Evidence-based practice has been a dominant theme in professional literature for over a decade. “Evidence” has been considered synonymous with research evidence, and there are no reasonable arguments against the value of systematically infusing research evidence into clinical practices. The compelling logic of integrating the best available research evidence into professional practices has driven clinical decision making beyond the range of the opinions of individual practitioners and their local colleagues. The professional literature has focused on methods to acquire the skills to access and evaluate research evidence, with the development of user-friendly guides for framing questions, gathering research evidence, and appraising its quality and applicability.

More recently, a greater emphasis has been placed on the need to integrate client evidence with research evidence. In occupational therapy, the identification of occupational performance issues and goals as well as the determination of clients’ values and preferences, are essential for developing meaningful therapeutic partnerships and valued client outcomes. Egan, Duboulouz, von Zweck, and Vallerand (1998) itemize the types of client and research evidence relevant to each stage in the process of enabling occupational performance.

Why, then, do we continue to struggle with the questions “What is the best evidence for occupational therapy?” and “How do we interpret that evidence?” (Ottenbacher, Tickle-Degnen, & Hasselkus, 2002, pp. 247–249). This submission to the Evidence-Based Practice Forum critically examines the premises and methods involved in evidence-based occupational therapy to reveal four main limitations. The shortage of creditable research evidence and the organizational barriers to research utilization are two limitations to evidence-based practice that are common across the health professions. The neglect of qualitative research as evidence is perhaps most pertinent to client-centered practices such as occupational therapy. The fourth limitation, and the particular focus of this paper, is the lack of comprehensive models describing how to integrate client and research evidence with professional expertise.

Never enough research evidence. The most fundamental premise of evidence-based practice is the belief that a clinician’s application of research evidence to clinical practices will greatly improve therapeutic outcomes. As logical as this theory would seem, there is, as yet, very little research evidence to demonstrate that the construct of evidence-based practice actually works (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000)! Given widespread faith in the process, however, we can look beyond this concern to see that implicit in the promotion of evidence-based practice is the notion that high-quality research evidence is available to address each clinical question. Lay observers (for example, managers or funders of professional services) may interpret the failure to base one’s practice on the results of a randomized controlled trial as clinical incompetence or lack of diligence. The reality is, however, that even in the much larger, and relatively more quantifiable and controllable field of medical research, there is a shortage of coherent, consistent scientific evidence (Sackett et al., 2000, p. 7). How much more difficult it is, then, to produce research evidence on the effectiveness of occupational therapy practices, when occupational therapy focuses on the complexities of individuals in their occupational contexts rather than on their cells or biological subsystems? The scarcity of research on the effectiveness of occupational therapy practices (Hayes, 2000) increases the burden on the therapist; first, by requiring the therapist to search for research evidence that is only somewhat relevant, and then, through laboriously extrapolating the findings of such studies to their individual occupational therapy clients.

Contextual barriers to evidence-based practice. Recent research on occupational therapists’ capacities to integrate research evidence into their practice suggests that their difficulties are partially attributable to constraints in their practice environments. Economic and organizational factors, such as insufficient time to acquire and evaluate client and research evidence, the shortages of necessary equipment to carry out search-es, assessments, or interventions, and constraints on the number of funded occupational therapy visits, place external parameters on therapists’ abilities to translate research evidence into their practices (Curtin & Jaramazovic, 2001; Dysart & Tomlin, 2002; Humphris, Littlejohns, Victor, O’Halloran, & Peacock; 2000; Rappolt, Mitra, & Murphy, 2002; Rappolt & Tassone, 2002; Sweetland & Craik, 2001). The results of these studies are similar to the findings of studies of nursing (McCaughan, Thompson, Callum, Shel-
The neglect of qualitative research as evidence. The third, and somewhat more controversial concern about evidence-based practice is the failure to develop systematic methods to apply the results of qualitative research in clinical decision making. Based on clinical-epidemiologically derived research evidence for medical practices, the commonly accepted notion of research evidence is essentially synonymous with quantitative research, with randomized controlled trials (RCTs) and systematic review of RCTs as the gold standard. Questions that are amenable to quantitative research methodologies are generally composed of discrete and controllable variables, unlike the factors underpinning the problems of occupational performance. Qualitative methods, on the other hand, can be used to access and analyze complex and abstract phenomena and relationships (Hurley, 1999), and to systematically address the kinds of questions that are not easily addressed by experimental methods (Green & Britten, 1998). Occupational therapists therefore argue that qualitative research is crucial for informing the collaborative process of enablement (Egan et al., 1998; Hammell, 2001a, 2001b; Savin-Baden & Taylor, 2001). So far, there is little to guide practitioners on how to systematically apply the results of qualitative research in clinical practice. To address this gap, a program within the Cochrane Collaboration, the Cochrane Qualitative Methods & Campbell Process Implementation Group, is attempting to demonstrate the value of including evidence from qualitative research and process evaluations into systematic reviews (2002). However, attempting to fit research about social meanings into the quantitative paradigm may be futile (Giacomini, 2001), and efforts may be better directed toward determining which research methods best address which types of questions. Upshur’s (2001) two-dimensional theoretical model of quantitative and qualitative research provides a framework from which to address this objective. The vertical axis of the model permits the demarcation of studies that range in their purpose from measurement to examining meaning. The horizontal axis describes the nature of problems, from those that are focused on particular to general cases. Bennett and Bennett begin the process of ascribing research methodologies to types of clinical questions in their table of hierarchies of evidence (2000, p. 174). Pursuit of a complete taxonomy of research methods in relation to types of clinical questions is needed, but beyond the scope of the current paper.

The role of professional expertise in evidence-based practice. As noted above, the movement toward evidence-based practice in health care is a response to opinion-based professional practices with the objective of increasing the quality and improving the outcomes of professional services. The rise to prominence of client and research evidence in the evidence-based practice paradigm implies a relative decrease in the importance of professional expertise. In its defense, the Joint Position Statement on Evidence-Based Occupational Therapy, developed by the Canadian Association of Occupational Therapists (CAOT), the Association of Canadian Occupational Therapy University Programs, the Association of Canadian Occupational Therapy Regulatory Organizations, and the President’s Advisory Committee (1999), suggests that professional expertise is on equal footing with client and research evidence. A linear relationship between client evidence (C.E), research evidence (RE), and the professional’s expertise (PE) is inferred in the Joint Position Statement:

\[
C.E + R.E + P.E = E.B.P
\]

Graphically, the relationship between the three types of evidence and clinical decision making described within the Joint Position Statement of Evidence-Based Occupational Therapy (CAOT et al., 1999) is portrayed in Figure 1.

In the remainder of the paper I will examine this theoretical assumption by analysing the relationships between client and research evidence and professional expertise across the process of client-centered evidence-based occupational therapy practice. Figure 2 draws upon elements of the Occupational Performance Process Model (Fearing, Law, & Clarke, 1997), and the steps for evidence-based practice delineated by Tickle-Degnen (1999a, 1999b, 2000a, 2000b, 2000c) to graphically demonstrate the roles of client and research evidence and professional expertise in the process.

In Figure 2, the client, the process of client-centered evidence-based occupational therapy, and the outcomes of the client’s engagement in that process are situated in particular social, economic, and organizational contexts.

Stage 1: Gathering and appraising client evidence. Ideally, when clients enter the therapy process they work collaboratively with the therapist to assimilate relevant client evidence and define occupational performance issues and goals. While a full partnership between the client and therapist at this stage is optimal, the therapeutic process is rarely abandoned when the client is unable to fully contribute. The facility with which client evidence is evoked, assimilated, and synthesized into occupational performance goals and issues is highly contingent on the therapist’s assessment and interview skills and theoretical knowledge of occupation.

Stage 2: Framing the question and accessing and appraising relevant research evidence. There appears to be a strong consensus on the strategies to accomplish these three steps for evidence-based practice (Sackett et al., 2000; Tickle-Degnen, 1999a, 1999b, 2000a). The occupational therapist must first translate occupational performance issues into researchable ques-

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**Figure 1. Accepted Model of Clinical Decision Making in Occupational Therapy.**
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Figure 2. Professional Expertise in the Evidence-Based Occupational Therapy Process.

- **Stage 1: Client Evidence**
  1. Gather and appraise client evidence
  2. Identify occupational performance issues

- **Stage 2: Research Evidence**
  1. Identify research question
  2. Gather relevant evidence
  3. Appraise quality of evidence

- **Stage 3: Integration of Evidence**
  1. Establish applicability of RE to CLE
  2. Determine appropriateness to setting
  3. Determine method, amount, timing
  4. Identify evaluation criteria
  5. Anticipate outcomes

- **Stage 4: Decision Making**
  1. Discuss CE and RE with client
  2. Develop plans for enablement collaboratively
  3. Evaluate outcomes

- **Stage 4: Enablement & Evaluation**
  1. Further assessments as needed
  2. Undertake processes for enablement
  3. Evaluate outcomes

- **Collaborative Roles**
  - **Professional & Client**
  - **Research Expertise**
  - **Clinical Expertise**

- **Client Outcomes**

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**Figure 2.** Professional Expertise in the Evidence-Based Occupational Therapy Process.

