Evidence-based practice (EBP) is like a toolbox of methods available to the occupational therapy practitioner to aid clinical reasoning. The toolbox consists primarily of methods designed to integrate current and best evidence from research studies into the clinical reasoning process (Sackett, Richardson, Rosenberg, & Haynes, 1997). The occupational therapist integrates research into practice by carrying out the following five steps:

1. Write down a clinical question.
2. Gather current published evidence that might answer the question.
3. Evaluate the gathered evidence to determine what is the “best” evidence for answering the question.
4. Communicate with clients and colleagues about the evidence as evaluation and intervention decisions are being made during occupational therapy.
5. Evaluate the chosen evidence-based evaluation and intervention procedures as they are implemented with clients and revising and individualizing as appropriate.

I described the first step of this process of integration in the first installment of the “Evidence-Based Practice Forum” (Tickle-Degnen, 1999). Table 1 shows three primary clinical tasks of occupational therapy practice, sample questions related to these tasks, and the kind of evidence needed to answer the questions and enhance clinical reasoning related to the tasks. Once a question is identified and written down, the next step is to gather published evidence that might answer the question. The purpose of this installment of the forum is to describe how to gather evidence efficiently and comprehensively (Step 2). Future installments will discuss subsequent steps involved in EBP for occupational therapy.

Organizing the Search for Research Evidence
The search for clinically relevant research evidence is enhanced immensely by asking good questions. Good questions involve key words and phrases for starting the search. Although the search for evidence is not limited to computer searches in the library or on the Internet, it is this model of searching that I have in mind in the general search guidelines presented in the following paragraphs.

Find Evidence About the Client Population

Usually the literature search begins with the identification of research studies that have addressed the client population of interest. These studies are identified by searches on key words that identify features of the population, such as diagnosed condition, age group, and gender.

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Key Words: literature review

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Find Evidence About Occupation and Occupational Performance

Once within the body of literature related to the clinical population, the search is narrowed to look for evidence related to occupation and occupational performance. Because the term occupation has a unique meaning for occupational therapists, it is important to identify other key phrases that fall within the rubric of occupation—such as functional performance, activities of daily living, work, or play—but that are used more extensively in other fields.

The new International Classification of Impairments, Activities, and Participation (World Health Organization, 1999) is not yet being used universally across disciplines, but one of its primary strengths will be the use of uniform terminology to facilitate the communication of information and evidence across disciplines. It is important for occupational therapists to familiarize themselves now with this emerging international terminology in order to gain access to the vast knowledge network that is evolving. A second source for identifying phrases relevant to occupation and occupational performance is the thesauruses that different search services provide. For example, the OT Bibsys Thesaurus (American Occupational Therapy Foundation, 1999) lists key words that can be used for a search. Check thesauruses for alternate words and list them before beginning the search for evidence. It is important to search not only for titles, but also for entire articles (which many search services can do) because, often, occupation-relevant findings may not be apparent from the title, or abstract of an article.

Find the Type of Evidence Needed To Answer the Question

Once the body of evidence is narrowed to the occupation and occupational performance issues within a particular client population, the next strategy is to search for the type of evidence that is needed: descriptive, assessment, or intervention effectiveness. Key words that are related to study design can be useful here. For example, descriptive studies often are called just that. They are also called ethnographic, observational, qualitative, single-case, correlational, cross-sectional, longitudinal, retrospective, case-control designs, and so on. Assessment studies are often called measurement, validity, or reliability studies. Intervention effectiveness studies are often called treatment effectiveness, experimental, or quasi-experimental studies or randomized clinical trials.

Having Ready Access to Current Evidence

One of the most frequent and valid complaints I have heard from occupational therapists about the use of EBP is that it takes too much time to do a thorough search for current evidence. Often, practicing therapists simply do not have enough time to do searches when a clinical question arises. Clinical questions arise, if not explicitly, at least implicitly, every time there is a crisis of knowledge, that is, every time not all of the information relevant to evaluation and intervention is known. With a reflective and maturing occupational therapy practitioner, these crises of knowledge should be quite frequent. Therefore, for EBP to be implemented, therapists must have ready access to current evidence. Although access is improving, it is not yet at the level that is needed. However, there are some activities that, if followed routinely, can improve access. For all of these activities, the occupational therapist first must develop a list of clinical questions that pertain to the most common clinical populations and occupational issues of that population in the therapist's practice. Once the list of questions is created, the following activities can be implemented:

1. Attend continuing education workshops and conferences and collect bibliographies.
2. Join a Listserv on the Internet. A useful type of Listserv for gaining research information is one related to a particular condition. When a question arises, ask for references and information from the Listserv members. Another useful type of Listserv is one that involves other health professionals and researchers in the therapist's practice area.
3. Search the Internet regularly. Use the list of key words derived from the clinical questions. (See Table 1 for an example of how to do so.)

