

Electronic Data Collection for Intensive Behavioral Intervention for Young Children with Autism: An Analysis and Comparison of mTrial to Traditional Pen and Paper Methods of Data Collection

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There is considerable empirical evidence that demonstrates that early intensive behavior analytic intervention (also referred to as ABA) produces substantial improvements in young children with autism across a number of skill domains (cognitive functioning, language skills, academic performance, etc.). Several studies of comprehensive treatment programs have been published, and a central feature of each performance site is the reliance on continuous measurement of child performance during all treatment hours (20-40 hours per week) to ensure an objective and quantitative analysis of behavior. Data collection ensures that appropriate treatment decisions are being recommended for each individual child and that an evidence-based practice model is being followed at all times.

Although data collection is central to any effective ABA treatment program there are a number of barriers to this process. Specifically, paper and pencil data collection is the standard practice in service delivery agencies, however this format can be time consuming and costly. An alternative is to collect data via an electronic format, however there have been no empirical investigations regarding the relative utility of this option.

We are currently conducting a research study, which has been approved for grant funding by the Organization for Autism research, across 5 children at the Center for Autism and Related Disorders, Inc. Data collection via mTrial is being compared to that via "pen and paper" data collection. Across the 5 participants, the two data collection systems are being compared when used to collect data in a variety of teaching programs, including those that target academic, pre-academic, language, social behavior, self-help, and motor skills. We are examining multiple variables, including: 1) data collection time, 2) data analysis time, 3) report writing time, 4) cost variables (paper, data storage, etc.), 5) employee satisfaction (at the therapist and supervisor level), 6) parent satisfaction with access to data (electronic data can be summarized and emailed to parents with very little effort) and 7) accuracy.

Data collection is currently underway and the initial results look promising. mTrial appears to be a very flexible, user-friendly system and has thus far required little time and effort for staff training. Perhaps the greatest promise of the system is the possibility of electronic storage and analysis of student data and the increased security and flexibility that such storage will allow. If this study demonstrates that data collection via mTrial is at least as accurate and rapid as that via pen and paper, then it is likely that the adoption of it on a larger scale could have significant implications for cost-effectiveness and efficiency of clinical service provision for young children with autism.