- RE = Research evidence
- CLE = Client evidence
- CE = Clinical expertise

**Stage 1:** Client Evidence

- Gather and appraise client evidence
- Identify occupational performance issues

**Stage 2:** Research Evidence

- Identify research question
- Gather relevant evidence
- Appraise quality of evidence

**Stage 3:** Integration of Evidence

- Establish applicability of RE to CLE
- Determine appropriateness to setting
- Determine method, amount, timing
- Identify evaluation criteria
- Anticipate outcomes

**Stage 4:** Decision Making

- Discuss CE and RE with client
- Develop plans for enablement collaboratively
- Evaluate outcomes

**Stage 5:** Enablement and evaluation

The merging of enablement and evaluation is intended to show their reflexive relationship in this necessarily collaborative therapeutic process. There are three parallel outcomes resulting from the enablement process. The first outcome is the effect of therapy on the client’s occupational performance in his or her social context. The second outcome is the production of new client evidence that may generate new occupational performance issues and subsequent goals and researchable questions. The third outcome, as suggested by Lee and Miller (2003), is the therapist’s accumulation of client evidence as clinical experience, which has the potential to affect future decision making.

The roles of professional expertise and client and research evidence in evidence-based occupational therapy: The preceding examination of the process of evidence-based occupational therapy demonstrates that the role of professional expertise includes the functions of establishing client evidence and occupational performance issues, their translation into researchable questions, and the retrieval and appraisal of relevant research evidence. It is argued that success in Stage 2, developing questions and retrieving and appraising research evidence, is largely dependent on the research skills of the therapist. It is also argued that Stage 3, the analysis of research evidence with respect to client evidence, depends on the sequence of activities that are involved in therapists’ integration of research and client evidence. One exception is a recent qualitative study in which Craik and Rappolt (in press) examine therapists’ strategies for integrating research and client evidence, resulting in the theorization of the sequence of reflection, case application, and peer consultation for research utilization.

Stage 4: Clinical decision making. Like the gathering and appraising of client evidence, clinical decision making is a collaborative process that begins with the communication of relevant research evidence and its integration with client evidence (Tickle-Degnen, 1998a). Similarly, the quality of both the discussion of client and research evidence, and the shared plans developed for the enablement of the client, are circumscribed by the clinical expertise of the therapist.

Stage 5: Enablement and evaluation. The merging of enablement and evaluation is intended to show their reflexive relationship in this necessarily collaborative therapeutic process. There are three parallel outcomes resulting from the enablement process. The first outcome is the effect of therapy on the client’s occupational performance in his or her social context. The second outcome is the production of new client evidence that may generate new occupational performance issues and subsequent goals and researchable questions. The third outcome, as suggested by Lee and Miller (2003), is the therapist’s accumulation of client evidence as clinical experience, which has the potential to affect future decision making.
therapist's clinical expertise, and that these two stages are the exclusive responsibilities of the therapist. Subsequent clinical decision making and enablement and evaluation are collaborative processes that are facilitated by the therapist. This analysis of the role of professional expertise in relation to client and research evidence suggests a different relationship than the one implied in the Joint Position Statement on Evidence-Based Occupational Therapy (CAOT et al., 1999), and is represented by the following equation:

\[ PE (CLE + RE) = EBP \]

Graphic representation of this model for the process of clinical decision making is provided in Figure 3. The model is consistent with both the definition of evidence-based medicine (Sackett et al., 2000), and evidence-based occupational therapy (CAOT et al., 1999), but provides a more accurate portrayal of the role of professional expertise in the determination and application of client and research evidence in clinical decision making. This model also adheres to the sociological definition of professional expertise as the application of abstract and technical knowledge to individual cases (Freidson, 1970).

It is unlikely that the proposed models for bringing professional expertise back into prominence across the evidence-based practice process and within clinical decision making will have any direct effect on the shortage of research evidence or the neglect of qualitative research evidence. However, greater recognition of the importance of professional expertise across the evidence-based practice process may persuade managers and funders to address organizational barriers to evidence-based practice. By more fully appreciating the centrality of professional expertise to evidence-based practices, therapists may be inspired to become more reflective about their clinical practices, educators may wish to reconceptualize their curricula, and payers may reexamine their funding mechanisms. This paper invites both rigorous discussion and empirical analysis of the proposed models. ▲

Acknowledgments

I thank Nick Stitt and Janet Craik for their thoughtful reviews of earlier drafts of this paper and Sara McEwen for her assistance with the figures.

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