Title: Predictors of Reliable Change in a Parent Mediated Intervention for Children with Autism Spectrum Disorder

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Introduction: The accurate and sensitive measurement of global clinical outcomes for young children with autism spectrum disorder (ASD) continues to challenge intervention researchers (McConachie et al., 2015). One attempt to remedy this was the adaption of the ADOS coding scheme (Lord et al., 2000) to improve its sensitivity to change. The resulting measure, the Brief Observation of Social Communication Change (BOSCC; Grzadzinski et al., 2016), has been applied to a number of samples (e.g. Kitzerow et al., 2016). The objective of this analyses is to further understand the relationship between the BOSCC and other proximal and distal measures. This involves replicating the analyses of Nordahl-Hansen and colleagues (2016) in a larger sample as well as exploring the characteristics of children who show reliable change across multiple proximal and distal outcomes.

Method: This secondary analyses includes 86 toddlers with ASD (mean age= 31.5; 81% male) who took part in a 10-week parent mediated JASPER intervention (Kasari et al., 2015). The reliable change index (RCI; Jacobson & Truax, 1991) was applied to the change scores from entry to exit across a number of outcomes including children’s joint engagement, initiations of joint attention, functional and symbolic play types and BOSCC total scores. The RCI measures whether individual change scores reach a clinically significant cut point that is established based on the reliability of the measure used and the outcome scores variance. T-tests were than used to determine whether entry level child and parent characteristics were different for those who would go on to be consistent responders and those who would not. Consistent response was defined as showing reliable change on at least three of five outcomes.

Results: As was expected the treatment group had significantly more children who showed reliable change on joint engagement $X^2(2, N=86) = 29.83, p<.01$. The proportion of children with reliable change did not differ for BOSCC scores $X^2(2, N=86) = .23, p=.63$. The proportion of consistent responders was significantly greater in the JASPER treatment group $X^2(2, N=86) = 6.35, p=.01$.

Entry level characteristics such as cognitive ability (Mullen IQ), ADOS severity, language (Reynell) and maternal responsivity (Maternal Behavior Responsiveness Scale) were explored as predictors of treatment response. At entry children who would go on to be consistent responders had significantly higher scores on expressive ($t(85)= 1.96, p<.05$) and receptive ($t(85)= 2.18, p <.05$) language and cognitive ability ($t(85)= 2.71, p <.01$) but not autism severity ($t(85)= 1.13, p=.19$). Parental responsiveness showed a trend towards significance ($t(85)= 1.95, p=.06$).

Discussion: Replicating the results of previous studies the BOSCC, a distal treatment measure, was found to be less sensitive to detecting treatment differences than more proximal measures such as joint engagement, although significant change over time for both groups was seen. Further, the identification of a number of predictors of consistent response such as entry language and cognitive ability will allow future interventions to tailor (e.g. intensify or diversify) treatment options to improve outcomes of slow responders from the onset of intervention.

References/Citations: