Are outcome measures for early intensive treatment of autism improving?

Johnny L. Matson, Robert D. Rieske

Louisiana State University, USA

Abstract

Autism Spectrum Disorders (ASD) are lifelong conditions which can be very debilitating. This disorder can be identified within the first two years of life, thus spurring the popularity of Early Intensive Behavioral Interventions (EIBI). Since 1987, the number of studies has been increasing as efficacy has been established. There has been a broad and inconsistent set of methods and procedures to establish experimental groups, evaluate treatment outcome, and assessing family reactions to treatment. In 2007, Matson noted that most EIBI studies failed to address many important dependent variables include the measurement of core symptoms of ASD. This study evaluates dependent variables used to assess the factors noted above, separated into studies published before 2008 compared to 2008 and later. Results are an indication that improvements are occurring, especially on the measurement of core symptoms of ASD; however, considerably more improvement is needed.
1. Introduction

The prevalence of Autism Spectrum Disorders (ASD) has increased drastically in recent decades (Matson & Kozlowski, 2011). This point is underscored by the fact that the condition has a lifelong course (Fodstad, Matson, Hess, & Neal, 2009; Horovitz & Matson, 2010; Matson, Boisjoli, Hess, & Wilkins, 2010; Matson, Dempsey, & Fodstad, 2009; Matson, Hattier, & Belva, 2012). ASD is pervasive, affecting communication, adaptive and social skills, and often overall cognitive functioning (Hattier & Matson, 2012; Matson, Kozlowski, & Matson, 2012; Matson & Wilkins, 2009; Smith & Matson, 2010a,b,c). Additionally, the disorder is often co-morbid with a host of motor problems, challenging behaviors, and psychopathology (Matson, Hess, & Boisjoli, 2010; Matson & Rivet, 2008; Matson, Tureck, & Rieske, 2012; Sipes, Matson, & Horovitz, 2011). As a result of these factors there has been a concerted effort by many researchers to develop methods and procedures that would enhance the reliability, consistency, and validity of assessment. This problem is compounded by the complexity of the overall problem. Persons can range from intellectually gifted to profoundly intellectually impaired for example (Matson, Dempsey, LoVullo, & Wilkins, 2008; Matson & Wilkins, 2008). Not only is the condition heterogeneous but it is further complicated by comorbidities (LoVullo & Matson, 2009; Matson & LoVullo, 2008; Matson & Neal, 2009; Matson, Wilkins, et al., 2009; Rojahn et al., 2009). This heterogeneity has led to the use of packaged interventions referred to as Early Intensive Behavioral Interventions (EIBI).

2. Early Intensive Behavioral Interventions (EIBI)

EIBI has become a popular approach in the rehabilitation of young children with ASD (Barton, Lawrence, & Deurloo, 2012; Boyd, Odom, Humphreys, & Sam, 2010; Matson, Tureck, Turygin, Beighley, & Rieske, 2012). In fact, as of this writing they are easily the most studied and utilized treatment in the field of ASD. As a result, it has been argued that a comprehensive assessment is a critical element of intensive programs (Gould, Dixon, Najdouski, Smith, & Tarbox, 2011). Researchers, however, have pointed out that many limitations exist in how these treatments are evaluated. Generally, there has been a piecemeal model of assessment versus researchers using a comprehensive standardized model (Eikeseth, 2009).

In a paper by the senior author published in 2007, concerns were raised regarding the problems that exist with respect to outcome measures. The outcome methods used define what can be concluded about the interventions that are employed and what constitutes effective. A number of content areas should be evaluated. These areas include: (1) measures of adaptive behavior and development; (2) using separate measures for group assignment and for evaluating treatment effectiveness; (3) ASD core symptoms; (4) measures of comorbid psychopathology and challenging behaviors; (5) operational target behaviors and the measurement of maintaining variables; (6) the measurement of treatment fidelity; (7) the assessment of consumer/family satisfaction; and (8) the measurement of side effects. A selective sample of papers published prior to 2008, and a second cohort of papers published from 2008 to 2013 was evaluated on each of these parameters. The goal was to determine how many articles address the most criteria and which criteria are measured. Furthermore, the current study aimed to examine if researchers are making progress in these areas, and if so, on what assessment parameters.

3. Results

Articles were selected via a search of Scopus using the terms “Early Intensive Behavioral Interventions” (EIBI), and “Autism Spectrum Disorders”. Additionally, a hand search of relevant papers was conducted. Using the approach a total of 25 EIBI studied over the span of 1987–2013 were sampled that measured outcomes. The papers were separated into a group of 8 papers published in 2007 or before and 17 papers published after 2007. This approach was followed to gauge whether the methods used as a means of assessing EIBI studies have improved since the discussion of methodological shortcomings in this research area (Matson, 2007). An analysis of the 8 major areas for assessment follows:

3.1. Adaptive behavior/developmental course

Prior to 2008, all 8 papers reviewed used had measures fitting this category. Among the 17 studies published after this date, 14 (82%) met this criteria. A major concern with children this young (usually 2–5 years of age) is that standardized I.Q. tests are not a particularly valid measure of adaptive behavior or developmental course in this population. Of the 8 papers prior to 2008, 6 (75%) used some variant of the Weschler Scales or the Stanford-Binet, with or without adaptive behavior measures. For the latter group of studies, 6 (33%) papers provided standardized I.Q. tests, and for two studies, the Leiter International Performance Scale (Leiter) and the Peabody Picture Vocabulary Test (PPVT) were used. This trend is encouraging. First, because fewer researchers are relying on traditional I.Q. tests and are using developmental scales instead. Second, when standardized I.Q. tests are used with young children evincing autism, nonverbal performance measures such as the Leiter or PPVT are preferred. Thus, on this first criteria, improvement was noted even though fewer studies used measures to assess adaptive behavior and developmental course overall.
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