Is There Enough Evidence for Evidence-Based Practice in Occupational Therapy?

KEY WORDS
- evidence-based practice
- literature review
- occupational therapy
- research design
- trends

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In recent years, the health professions have seen an increasing call for evidence-based practice. Evidence-based practice is the “conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). Law and Baum (1998) further defined evidence-based practice as “placing more emphasis on the integration and transfer of research knowledge into practice to be used along with clinical judgment, client choice, and clinical training” (p. 131). In 2000, Holm discussed evidence-based practice related to the profession of occupational therapy and described how evidence-based practice is congruent with our profession’s Code of Ethics. Because occupational therapy as a profession has a code of ethics that calls for therapists to provide services on the basis of accurate and current information, we must, therefore, be concerned about the evidence-based research literature that supports evidence-based practice.

Evidence-based research literature is important to the profession of occupational therapy for several other reasons. As early as 1985, Ottenbacher and Petersen stated that occupational therapy was a developing profession and, therefore, therapists must seek progress toward the emergence of a more scholarly approach to practice. Ottenbacher (1987) also stated that an increase in information would lead to the refinement of existing treatment techniques and the development of new therapeutic options. In 1998, Law and Baum described evidence-based research as also effective when communicating with other professions in the clinic. Not only do other professions discuss their practice in terms of evidence, but also clinical decisions, such as referral choices, could be based on the amount of evidence professions are able to provide to demonstrate the effectiveness of service.

The need for evidence is also apparent when discussing health care spending and reimbursement issues. Law and Baum (1998, p. 131) stated that “the need for increased accountability, in conjunction with health care spending restraint, has accelerated interest in the use of research evidence as the basis for occupational therapy practice.” If we are unable to document the effectiveness of treatment, we may receive neither appropriate recognition nor adequate reimbursement for our services (Ottenbacher & Petersen, 1985).

The issue for the profession, therefore, is that to be able to participate in evidence-based practice, we must have adequate evidence on which to base our treatment decisions. Ottenbacher and Petersen (1985) examined the occupational therapy literature for trends in research published over a 10-year period from 1973 to 1983. They classified research articles into four categories on the basis of the type of statistical analyses used: no statistical analyses;
descriptive statistical analyses only; basic statistical analyses; and advanced statistical analyses, such as factorial analysis of variance and multiple regression. They found that the use of advanced statistical analyses increased from <10% in 1973 to almost 30% by 1983. The percentage of research articles that used no statistical analyses also decreased from approximately 60% in 1973 to just more than 30% in 1983. In 1983, however, more research studies were still published using no statistical analyses than in any of the three other categories.

Andersen, Tang, and Barney (2006) examined all published articles from January 1996 through October 2002 that used the words occupational therapy by searching MEDLINE and CINAHL. The articles were coded into scholarship categories that included letters, reviews, research, tangential research (research that did not include occupational therapy), training–education, patient–community management, case reports, editorials, practice acts, and other. Of the 3,391 publications reviewed, only 26.2% were classified as research articles. Of the publications that were exclusively published in occupational therapy journals, only 21% were research articles. Higher percentages of research articles were found in rehabilitation medicine journals, in which they made up nearly 43% of published articles.

More recently, Case-Smith and Powell (2008) reviewed a 5-year span of the occupational therapy literature from 2001 to 2005 to determine the percentage of research articles published, the types of research designs used in research publications, and the practice areas addressed. Although the percentage of research articles published in the occupational therapy literature overall increased compared with earlier studies, they did not find a statistically significant increase in that 5-year span. Qualitative designs were the most commonly used method, making up 24.3% of published articles. Experimental and systematic reviews accounted for only 12.5% and 11.4% of published articles, respectively. Research articles were grouped by topic: physical disability and rehabilitation, pediatric and school based, mental health, geriatric, assistive technology, and other. Physical disability and rehabilitation was the most commonly researched area, making up 34.8% of the article topics over the 5-year span. Pediatric- and school-based research articles were also common, making up 28.6%.

To further examine the trends in our current body of knowledge and to determine the amount of evidence available to occupational therapists and occupational therapy assistants, we updated the Ottenbacher and Petersen (1985) findings by examining a more recent 11-year period (1995–2005) to determine whether the occupational therapy profession has increased its level of research knowledge in response to the growing demand for evidence on which to base practice. Ottenbacher and Petersen used the studies’ levels of statistical analyses as the basis for their categories of research. For this study, we updated the categories to match the levels of evidence for evidence-based practice (Holm, 2000).

