

The Contributions of Evidence-Based Practice to Clinical Treatment

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A central mission of the applied clinical sciences of speech-language pathology and audiology is to provide our clients with effective diagnostic and treatment services. With respect to treatment in particular, the ultimate aim is to serve our client's best interests by providing intervention services that facilitate successful, rapid and cost-effective gains in communicative functioning. This aim constitutes a fundamental element of the practice of applied ethics that is known as *beneficence* (Frattali, 1998). That is to say, we strive to do the best for our clients by making their needs the top priority of clinical treatment.

The implementation of evidence-based practice has strong potential to assist us in achieving the applied ethical goal of beneficence. The reason is that evidence from research can determine the *effectiveness, effects, and efficiency* of our clinical treatment procedures, respectively (Olswang, 1990). This, in turn, can inform and improve the ways in which we conduct day-to-day clinical practice. To illustrate, as experimental research determines that a certain kind of treatment is effective in promoting linguistic change (i.e., treatment effectiveness), then this method becomes one of the treatment options that is available to our clients. As experimental research demonstrates that certain linguistic gains come about as a result of treatment (i.e., treatment effects), then treatment can be matched specifically to our clients' needs. Of most importance, as experimental research establishes that one treatment method is better than another in promoting linguistic change (i.e., treatment efficiency), then this points us to the best available treatment protocol. Thus, when evidence from research is the foundation of our clinical practice, it maximizes the success of our treatment programs.

Despite its attraction, there is one drawback in the way that evidence-based practice has been defined and implemented across the applied sciences generally. The limitation is associated with the randomized clinical trial being defined as the ultimate "gold standard" of evidence (Dollaghan, 2004). Within the communication sciences as a whole, there have been few randomized clinical trials in evaluation of treatment efficacy (e.g., Law, Garrett, & Nye, 2003). This may falsely give the impression that we know little about the nature of clinical treatment; yet, the scientific knowledge base of our discipline is not impoverished. There are

numerous substantive studies of treatment efficacy that have utilized a range of alternate and valid experimental approaches besides the randomized clinical trial. These alternate approaches to research are necessary because the populations we serve are diverse and heterogeneous, with communication disorders that are complicated and multifaceted. Consequently, our intervention plans (whether administered in or outside of the laboratory) must be fine-tuned to the specific and unique needs of each client. The single-subject experimental design is one example of a research approach that meets this description (McReynolds & Thompson, 1986). Single-subject designs are tailored to the individual, and have a further advantage in that results from the research laboratory are directly transferable to the clinical setting. As such, single-subject experiments have contributed a substantial body of evidence attesting to the effectiveness, effects and efficiency of clinical treatment. It is this type of evidence then that can be applied to improve the quality of our services.

The relevance of evidence-based practice to clinical treatment is perhaps best illustrated by a recent and replicated finding. Namely, treatment of a more complex linguistic target or goal promotes significant gains in communication (for review, see Gierut, 1998, 2001 and references therein). Widespread generalization learning is just one of the positive effects that follows from treatment of a complex target or goal. Complexity as a trigger of generalization has been documented for a range of populations and communication disorders. A complex treatment target has been shown to benefit toddlers and children, including those who are late talkers, phonologically disordered, diagnosed with developmental apraxia of speech, or learning English as a second language. Complexity of the treatment target has also been demonstrated for adults with aphasia or apraxia of speech, as well as those who are second language learners or cognitively impaired. For language in particular, the evidence supporting complexity crosscuts the modules of grammar in facilitating the acquisition of syntax, semantics and phonology alike. For applied sciences in general, complexity has been cited in mastery of motor, linguistic, cognitive, mathematical, educational and social skills. Theoretically, the construct of complexity has a well-established history in certain developmental, educational and philosophical models (Gagné, 1977; Rescher, 1998; Wexler, 1982). As extended to the clinical setting, practitioners are able to employ this evidence to craft a specific and

individualized intervention plan that has a complex linguistic target as its goal, and that predicts a pattern of broad generalization learning as its outcome. Linguistic complexity, as one instantiation of evidence-based practice, holds promise in improving the efficacy of our clinical services by successfully meeting the treatment needs of a host of clients, of varied ages, with diverse types of communication disorders. In this way, beneficence through evidence-based clinical practice is achieved. ♦ ♦

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