2 | 3 | 4 | 5 |
| g. articles published in medical journals | 1 | 2 | 3 | 4 | 5 |
| h. articles published in nursing journals | 1 | 2 | 3 | 4 | 5 |
| i. articles published in nursing research journals | 1 | 2 | 3 | 4 | 5 |
| j. information in textbooks | 1 | 2 | 3 | 4 | 5 |
| k. what has worked for me for years | 1 | 2 | 3 | 4 | 5 |
| l. the ways that I have always done it | 1 | 2 | 3 | 4 | 5 |
| m. the information my fellow nurses share | 1 | 2 | 3 | 4 | 5 |
| n. information I get from attending inservices/conferences | 1 | 2 | 3 | 4 | 5 |
| o. information I get from policy and procedure manuals | 1 | 2 | 3 | 4 | 5 |
| p. information I get from the media (e.g., popular magazines, television, the Internet, etc.) | 1 | 2 | 3 | 4 | 5 |

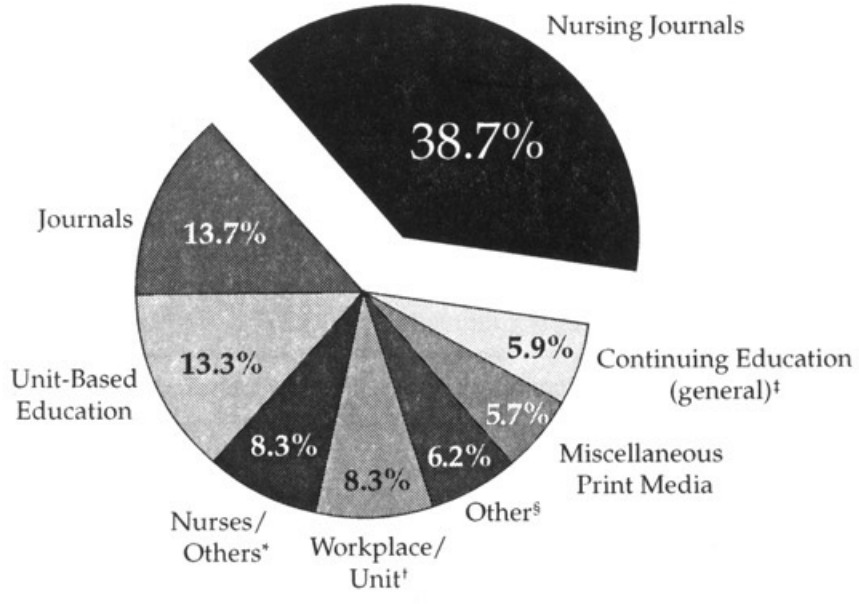
*The questionnaire and permission to use it were obtained from Dr. Zane R. Wolf.

**Table 3** *Mean Scores for Responses to Knowledge Source Questions (Range: 1 to 5) Rank Ordered*

| Question | Mean Score | Standard Deviation | Median |
|---|---|---|---|
| a. Information that I learn about each patient/client as an individual | 4.286 | 0.688 | 4 |
| c. My personal experience of nursing patients/clients over time | 4.109 | 0.697 | 4 |
| d. Information I learned in nursing school | 3.827 | 0.774 | 4 |
| n. Information I get from attending inservices/conferences | 3.774 | 0.740 | 4 |
| o. Information I get from policy and procedure manuals | 3.661 | 0.831 | 4 |
| m. The information my fellow nurses share | 3.637 | 0.582 | 4 |
| e. What physicians discuss with me | 3.614 | 0.806 | 4 |
| f. New therapies and medications that I learn about after physicians order them for patients | 3.606 | 0.828 | 4 |
| b. My intuitions about what seems to be "right" for the patient/client | 3.555 | 0.782 | 4 |
| k. What has worked for me for years | 3.537 | 0.737 | 4 |
| j. Information in textbooks | 3.355 | 0.812 | 3 |
| h. Articles published in nursing journals | 3.251 | 0.949 | 3 |
| l. The ways that I have always done it | 3.040 | 0.725 | 3 |
| g. Articles published in medical journals | 2.671 | 0.944 | 3 |
| i. Articles published in nursing research journals | 2.550 | 0.949 | 3 |
| p. Information I get from the media (e.g., popular magazines, television, the Internet, etc.) | 2.410 | 0.839 | 2 |

