

Integrating Evidence-Based Practice Instruction into the Curriculum

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Evidence-based practice (EBP) is the thoughtful and purposeful consideration of evidence that supports specific clinical activities (Herbert, Sherrington, Maher & Moseley, 2001; Justice & Fey, 2004; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). It also is one part of the clinical-decision making process clinicians are urged to use (ASHA, 2004). While this information is likely not surprising or even new, given the preponderance of articles on EBP in our professional literature, what is somewhat new is how academics can best help students understand, use, and even embrace EBP during their educational program and then, hopefully, in their clinical practices. While discussions of best practices and practice guidelines have occurred for many years, EBP brings with it a need for knowledge and skills that may not be readily at hand. In this report, we briefly discuss EBP as part of a more general clinical decision-making process. We then will review how the Communication Sciences and Disorders program at Wichita State University has attempted to infuse EBP into its classes and clinical practica.

Evidence-Based Practice

Evidence-based practice is a mindful or conscientious use of current theory and research to guide the clinical services provided by speech-language pathologists and audiologists (Gambrill, 1999; Sackett, Richardson, Rosenberg, & Haynes, 1998). It requires clinicians to integrate evidence with their clinical experiences and their knowledge of their client's, and their client's family's, needs and desires for healthy

communication. By integrating EBP into the clinical decision-making process, speech-language pathologists and audiologists demonstrate to the world that their intent is to provide clinical practices founded on data and science, rather than on an “I know it works” mentality (Wolf, 2005). EBP helps clinicians be accountable to their clients, third party payers, and the profession as a whole. In fact, ASHA’s Code of Ethics (ASHA, 2003) states that members must provide professional services that are effective and demonstrate independent professional judgment.

One cannot talk about EBP, however, without considering what evidence means. Again, there have been some excellent tutorials on the subject, both within (Robey, 2005) and outside of our profession (Sackett, et al., 1998). Evidence can come in the form of single-subject designs or case studies, experimental and control group studies, or large randomized controlled clinical trials. While some may argue that there is one golden standard for EBP (e.g., large randomized controlled clinical trials), the evidence must match the clinical question being asked (Fey, 2004). For example, if communication disorders professionals want to know whether a particular clinical procedure is feasible (i.e., does some benefit come from the approach), it is best to refer to, or conduct, small group or single subject design studies. If one wishes to know the efficacy of a specific clinical procedure or program, then one should look for, or implement, randomized controlled clinical trials. One might turn back to small group or single subject design studies, though, when attempting to answer whether a procedure shown to be highly effective in a non-clinical setting translates to real world clinical situations. The bottom line here, then, is that speech-language pathologists and audiologists must determine what evidence is “best” based on the question asked.

As we all know, however, strong or compelling evidence for many clinical questions is limited or non-existent in our literature. When there is a paucity of evidence, communication disorders specialists should turn to their knowledge of theory, structure, function, and/or process to help drive their clinical decision making. By examining current data-supported theories, clinicians can use “reason-based practice within their clinical decision making process (Stanovich & Stanovich, 2003).

The Clinical Decision Making Process

Evidence-based practice is one part of the clinical decision making process (ASHA, 2004). Provision of clinical services also is founded on clinical expertise and knowledge of the client’s needs, values, and preferences. We believe that the clinical expertise portion of the decision-making process may, at times, be misunderstood or misused. Expertise in particular settings and with particular clients is a valuable component to making clinical decisions. However, expertise and experience do not necessarily equate to the number of direct clinical contact hours one has accrued. Growth in clinical abilities can and does occur through increased understanding of the literature (Gallagher, 2002). Additionally, because of human nature and preconceived notions, clinical expertise can color or bias decisions (Fey, 2004). For example, a long employed yet undocumented and uncontrolled clinical approach that incorporates several different activities or procedures and leads to client progress may be misleading (Apel, 1999). It may be that all the tasks used within the approach do not contribute to the outcomes noted and the tasks which do not contribute to a client’s progress actually detract from those specific components which directly affect improvement. As Wolf (2005) argues,

clinicians must deemphasize their intuitions and unsystematic clinical experiences so as to downplay the negative effects of personal bias.

