Evidence-Based Practice Forum

Teaching Evidence-Based Practice

Three years ago when I taught the research methods course in our master's entry-level curriculum, it took all of my teaching skills to convince students that research was important for them to learn as beginning practitioners. "Is this relevant? I'd rather be learning clinical skills!" was the message students gave me in their course evaluations. To be frank, I myself saw the research methods course as a kind of extra appendage, albeit a useful one, applied to the body of the practice curriculum. I had somewhat resigned myself to the fate of teaching one of the courses perceived by students to be "good for you" in some mysterious sense that was understood by the authorities and no one else.

Today, I teach a reformatted course with the same old course number and name, OT620 Research Methods, but with content that has a completely new attitude. In the old course, primary objectives were to increase a students’ ability to read research studies and conduct basic studies. The structure of the course was based on the typical organization of research methods texts, that is, the steps of conducting a research study: (a) develop a research question and hypothesis; (b) choose and apply research measures, designs, and procedures; (c) perform basic data analyses; and (d) interpret results. In this type of course, research methods are treated as tools for generating scientific or practice knowledge. The distinction between the old and new structures is profound. Both support the development of skills in reading, understanding, and conducting research studies. However, I no longer have to try to convince students about the importance of research with the new EBP structure. They see the course as one that naturally fits into their first semester of professional training and as one of the courses essential to their clinical training.

The clinical tasks around which the course is organized are the three that I have discussed in previous Evidence-Based Practice Forums: (a) identifying occupation and occupational performance issues that are relevant to a particular client's population, (b) selecting assessment procedures, and (c) planning intervention. Clinical reasoning for task a is enhanced by retrieving descriptive evidence, for task b by retrieving assessment reliability and validity evidence, and for task c by retrieving intervention effectiveness evidence. For the purposes of teaching EBP, I rearrange the order in which I talk about these tasks. First, I discuss assessment evidence, then descriptive evidence, then intervention effectiveness evidence. Students need to understand fundamental measurement issues involved in assessment before they can evaluate and interpret the other forms of research evidence.

Within each of the three primary subdivisions of the course (assessment, descriptive, intervention effectiveness), I use a secondary organizing structure, specifically, the sequential steps of EBP that I have adapted and revised from Sackett, Richardson, Rosenberg, and Haynes (1997) for occupational therapy. These steps are:

1. Write a clinical question related to the specific clinical task. Students learn how to write clinical questions using variables from the World Health Organization’s (2000) International Classification of Functioning and Disability, the ICIDH-2. For every class, students read one or two research reports in addition to a research methods textbook chapter. The students are required to complete a one-page outline for each report and think about what type of clinical question (assessment, descriptive, or intervention effectiveness) the research report is answering and the type of ICIDH-2 variables (body structure/function, activity, or participation) that are involved.

2. Gather current published evidence

The clinical tasks that arise in everyday practice. In the current course, evidence-based practice (EBP) methods are treated as tools for clinical reasoning around central tasks undertaken with one’s own clients.

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that might answer the question. Students must complete an Internet and library assignment. I give them strategies for searching for each of the three forms of evidence and emphasize that evidence is to be collected in an unbiased manner; that is, they must look not only for evidence that confirms their beliefs and expectations, but also for evidence that disconfirms their beliefs and expectations. EBP does not involve searching for evidence to confirm current practice. Rather, it involves searching for information that will provide evidence to create best practice. To look for evidence to prove a point (e.g., confirm current practice) rather than to produce better practice is inconsistent with the spirit of scientific inquiry and of EBP.

3. Evaluate the gathered evidence to determine what is the “best” evidence for answering the question. This evaluation involves understanding research designs and procedures. For assessment evidence, I cover study designs that test the reliability and validity of instruments and discuss the concept of measurement error. For descriptive evidence, I cover descriptive and relational designs and discuss the concept of the normal distribution. For intervention effectiveness evidence, I cover quasi-experimental and experimental designs and discuss the concepts of internal–external validity and statistical significance.

4. Interpret the evidence to determine a possible answer to the question. This interpretation involves understanding the meaning of statistical coefficients and analyses. I cover reliability and validity coefficients for assessment evidence; measures of central tendency, dispersion, and effect size for descriptive evidence; and measures of effect size and statistical significance for intervention effectiveness evidence.

5. Communicate with clients and colleagues about the evidence as evaluation and intervention decisions are being made during therapy. I begin the course with a lecture on ethics and collaboration and discuss how informing clients about research evidence helps clients to participate in clinical decision making. Then, throughout the course, case examples are given to demonstrate how to talk about the various forms of evidence in easily understood language and in a manner that individualizes the evidence for a particular client.

6. Use research procedures to document implementation of clinical decisions and to record assessments, progress, revisions, and outcomes. I teach the students how to create simple spreadsheets to document clinical information and to start to engage in original clinical research. (In a course later in the curriculum, students develop their research skills further by conducting a group research project.)

The Syllabus

The course is taught with lectures, discussion, and experiential exercises. The first two of the once-per-week, 2-hour lectures cover the basics: the three forms of evidence, how to write answerable occupational therapy questions, the ethics of research and practice collaboration with clients, how to search for evidence on the Internet and in the library, and how to summarize study information in an outline format. The next two lectures cover each step of EBP with respect to assessment evidence, followed by two lectures that cover each step of EBP with respect to descriptive evidence. Next, an openbook, multiple-choice midterm tests the students’ ability to evaluate, interpret, and communicate about the evidence in the research reports they have read for previous classes. The subsequent three lectures cover each step of EBP with respect to intervention effectiveness evidence. The final three lectures are devoted to teaching the students how to integrate, synthesize, summarize, and communicate about a body of evidence around a particular clinical question. In class, we work together on integrating two research studies designed to evaluate reminiscing interventions with elderly clients. For a final paper, the students must independently integrate two research studies designed to evaluate the effect of added-purpose intervention on involvement in therapeutic activities. The course ends with an openbook, multiple-choice final exam that covers all readings from the semester.

EBP Teaching in a Variety of Formats

There are a variety of means by which EBP can be taught. I have described one such means—a single course dedicated to EBP. Another means is by including EBP assignments within clinical theory and skills courses. For example, students in a pediatrics course can do reviews of descriptive, assessment, or intervention effectiveness evidence related to a particular pediatric population. Another means of teaching EBP is through mentored independent study. In our curriculum, master’s students in their final year of the curriculum conduct “scholarly projects” that are EBP reviews guided by faculty mentors. Topics of the review are decided jointly by the student and faculty mentor. I welcome contributions to the Forum that describe other formats for teaching EBP.

References
