CHAPTER 4

EFFICACY OF TECHNOLOGICALLY BASED AAC INTERVENTION APPROACHES

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INTRODUCTION

With the advent of evidence-based practice in health care defined as “finding, appraising, and using contemporaneous research findings as the basis for clinical decisions” (Rosenberg & Donald, 1995, p. 1122), it has become critical to evaluate the evidence about the efficacy of technologically based augmentative and alternative communication (AAC) intervention in persons with aphasia. Schlosser and Raghavendra (2004) defined evidence-based practice in AAC as “the integration of best and current research evidence with clinical/educational expertise and relevant stakeholders perspectives, in order to facilitate decisions about assessment and intervention that are deemed effective and efficient for a given direct stakeholder” (p. 3). The primary purpose of this chapter is to systematically review AAC intervention studies that involved technology as one of the treatment components for individuals with aphasia. The objectives of this review are (1) to describe characteristics of the included studies (e.g., participants, time post-onset, severity of aphasia, and target behaviors), (2) to evaluate intervention outcomes, (3) to appraise the methodological quality of intervention studies, (4) summarize the results of studies that were
not included in the systematic review because of methodological concerns, and (5) to identify gaps in the available data to highlight areas for future research.

**METHODS**

A systematic review methodology was utilized to limit bias in locating, appraising, and synthesizing all relevant AAC intervention studies. This involved a comprehensive search for treatment studies using various databases (e.g., Cumulative Index for Allied Health Literature (CINAHL), PubMed, and Educational Resources in Education Clearinghouse (ERIC)), hand searches of selected journals, as well as ancestry searches. Database searches, including bibliographic database searches (e.g., Academy of Neurologic Communication Disorders and Sciences (ANCDS)), involved locating articles using specific search terms (e.g., AAC and aphasia), and/or searching for articles specifically related to aphasia intervention and/or AAC intervention. Relevant journals (e.g., *AAC* and *Aphasiology*) were also selectively hand searched for potentially relevant articles. Ancestry searches involved examining reference lists of previously published studies related to AAC intervention and aphasia. Each of the search methods utilized involved reviewing titles, abstracts, and/or full-text articles to determine the relevancy of each study. The author and a graduate student in communication sciences and disorders independently decided on study inclusion. Once relevant studies were found, inclusion criteria were applied to determine which articles met the criteria and could be further analyzed. Any disagreements were resolved through a consensus process.

**INCLUSION CRITERIA**

To be included in this review, the article had to describe a research study that included the provision of an AAC intervention using technology with at least one participant with a diagnosis of aphasia. Additionally, the dependent variables of the studies related to outcomes in which some type of change in behavior was observed secondary to AAC intervention. These included, but were not limited to the identification and manipulation of graphic symbols, production of words, phrases and/or sentences using graphic symbols, and functional communication using either dedicated speech-generating devices (SGDs) and/or graphic symbols or text-based