



Comparison of behavior analytic and eclectic early interventions for young children with autism after three years



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ABSTRACT

In a previous study, we compared the effects of just over one year of intensive behavior analytic intervention (IBT) provided to 29 young children diagnosed with autism with two eclectic (i.e., mixed-method) interventions (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005). One eclectic intervention (autism programming; AP) was designed specifically for children with autism and was intensive in that it was delivered for an average of 25–30 h per week ($n=16$). The other eclectic intervention (generic programming; GP) was delivered to 16 children with a variety of diagnoses and needs for an average of 15–17 h per week. This paper reports outcomes for children in all three groups after two additional years of intervention. With few exceptions, the benefits of IBT documented in our first study were sustained throughout Years 2 and 3. At their final assessment, children who received IBT were more than twice as likely to score in the normal range on measures of cognitive, language, and adaptive functioning than were children who received either form of eclectic intervention. Significantly more children in the IBT group than in the other two groups had IQ, language, and adaptive behavior test scores that increased by at least one standard deviation from intake to final assessment. Although the largest improvements for children in the IBT group generally occurred during Year 1, many children in that group whose scores were below the normal range after the first year of intervention attained scores in the normal range of functioning with one or two years of additional intervention. In contrast, children in the two eclectic treatment groups were unlikely to attain scores in the normal range after the first year of intervention, and many of those who had scores in the normal range in the first year fell out of the normal range in subsequent years. There were no consistent differences in outcomes at Years 2 and 3 between the two groups who received eclectic interventions. These results provide further evidence that intensive behavior analytic intervention delivered at an early age is more likely to produce substantial improvements in young children with autism than common eclectic interventions, even when the latter are intensive.

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1. Introduction

The past two decades have seen increased interest in early intervention for children diagnosed with autism spectrum disorder (hereafter, “autism”) among researchers, policymakers, funding sources, and consumers. Following publication of the Lovaas study in 1987, a number of researchers began evaluating the effects of intensive, comprehensive early intervention using applied behavior analysis (ABA) methods. Various ABA models for treating children with autism have been proposed, but many behavior analytic researchers agree that genuine early intensive ABA treatment programs have certain key features in common: (a) individualized, comprehensive intervention that addresses all skill domains; (b) use of multiple behavior analytic procedures (not just discrete-trial procedures or “naturalistic” techniques) to build new repertoires and reduce behaviors that interfere with skill acquisition and effective functioning; (c) direction and oversight by one or more professionals with advanced training in ABA and experience with young children with autism; (d) reliance on typical developmental sequences to guide selection of treatment goals; (e) parents and other individuals trained by behavior analysts to serve as active co-therapists; (f) intervention that is initially one-to-one, transitioning gradually to a group format as warranted; (g) intervention that often begins in homes or specialized treatment centers but is also delivered in other environments, with gradual, systematic transitions to regular schools when children develop the skills required to learn in those settings; (h) planned, structured intervention provided for a minimum of 20–30 h per week with additional hours of informal intervention provided throughout most other waking hours, year round; (i) intensive intervention beginning in the preschool years and continuing for at least 2 years (Eldevik et al., 2010; Green, Brennan, & Fein, 2002).

Substantial research has documented the effectiveness of treatments that incorporate all of the foregoing features. Eight prospective studies used comparison- or control-group designs to evaluate some variation of the Lovaas/UCLA model of early intensive ABA intervention for children with autism (Cohen, Amerine-Dickens, & Smith, 2006; Eikeseth, Smith, Jahr, & Eldevik, 2002; Eikeseth, Smith, Jahr, & Eldevik, 2007; Eldevik, Hastings, Jahr, & Hughes, 2012; Eldevik, Eikeseth, Jahr, & Smith, 2006; Lovaas, 1987; Sallows & Graupner, 2005; Smith, Groen, & Wynn, 2000). In another three studies, the ABA intervention was designed and overseen by professional behavior analysts not affiliated with Lovaas, and the ABA intervention differed somewhat from the Lovaas model (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Remington et al., 2007; Zachor, Ben-Itzhak, Rabinovitch, & Lahat, 2007). Outcomes from those 11 studies varied and some children had larger improvements than others. In the large majority of cases, however, the mean change scores achieved by children receiving intensive ABA treatment exceeded the mean change scores for similar children in control or comparison groups who received less intensive ABA treatment, intensive or non-intensive treatment using a mixture of methods or therapies (“eclectic” treatment), or “treatment as usual” (i.e., standard early intervention or special education services). Additionally, compared to children who received other types of treatment, children who received early intensive ABA treatment were more likely to achieve post-treatment scores on one or more standardized measures that were in the normal range, and were more often placed in regular classrooms (for reviews and analyses, see Eikeseth, 2009; Eldevik et al., 2009, 2010; Green, 2011; National Autism Center, 2009; Reichow & Wolery, 2009; Rogers & Vismara, 2008).

Despite the evidence from multiple studies and meta-analyses favoring intensive ABA treatment for autism over other models of early intervention, a number of questions persist. One is whether other types of early intervention delivered with comparable intensity and individualization can produce outcomes comparable to ABA. Perhaps the most common alternative early intervention approach involves a mixture of methods drawn from ABA, speech-language pathology, occupational therapy (especially sensory integration techniques), developmental psychology, and autism-specific approaches. That model, which has been characterized as “eclectic” intervention, is widely available in the United States and elsewhere.

At least three studies have compared eclectic and ABA interventions directly. Eikeseth et al. (2002) studied children with autism who entered treatment at ages 4–7 years ($M = 5.5$ years), slightly older than children in most of the other studies of early intensive behavioral intervention. One group ($n = 13$) received Lovaas-model ABA treatment for 28 h per week, while a second group ($n = 12$) received eclectic intervention for 29 h per week. There were no significant differences between the groups when treatment began. Both forms of treatment were delivered in public school classrooms. After 1 year, the ABA treatment group had gained an average of 17 points on IQ test scores, 13 points on tests of language comprehension, 27 points on tests of expressive language, and 11 points on an adaptive behavior scale. The eclectic treatment group had average gains of only 4 points on IQ tests and 1 point on language tests, and no change in adaptive behavior. A follow-up study conducted when those children were 8 years old found that after about 3 years of treatment, the ABA treatment group had gained an average of 25 IQ points and 9–20 points on adaptive behavior scales in comparison to baseline. The eclectic intervention group had a mean gain of only 7 points on IQ tests, and declines of 6–12 points on adaptive behavior assessments (Eikeseth et al., 2007).

A study we published previously involved a comparison of intensive ABA intervention with two different eclectic intervention models (Howard et al., 2005). Twenty-nine preschool children with autism received early intensive behavior analytic intervention (IBT), 16 received intensive eclectic intervention designed for children with autism (designated the autism programming, or AP, group), and an additional 16 received typical non-intensive, eclectic early intervention services (designated the generic programming, or GP, group). All children began intervention prior to 48 months of age and received treatment for an average of 14 months. They were placed in treatment groups on the basis of parental preferences and education team decisions, and evaluated pre-treatment and annually thereafter by professionals who were neither involved in nor employed by any of the treatment programs. The three groups were shown to be similar on key variables when

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