

Critical Review:
What is the evidence that communication interventions are effective at improving communication outcomes for adolescents with acquired brain injury?*

Bracia Eaton
M.Cl.Sc. (SLP) Candidate
Western University: School of Communication Sciences and Disorders

This critical review examines the efficacy of communication interventions for improving communication outcomes in adolescents with acquired brain injury. Five articles were included in this review. Studies included four Level 1 designs (i.e., one randomized controlled trial (RCT), one single subject crossover design, one single subject multiple baseline design, one single subject design), and one Level 3 design (i.e., single group pre-posttest design). Overall, the results of this review revealed suggestive evidence that communication interventions are effective at improving communication outcomes for adolescents with acquired brain injury. Clinical implications and future research recommendations are also discussed.

Introduction

Acquired brain injury (ABI) is the leading cause of death and disability in adolescents (Keenan & Bratton, 2006; Oberg & Turkstra, 1998). ABI in adolescents is a diverse condition of various etiologies, including but not limited to brain tumours, aneurysms, and traumatic brain injury (TBI) (e.g., falls, motor vehicle accidents, abuse) that can influence brain functioning (Laatsch et al., 2007). In particular, cognitive-communication disorders and psychosocial challenges can result from and persist in ABI in adolescents (Thomas-Stonell, Johnson, Schuller, & Jutai, 1994; Turkstra & Burgess, 2007). Many adolescents with ABI experience subtle difficulties in higher level cognitive-communication abilities such as word retrieval, discourse, comprehension of abstract and figurative language, social skills, memory, organization and executive functioning (Slomine & Locascio, 2009; Thomas-Stonell et al., 1994; Wiseman-Hakes, Stewart, Wasserman, & Schuller, 1998). Given that treating individuals with cognitive-communication disorders is within the speech-language pathologists' (SLPs) scope of practice (CASLPO, 2002), SLPs need to be familiar with effective interventions to assist their adolescent clients with ABI in clinical practice.

Objectives

The primary objective of this paper is to critically evaluate the existing literature regarding the effectiveness of communication interventions for adolescents with ABI. The secondary objective is to provide SLPs with evidence-based clinical recommendations and future research areas with this population.

** This paper was created as a required assignment for the CSD9639 Evidence Based Practice for Clinicians course at Western. While it has been evaluated by course instructors for elements of accuracy and style, it has not undergone formal peer-review.*

Methods

Search Strategy

Computerized databases including PubMed, Google Scholar, Scopus, and CINAHL were searched using the following terms: (adolescent OR teen) AND (treatment OR intervention OR therapy) AND (brain injury OR ABI OR TBI OR concussion).

Selection Criteria

To be included in this critical review, studies had to provide a communication intervention to at least one adolescent with ABI. For the purpose of this review, an adolescent was defined as an individual between the ages of 10-21 years, and communication interventions were defined as various receptive and expressive language and pragmatic interventions that aim to improve communication outcomes for adolescents with ABI. Participants described in each study were required to have communication deficits secondary to ABI, and not related to premorbid conditions such as intellectual disability or specific language impairment. Studies that targeted attention, memory, cognition or behaviour were excluded. Additionally, studies that focused on assessment or literature reviews of communication profiles of adolescents with ABI/TBI were not included in this review. Limitations were not placed on severity of ABI, time since onset of ABI, research design or outcome measures.

Data Collection

Results of the literature search yielded five studies that met the selection criteria. The studies included four Level 1 designs, i.e., one RCT (Thomas-Stonell et al., 1994), one single subject multiple baseline design (Chapman, Ewing, & Mozzoni, 2005), one single subject crossover design (Franzen, Roberts, Schmits,

Verduyn, & Manshadi, 1996), and one single subject design (Oberg & Turkstra, 1998); and one Level 3 design, i.e., single group pre-posttest design (Wiseman-Hakes et al., 1998).

Results

Thomas-Stonell and colleagues (1994) conducted a randomized controlled experimental design to compare multiple standardized language measure outcomes in two groups of six adolescents with TBI (aged 13-21 years) who received either a computer assisted cognitive-communication remediation program (TEACHWARE) or traditional therapy/community school program (control group). The use of the TEACHWARE screening tool to assess progress of the intervention was also explored. The participants were randomly assigned to each group. Frequency of therapy sessions varied across participants, but overall averaged to be one hour sessions twice per week. Pretest and posttest measures using standardized tests were administered.

Analysis of covariance was used to determine the effectiveness of the remediation modules at improving performance on standardized measures after 8 weeks of therapy. However, the sample size (N=12) may have been too small for ANCOVA. The covariate was the baseline measures from the standardized test scores. The remediation group improved significantly on most of the standardized assessment measures compared to the control group. Within-groups effects were examined using t-tests to determine if there was a significant difference on standardized measures. However, results should be interpreted cautiously as multiple testing of standardized measures compromised the nominal

skills gained from these interventions generalize to real life contexts of daily living.

It is important to mention that all of the studies in this critical review had limited sample sizes. Although it may be challenging to recruit enough participants especially within a specific population that meets