This raises interesting and potentially troubling issues. First, sources that could be evidence-based (textbooks and unit protocols) often are not, but form a non-trivial percentage of the sources nurses draw upon; second, a large percentage of knowledge that nurses use is not scientific; third, nurses use information from popular media sources, albeit less frequently, upon which they may increasingly draw practice inferences; and, finally — and of particular importance to educators — basic nursing education seems to play an ongoing role as a source of practice knowledge. The participants in this study had been out of their basic nursing education program an average of 18 years and their mean age was 41. They are going to be in the workforce for one or two more decades, and the basic nursing education upon which they will continue to draw will "age" with them. Even assuming they all had a maximally research-based education, the evidence is getting old. Nurses may always draw heavily upon their basic education as a source of practice knowledge. In many cases this makes sense, because the relative anatomical and physiological information has remained reasonably valid. But much of what is learned does not remain valid, and may not even be valid when it is learned. It seems clear that critical thinking skills have never been more urgently required than they are now in our basic education programs in nursing.

**Figure 1** *Sources of Research Information*




* Includes other health-care workers
† Includes the workplace generally, and unit-based research projects
‡ Includes conferences, courses, and seminars
§ Includes popular media, the library, and other miscellaneous sources

### *Sources of Research Knowledge*

To the open-ended question "What is the one most common source from which you learn about research findings?" the majority of nurses (52.3%) gave journals as the response. Of these, 38.7% clearly identified nursing journals. Of the nursing journals, nurses identified 9.9% as either the *AARN Newsletter* or *Canadian Nurse.* Nurses identified 13.7% of sources as simply journals. These results are shown in greater detail in Figure 1.

Literature sources overall were found to be a relatively infrequent source of knowledge for practice, but here a specific type of knowledge (i.e., research) was the subject of inquiry. Nursing journals made up the largest category, followed by other journals and unit-based education. Journals accounted for over half of the sources of research knowledge. However, other analyses of these data revealed that the primary journals the nurses were reading were not research journals, but rather the trade magazines *Canadian Nurse* and the *AARN Newsletter.* Over half the nurses (54.2% and 52.3%, respectively) reported reading *Canadian Nurse* and the *AARN Newsletter* more than eight times a year. Only 16.2% reported reading the next most commonly read journal, *Nursing,* more than eight times a year. In fact, the *modal* response for nursing journals other than *Canadian Nurse* or the *AARN Newsletter* was "never."

What can we learn from this? At a minimum we can infer that traditional scientific journals are not very effective as dissemination vehicles. Second, we may be able to put our provincial and national trade magazines to greater use in the dissemination of research. However, even larger issues related to the utility of traditional print media as main research dissemination vehicles and the gap between publishing for scientific credit and publishing for consumption by clinicians are raised.

## A Perspective on Evidence

What do we as a profession sanction as legitimate evidence? The implicit and often explicit assumption has been that the evidence in evidence-based practice is scientific fact derived from scientifically sound individual studies. Further, there has been a strong bias in favour of those studies taking the form of the randomized controlled trial (RCT), the "gold standard" of evidence (Sackett et al., 1996). RCTs certainly form the basis of much if not most of the synthesizing of groups such as the Cochrane Collaboration, but are they always the best evidence in nursing practice? Grouping evidence into two broad categories,

research evidence and non-research evidence, serves to highlight the major distinction between research utilization and evidence-based practice. Research utilization is concerned with research evidence only, and is therefore actually a sub-set, albeit a critical one, of evidence-based practice. Evidence-based practice includes, or ought to include, the entire gamut of evidence. Such a conceptualization makes apparent the importance of, and concomitant difficulties of, identifying and valuing an evidential structure in the profession.