### Table 1
Summary of Step 1 of Evidence-Based Practice: Write Down a Clinical Question

<table>
<thead>
<tr>
<th>Clinical Task</th>
<th>Sample Question</th>
<th>Type of Evidence Needed To Answer Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify occupation and occupational performance issues that are relevant to a particular client population</td>
<td>Among elderly women who live in the community, do those with depression have restricted participation in daily life activities compared with those without depression?</td>
<td>Descriptive</td>
</tr>
<tr>
<td>Select assessments and procedures</td>
<td>What are the most reliable and valid methods for assessing occupation and occupational performance among elderly women with depression who live in the community?</td>
<td>Assessment</td>
</tr>
<tr>
<td>Plan intervention</td>
<td>What are the most effective treatments for increasing participation in satisfying daily life activities among elderly women with depression who live in the community?</td>
<td>Intervention effectiveness</td>
</tr>
</tbody>
</table>

Note. Table derived from Tickle-Degnen (1999).
Reed [1997] for methods for searching the Internet.)

4. Look over and record relevant titles of articles in professional periodicals. Keep index cards, categorized by clinical question or key words, with brief title, page number, and journal title and volume listed. (I have followed this strategy for years and have a large cataloged index system that works very well for me.) There is no need to read the papers until the clinical question has to be answered. Actually, this index card catalog (or a software equivalent) can be used to organize information gathered through any of the activities listed here.

5. Organize or join a professional study or journal group. Dina Hubacz, MS, OTR/L, an occupational therapy supervisor at St. Elizabeth’s Medical Center in the Boston area, recently incorporated EBP reviews into occupational therapy “rounds.” Every other week, a therapist reviews from three to five articles on a topic of interest and presents a synthesis of the findings from the articles. Topics have included, for example, diabetes, fall prevention, and shoulder pain. According to Hubacz (personal communication, May 1999), the goals for the therapists’ involvement in these reviews are (a) to increase the repertoire of intervention ideas, (b) to increase the ability to present topics professionally, (c) to increase professional communication between therapists and other professionals, and (d) to increase therapist motivation to perform further literature reviews. She reports that these goals are being achieved and that the therapists have responded favorably to presenting the reviews and participating in the discussions that the reviews generate.

6. Retrieve research synthesis articles first. When carrying out a computer or manual literature search, look first for articles that synthesize the findings of many research studies (preferably through a quantitative synthesis of the study findings, called a meta-analysis). These research syntheses give a large amount of evidence in a concise and rigorous format.

7. Retrieve practice guidelines that provide rigorous syntheses and evaluations of relevant research. There are several organizations and agencies that are dedicated to making EBP guidelines available through the Internet (e.g., Agency for Health Care Policy and Research, 1999; see Hayes & McGrath [1998] for a review of how to use the Cochrane Collaboration reviews for occupational therapy).

8. Start recording assessment findings and progress reports in the clinic in a database that can be accessed later and analyzed. The act of recording information in the clinic in a highly systematic manner helps to make the evidence found in daily practice more usable. Try to map progress quantitatively in the clinic by using charts and graphs. This descriptive type of information is the first step in developing an EBP database that can generate and answer many clinical questions.

Gathering the Evidence Without Bias

It is absolutely fundamental to EBP that evidence be gathered in a passionately dispassionate manner. What this means is that all evidence, most importantly that which disconfirms the occupational therapist’s previous preconceptions and biases, must be gathered. Human beings have a tendency to look for evidence that confirms what they already “know” to be true and to avoid looking for evidence that disconfirms this knowledge. In our own field, we have a strong desire, naturally so, to show that what we do as occupational therapists is effective. Although it may be true that what we do is effective, the desire to show that effectiveness by gathering evidence in a biased manner can never be justified. And, eventually, in my opinion, such a biased strategy will backfire. Rather, it is better to take the perspective that probably some of what we do is remarkably effective, and some of what we do is remarkably ineffective.

In gathering evidence, our goal should be to determine under which conditions and with which populations our assessments are most valid and reliable and our interventions are most effective. Naturally, there will be some situations in which our assessments are less valid and reliable and our interventions less effective. For occupational therapy to develop into its potential, we must seek evidence in a manner that enables us to reduce ineffectiveness and increase effectiveness. This outcome can only be achieved through a comprehensive gathering of evidence, some of which confirms and some of which disconfirms our practice beliefs.

Conclusion

It should be noted that although gathering research evidence is listed as Step 2 in the EBP process and identifying and writing down a question is listed as Step 1, these two steps inform one another, and the gathering of evidence can actually change the question being asked. For example, perhaps the search for evidence suggests that assessments for occupational performance in elderly women can be used with equal reliability and validity among women who live in the community as well as those who live in residential care facilities. The assessment question in Table 1 can then be broadened to search for assessments across elderly women living in different residential contexts. The search can be broadened, narrowed, or revised on the basis of what the literature suggests. Often, the gathered evidence generates a whole new set of questions. This very act of generating new questions, possibilities, and hypotheses is fundamental to the development of maturity and expertise in clinical reasoning (Mattingly & Fleming, 1994). So even before the steps of EBP are accomplished, clinical reasoning is enhanced. ▲
References


Hagerstown, MD: Lippincott, Williams, & Wilkins.