The needs, values, and preferences of clients and their families also should influence the decisions clinicians make. The characteristics of a client and or his family may dictate that certain clinical procedures require modification. For example, client characteristics, such as cognitive or physical abilities or emotional status may cause clinicians to modify procedures or physical environment. Likewise, the client's culture may necessitate the modification of a procedure based on evidence from a population that does not match that of the client's. Considering the client's needs, values, and preferences, along with the scientific evidence and the clinician's pertinent and worthwhile clinical experiences and expertise, yields a sound, triarchic approach to clinical decision making.

Implementing an EBP-based Clinical Decision Making Process into an Academic Unit

At Wichita State University (WSU), the academic faculty and clinical educators made a conscious decision to understand and then implement EBP into the academic and clinical experiences of all students matriculating through the undergraduate and graduate programs. This conscious decision involved three basic components: reading and discussing the EBP literature, developing common EBP tools to be used by all educators in the department, and implementing a program of EBP infusion.¹

Literature review and discussions

For one and a half years, department members met voluntarily on the first Friday of the month to discuss selected readings on EBP. The meetings were held off campus to

¹ Portions of this process were discussed in Apel and Self, 2003.

provide a more relaxed atmosphere and to encourage a feeling of camaraderie and unity in purpose. The readings were selected from both within and outside of the discipline. These discussions led department members to consider other readings and debate alternative views to those found in the literature. Members found that, as time progressed, their understandings of EBP both deepened and broadened. One outcome of these meetings was an ASHA presentation reporting on the process and an EBP worksheet for recording evidence found in the literature. An EBP-based clinical-decision making flowchart also was developed. Both of these EBP tools were, and continue to be, revised and refined over time.

EBP Tools

The first WSU EBP tool created was an EBP analysis worksheet for recording data gleaned from studies offering various kinds and levels of clinical evidence (this document is available at www.wichita.edu/csd/ebp). Originally based on the work of others (e.g., Ashford, 2002; Law, 2000), this worksheet underwent many iterations as department members refined their understanding of EBP. The purpose of the EBP worksheet was to help department members and, eventually, students to record their findings for evidence from the literature. The worksheet allows the respondent to briefly note the purpose of the study, the type of participants, the method used, the findings, and thoughts or concerns about the study. Within each of these sections, the respondent is required to provide judgments of the points analyzed, such as the degree of reliability, and the authors' interpretations of the results. Using this focused analysis worksheet, department members believed that respondents would better analyze and consider the findings of studies reporting clinical evidence.

Along with the EBP analysis worksheet, Trisha Self and Kenn Apel constructed an EBP-based Clinical Decision Making Flowchart (see www.wichita.edu/csd/ebp). This flowchart reflects the thought processes one can take when searching for, evaluating, and implementing evidence into clinical practice. After input from department members and others which led to modifications, this flowchart became a reference point for both department members and students alike. Both the EBP-based Clinical Decision Making Flowchart and the EBP Analysis Worksheet became foundation tools for infusing EBP into the academic and clinical courses.

EBP Program Implementation

After using the EBP Analysis Worksheet themselves and refining it per feedback from various members, department educators decided to introduce EBP across the curriculum and to encourage student use of the EBP analysis worksheet. This implementation took several forms. At the undergraduate level, students in the Senior Seminar course read articles about EBP and wrote reaction papers. They then were assigned to find EBP research articles and use the EBP analysis sheet (formative assessment feedback later revealed this portion was difficult for the seniors). At graduate level, many of the academic courses incorporated the EBP analysis worksheet into course requirements. For example, in one class, students were paired up and then required to read four current clinical research articles and complete the worksheet. They then constructed a “summary table” of the information from all the research articles and wrote a short summary of the findings with suggestions for what additional evidence was needed. Finally, in the clinical practica, students completed the EBP analysis worksheet on literature related to the type of client they were serving.

The EBP-based Clinical Decision Making Flowchart also was used as a teaching tool. For example, the flowchart was enlarged to a 3'x5' poster and placed on a prominent wall within the Speech-Language-Hearing Clinic. Students and faculty then placed small notes at various points on the chart and stated how their clinical or research work represented the particular point (see picture). This procedure helped keep EBP in the minds of clinicians as they made their clinical decisions on a daily basis. Additionally, the use of the flowchart encouraged some department members to undertake evidence-based research because of a dearth of evidence in their particular clinical area. Students were involved in this research, and they were shown how the research fit into the flowchart's "investigative branch."

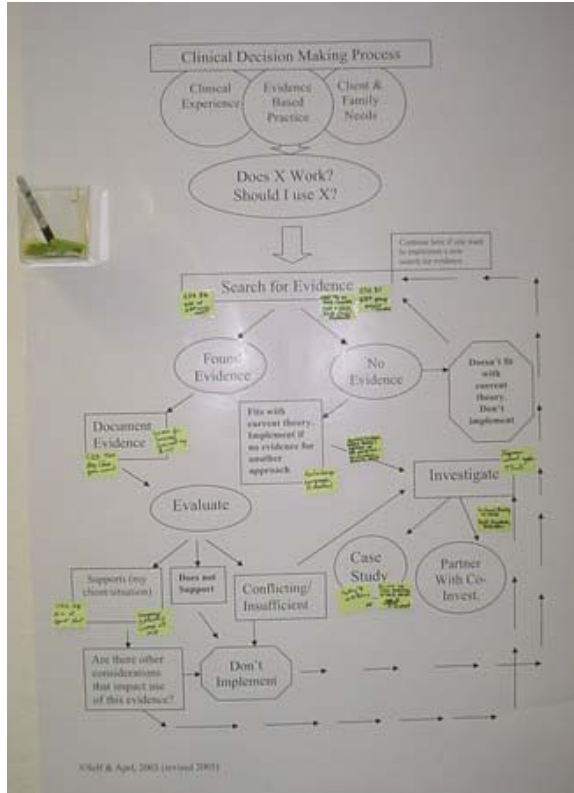
Other means of infusing EBP into the curriculum included educating the students to become critical clinical consumers. For example, in some courses, students were introduced to the "MART Strategy" (Apel & Wolter, 2004). The acronym in this strategy reminds clinical consumers to ask questions of the lecturers they may encounter in the future as part of their continuing education. First, students are encouraged to consider the *motivation* of a speaker. They need to determine whether the speaker is attempting to provide a data-driven or theory-driven clinical approach or sell a product. Second, students are asked to consider the *activity level* of the speaker: is this speaker active in research and/or compiling systematic and specific documentation of clinical outcomes? Third, they need to determine whether the source of the information comes from *reputable*, peer-reviewed publications or, at least minimally, is based in current theory. Finally, they are asked to consider whether the *theory* or rationale underlying the

proposed procedure or approach matches their theory of learning and currently accepted understandings of the clinical issue at hand.

Finally, students were made aware of specific internet sites where they can that conduct searches for either single examples or collections of evidence about specific clinical procedures or approaches. Common sites referenced include the the Department of Education's ERIC database (<http://www.eric.ed.gov>) and Institute of Education Sciences' What Works Clearinghouse (<http://www.w-w-c.org>), the Cochrane Collaboration (www.cochrane.de/cc/cochrane/revabstr/mainindex.htm), the CanChild Centre for Childhood Disability Research (www.fhs.mcmaster.ca/canchild/publications/outcome_measures.html), and the ASHA journals website (<http://www.asha.org/members/deskref-journals/journals>).

Summary

The importance of using EBP in the clinical decision making is indisputable. How programs in Communication Sciences and Disorders can best impart this importance to their students, and help them become users of EBP while still in their education programs, remains to be seen. This report is one program's attempt to infuse EBP into its academic and clinical coursework. Undoubtedly, with time, increased understanding of the issues, and models of EBP infusion from other programs, all CSD programs will develop course and practicum protocols and integrate EBP instruction into their curricula.



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