### *Research Evidence*

Research evidence can be categorized as evidence from research syntheses and evidence from individual studies. If we consider the former, currently the products that might be used by clinicians can take at least four forms:

- ***Cochrane Database of Systematic Reviews (CDSR)***, a sub-set of the Cochrane Library
- ***Agency for Health Care Policy and Research (AHCPR)*** guidelines in the United States (AHCPR is in fact a combination of research synthesis and consensus panel or expert opinion)
- ***Systematic Research Effectiveness Overviews*** such as those conducted by the Quality of Nursing Worklife Research Unit (now known as the Nursing Effectiveness, Utilization and Outcomes Research Unit — NEUORU), University of Toronto, and the Hamilton-Wentworth Public Health Unit/McMaster University, and those conducted by a number of professional associations such as nursing's in partnership with the Alberta Heritage Foundation for Medical Research (AHFMR)
- the familiar ***narrative literature review***, found, for example, in the *Annual Review of Nursing Research*. While probably still the most common form of synthesis, this is rapidly being replaced by more explicitly rigorous and systematic approaches.

The Cochrane Collaboration does not yet have a large orientation to nursing syntheses. However, an example of synthesized research evidence from Cochrane that is highly relevant for nursing is the systematic review of labour support in which Hodnett (1994) reports that support during labour results in shorter labour, decreased use of intrapartum analgesia/anaesthesia, fewer forceps or vacuum-extraction deliveries, fewer cesarean sections, and decreased likelihood of newborns having a 5-minute Apgar of less than 7 (Hodnett, 1994, 1996).

These are startling outcomes when we consider that the labour-support interventions considered bear a remarkable resemblance to basic obstetrical nursing interventions — fundamentals of practice in *oldspeak.* One wonders what other outcomes, in other populations and other circumstances, might be positively affected by similarly basic nursing interventions.

***Individual studies.*** Individual research studies are commonly classified as: (a) RCTs; (b) non-randomized clinical trials; (c) cohort, case-control, and descriptive studies; and (d) qualitative studies. While there are a number of variations on this general classification, they all imply a similar hierarchy, in which the highest value is placed on RCTs, the lowest on descriptive and qualitative studies. Sometimes we very much need evidence from controlled trials, and if it is not available we have to make do with less-controlled studies. Other times, however, the nature of the clinical problem we are experiencing may be better informed by studies that use other methods. Qualitative studies using methods like grounded theory or ethnoscience may be the best way to understand, for example, the ways in which nurses touch their patients. However, if we want to establish that touch as a therapeutic intervention effects some outcome, such as relaxation, blood pressure, or sleep, we seek evidence from clinical trials.

### *Non-Research Evidence*

It is the non-research kind of evidence that presents nursing with the most difficulty. There can be little doubt that this kind of evidence is equally important to us, and to our patients and clients, but it is not easy to categorize, quantify, or rank. As we have seen, it comes in at least three forms — colleagues, experience/clinical acumen, and clinical judgement. Clinical judgement and clinical experience are particularly important forms of evidence that we know relatively little about. Earlier studies such as those by Benner (1984) and Pyles and Stern (1983) gave us insights into these realms, but these areas have received little or no attention in the EBN discourse. What are their elements? How do we measure them? How can we best acquire and keep them? How do we/can we deploy them with deliberation? We do know, as reflected in the findings described earlier, that they are commonly used by clinicians. We also know that we must be cautious about experience as a kind of evidence: we have notoriously selective recall and will often remember recent interventions and/or interventions with either an unusually good or unusually bad outcome. There may be other

kinds and sources of evidence, and these may well be a mixture of research and non-research evidence. Additionally, it is clear that nursing education is a blend of many of Carper's (1978) forms of nursing knowledge. However, what we may not have attended to as rigorously as the *content* in nursing curricula is acquiring the skill sets and critical-thinking capacities necessary to not only locate and understand information, but also to be able to judge the appropriate match between evidential sources and the contextual demands of clinical encounters.

### *What Is the Best Available Evidence?*

Is there a best kind of evidence? When considering scientific evidence in medicine, conventional wisdom has often identified the following structure as the preferred one: (a) meta-analyses of RCTs; (b) individual RCTs, especially if they are large; (c) less controlled and descriptive studies and sometimes the dramatic results of uncontrolled studies; and, finally, if we have to, we rely on, (d) expert opinion and consensus conferences. This is not a bad hierarchy as far as it goes, and as long as we add to it some of our own conventional wisdom and common sense. For example, to conventional wisdom we need to add individual and aggregated qualitative research studies such as are beginning to be described in the literature (Estabrooks, Field, & Morse, 1994; Jensen & Allen, 1994; Sandelowski, Docherty, & Emden, 1997).

We also need to learn how to integrate non-research sources of evidence, such as clinical experience and clinical judgement, into an evidential structure. Nursing does not yet have confident answers to the question "What is the best available evidence?" Nor is there necessarily one correct answer. The practice context is complex, people are complex, and clinicians are complex. The best evidence will most probably come in different forms, in different situations and contexts — and knowing how to decipher this complexity, how to match situation and context with appropriate evidence requirements, will perhaps be the most important requirement of the 21st-century practising nurse. However, given the continuing explosion of knowledge and our rapidly increasing access to information through on-line searching, on-line databases such as *Cochrane* and *DARE*, new journals like *Evidence-Based Nursing*, emerging centres for EBN, and everyday professional and public access to the Internet, one thing is clear: we have no choice but to find and use the best evidence available.

## Conclusions

Will evidence-based nursing practice make practice more perfect? Do we recognize *good practice* when it happens? Probably not always, but there is not a legitimate, bona fide clinician who does not know when she or he is practising well. Clinicians are acutely aware that what they do can and does make a difference, that their ignorance sometimes costs lives, that most health professionals, be they nurses, physicians, physiotherapists, or others, just want to do the best job they can and make some small difference. They want to save lives; ease suffering; provide physical, emotional, and spiritual comfort; improve health; prevent disease and injury; and promote healthier lifestyles — but they do not always know how to do these things. Used prudently, EBN can help us shed some of our ignorance and, *at the very least*, help us to *do no harm.*

EBN can help us do these things, but only if we develop a clear and meaningful conception of EBN. When we mean research utilization we should say research utilization. We should understand that its precise meaning is narrower than EBN's, but while its meaning is narrower, and while it is a term not often used outside of nursing, it is a clear term. We should not abandon it in favour of terms like *research transfer* or *uptake*, which, while more prevalent, are less meaningful for nursing. Research utilization carries with it the implication that behaviours must change for it to exist, and those behaviours must remain in a dynamic state for it to persist.

Kitson (1997, p. 38) says it is a bold step for nursing to sign on to an evidence-based clinical agenda. Assuming we do sign on (and we have already begun to), if we let EBN go beyond what our collective common sense tells us, and let it develop into an ideology, it will not serve us well. Anderson (1997) cautions his colleagues in psychiatry to embrace but not be bewitched by EBM. The same advice could apply to nursing. Anderson points out that the assumptions inherent in the EBM movement may not be valid. For example, evidence is not transparent or value-free; decision-making does not necessarily involve a weighing of the evidence; evidence-based decisions may not be taken in the face of political and other pressures (p. 226). No doubt there are other assumptions. There are, as Kitson points out, explicit and implicit *rules* in the evidence-based movement. There are clearly, as Kenny (1997) and Johnson and Ratner (1997) argue, questions about whether good science is enough for good practice.

The synthesis and dissemination of knowledge for nursing practice is a politicized growth industry. If research-based practice, and its new companion, EBN, are to move us closer to more perfect practice, we will have to be ever vigilant, not forgetting that we exist because we are a practice discipline sanctioned by a society with expectations. One of those expectations is that we will use sound evidence, the best available evidence, to practise as well as we can with the intent of making it *better* in some way for the patient or client. Our primary motivation in studying, promoting, and doing EBN must be focused squarely on the health of the public. A focus on EBN cannot, in the case of organized nursing, be traded as membership dues to either the academy or the professions, nor, in the individual case, be bartered like a career horse. To do so at least neglects and at worst violates what I believe is a sacred covenant, one in which, in exchange for society's promise to remunerate, support, and value us, we also make a promise:

> ...to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to a peaceful death) that he would perform unaided if he had the necessary strength, will or knowledge. And to do this in such a way as to help him gain independence as rapidly as possible. (Henderson, 1966, p. 15)

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Comments or questions should be directed to: Carole A. Estabrooks, Institute for Clinical Evaluative Sciences, 2075 Bayview Avenue, G Wing, Room G120, Toronto, ON M4N 3M5. Tel: 416-480-4055, ext. 3832. Fax: 416-480-6048. E-mail: carole.estabrooks@ualberta.ca