We classified the reviewed articles on the basis of Holm’s (2000) Eleanor Clark Slagle lecture, “Our Mandate for the New Millennium: Evidence-Based Practice”:

- Level I—strong evidence from at least one systematic review of multiple well-designed randomized control trials
- Level II—strong evidence from at least one properly designed randomized controlled trial of appropriate size
- Level III—evidence from well-designed trials without randomization, single group pre–post, cohort, time series, or matched case-controlled studies
- Level IV—evidence from well-designed nonexperimental studies from more than one center or research group

Two graduate student researchers reviewed 11 years of research articles appearing in Volumes 49 (1995) to 59 (2005) of the American Journal of Occupational Therapy (AJOT). We chose AJOT to replicate Ottenbacher and Petersen (1985) because AJOT has the most highly rated impact factor of all peer-reviewed occupational therapy journals that can be accessed in electronic databases (Andersen et al., 2006). We did not include in the analysis several feature departments appearing in the journal. The excluded articles included Nationally Speaking, The Student Speaks, The Issue Is, editorials, book reviews, memorials, and official reports or position papers from association departments or task forces.

A total of 788 articles were reviewed. Trends in research publications from 1995 to 2005 show changes among the levels (see Figure 1). Level V publications decreased from 75% of articles published in 1995 to 65.5% in 2005. Level IV publications increased slightly from 6% in 1995 to 15.5% in 2005. Level III publications fluctuated throughout the years but started at 19% in 1995 and ended at 19% in 2005. Throughout the 11-year period, AJOT published very few Level I and Level II articles. In 1996, there were four Level II publications, with a total of nine publications over 11 years (0–1 articles were published in the other years). In 1996, there were two Level I publications, with a total of five publications over 11 years (0 or 1 articles were published in the other years). The percentages for Levels I and II began at 0% in 1995 and ended at 0% in 2005.

We also calculated each level’s overall percentage of total publications for the time span: Level I, 0.6%; Level II, 1.2%; Level III, 25.3%; and Level IV, 5.5% (see Figure 2). More than half of the publications between 1995 and 2005 were Level V (67.4%).

These results do not support the hypothesis that an increase in the focus of our profession on evidence-based practice has led to an increase in the evidence-based research literature published in AJOT. The analyses revealed some decrease in Level V studies and some increase in Level IV studies but did not show an increase in highly controlled quantitative studies (Level I and Level II) over the period reviewed. Ottenbacher and Petersen (1985) discovered that quantitative methods in the occupational therapy literature had increased from 1973 to 1983. He believed that this was a "positive trend indicating that occupational therapy is responding to internal and external pressures to..."
pursue true professional status within the healthcare fields" (Ottenbacher & Petersen, 1985, p. 245). This trend, however, has not been sustained despite pressure to produce research evidence on which to base occupational therapy practice. For the period from 1995 to 2005, very few articles were published in *AJOT* in the highest categories of evidence, Level I and Level II. According to this study’s results, Level V research articles still dominated the literature published in *AJOT* by 2005.

The research articles using qualitative methods exceeded the research articles using quantitative methods every year over the time period reviewed (see Figure 3). The lowest number of qualitative articles was 37 in 1999 and 2002; the highest was 72 in 1995 and 85 in 1997. The mean of qualitative articles was 51.45 (standard deviation = 14.82); the median was 44 over the time period. The lowest number of quantitative articles was 8 in 2005; the highest was 24 in 1997 and 1998. The mean of quantitative articles was 20.18 (standard deviation = 4.83); the median was 22 over the 11-year period.

We conducted further examination of the contents of those research articles using quantitative methods to determine the extent to which these articles investigated the effectiveness of clinical interventions. Among the articles that used quantitative methods to answer the research question, 35% investigated the effectiveness of a clinical intervention. The trend of percentages of papers that investigated the effectiveness of clinical interventions, however, decreased rather than increased. We compared the average percentages from 1995 to 1997 with those from 2003 to 2005. Research articles that investigated the effectiveness of clinical interventions using quantitative methods averaged 55% for the first 3 years and 27% for the last 3 years. Rather than providing increasing evidence on which to base the practice of occupational therapy, our research literature has actually been providing decreasing evidence.

Overall, these numbers do not indicate that ample evidence exists on which to base our clinical practice or that the evidence is increasing in response to the growing demand for evidence-based practice. This investigation, however, does have some limits. We examined only research articles published in *AJOT* during an 11-year period and did not review other occupational therapy publications, such as *OTJR: Occupation, Participation and Health* or *Occupational Therapy in Health Care*. Moreover, we did not review articles published in journals that are not specific to the profession of occupational therapy. Many research articles that provide evidence for occupational therapy practice may be published in medical, educational, psychological, and other social sciences journals. According to Andersen et al. (2006), rehabilitation medicine journals published more research articles involving occupational therapy than did occupational therapy journals.

The possibility that there has been an increase in occupational therapy research knowledge published in other journals is an important issue for the profession. We need to publish research knowledge for our fellow practitioners, but we should not disseminate information solely among ourselves. Publication of our research knowledge in journals outside of our profession is important to build a collaborative body of knowledge and to educate other professionals about our contributions to treatment in our domain of concern. As a profession, however, we must examine this trend and be aware of its possible impact. Publication of our best evidence in journals that are not core to our profession may ultimately reflect poorly on our profession. *AJOT* is the most widely disseminated journal in the profession of occupational therapy. It is important that practitioners have access to the best evidence supporting our practice. If this trend persists, practitioners may have limited access to or limited awareness of the evidence, and the quality of the evidence published in our journals may decline.

Although we examined the levels of evidence of publications in *AJOT* in all practice areas combined, there may be specific areas of our practice that have a wealth of Level I and Level II studies to support implementation of intervention. For example, Case-Smith and Powell (2008)
found that a high percentage of research articles published in the occupational therapy literature were in the physical disability–rehabilitation (34.8%) and pediatric and school-based (28.6%) practice areas. Gutman (2008a) found similar results when examining the articles published in AJOT in 2008. Of the articles that studied the effectiveness of intervention, 46% addressed the area of children and youth, and 27% addressed the area of rehabilitation, disability, and participation.

Note that the levels of research do not indicate the quality of the research conducted. Tickle-DeGenn and Bedell (2003) discussed this issue, stating that they were concerned about

the inflexible ranking of research studies according to the standard levels of evidence model, and... even more about the possible effects of this model on clinical decision making in rehabilitation if the model were put into practice in an exclusive manner. (p. 234)

It is possible that we have begun to improve the quality of our studies regardless of the level of evidence provided in each study.

Directions for Future Action

As a profession, occupational therapy has embraced the idea of evidence-based practice. The results of this study, however, indicate that the research knowledge published in AJOT from 1995 to 2005 did not increase according to the levels of evidence needed to support evidence-based practice. If we are truly dedicated to the promotion of evidence-based practice, we must find a means of promoting evidence-based research to support our practice.

Evidence-based research could be promoted in several ways. First, we should carefully consider the focus of our research questions. Focusing our research questions on solving clinical problems will lead to applied scientific inquiry that is relevant to current practice. Assessment of the effectiveness of clinical guidelines that are currently being used can lead to modification of those guidelines or the development of new, theoretically based guidelines that address clinical problems. This process not only would lead to evidence on which to base practice but also would ensure that the evidence is directly relevant to the problems faced by clinicians on a daily basis.

Forming collaborative relationships among the clinicians who are aware of clinical problems and the academicians who are skilled in the research process would be another means of fostering the development of evidence-based research. These relationships should be established with mutual respect for the expertise each person brings to the research process. Clinicians are experts on the clinical questions that lack evidence on which to base practice, and they can provide direction for potential solutions to clinical problems. Academicians can provide knowledge regarding research design, implementation, and potential funding sources that support the research process.

AJOT can also promote evidence-based research directly. This promotion has already begun with statements establishing the publication of research evidence as a priority (Gutman, 2008b). AJOT may be able to further attract higher levels of evidence-based research submissions by establishing an incentive that promotes this goal. A cycle needs to begin in which high levels of clinically relevant, evidence-based research are submitted to and published in AJOT, disseminated to practitioners, and used to provide evidence-based practice in the profession of occupational therapy. ▲

Acknowledgment

Thank you to Lindsey Luts, a graduate student in the Department of Occupational Therapy at Western Michigan University, for her assistance with data collection, data entry, and data analyses for this article.

References


Gary Kielhofner, DrPH, OTR/L, FAOTA; Lisa Castle, MBA, OTR/L; Supriya Sen, OTR/L; and Sarah Skinner, MEd, OTR/L

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