2017 Gatlinburg Conference Poster Submission

Title: The Impact of Delay in Early Intensive Behavioral Intervention on Educational Outcomes for Children with Autism

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Introduction: With increases in diagnoses of autism spectrum disorders (ASD) over the past decade, it is imperative that children and families have early access to high quality services (Chasson, Harris, & Neely, 2007). Early Intensive Behavioral Interventions (EIBI) is an applied behavior analysis approach that can be effective for remediating ASD symptoms for some individuals (Matson & Smith, 2008). From a population perspective, timely access to early intervention services is assumed to be important for facilitating long term positive educational outcomes. Stakeholders report, however, long (>= 1 yr) waitlists for services. The range of effects of EIBI service delay on educational outcomes for children with ASD is unknown. Using a statewide database (Minnesota), this study was designed to address two specific research questions: 1) what effect does a delay in EIBI services for children with ASD (aged 3-5) have on later educational outcomes? and 2) are there regional differences in the average delay to start EIBI?

Method: Medical Assistance (MA) records from the Minnesota Department of Human Services (DHS) were used to create a cohort of 3 to 5 year olds who received a diagnosis of ASD between January 1st, 2008 and December 31st, 2010. This cohort was matched with Minnesota Department of Education (MDE) records from the 2013-2014 academic year (94.5% match rate, n= 607). Delay to EIBI services in months was calculated by subtracting the date of ASD diagnosis (ICD-9 CM 299.0) from the first billing date associated with an EIBI service provider. Educational outcomes evaluated included primary educational ASD diagnosis, instructional placement, and Minnesota Comprehensive Assessment -III (MCA-III) scores for reading, math, and science. Relative risk estimates, one-way ANOVA, and logistic regressions were conducted to investigate the relationship between delay in months to start EIBI services and educational outcomes at 4-6 years of follow up.

Results: Overall average delay within the cohort was 8.9 months (SD=10.7 months, range= 0-45 months) from date of diagnosis to the start of EIBI services. Approximately 30% of the cohort had no delay to EIBI services. There was a statistically significant difference between regions as determined by a one-way Welch’s ANOVA for unequal variances (F (6,45.07) = 15.42, p<.001). At follow up, 94% of the cohort was eligible or received special education services. Approximately 70% of the cohort retained a primary educational diagnosis of ASD. Children who had a delay in EIBI of 5 or more months were 1.27 times more likely to be in a separate special education classroom (95% CI [1.04,1.57]); and 2.59 times more likely to be in a separate (more restrictive) school (95% CI [1.23,5.44]) compared to children whose delay to EIBI was 4 months or less. Logistic regressions revealed that greater delay to EIBI was associated with a reduction in the likelihood of being placed in general education. A shorter delay was also associated with an increased likelihood of MCA-III participation.

Discussion: This study was developed to investigate if a delay in EIBI services affected later educational outcomes for MA-enrolled children with a diagnosis of ASD. Overall, approximately 70% of children in this study experienced a delay to EIBI services, with an average delay of nine months. Delays to EIBI varied throughout regions of the state, with the southwest region of the state yielding the smallest delay to services and the northeast the most. In addition, study findings reveal that delays of five months or more are significantly associated with more restrictive instructional placement settings for children in the public education system. In sum, although some children received EIBI services before a diagnosis of ASD was given, there are waitlists and delays to services around the state of Minnesota which may be detrimental to children’s educational outcomes. Future research should investigate if a telehealth delivery model (i.e., remote video conferencing) could supplement the gap in services early on.
References/Citations: