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Cutoffs, norms, and patterns of comorbid difficulties in children with an ASD on the Baby and Infant Screen for Children with aUtIsm Traits (BISCUIT-Part 2)

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ABSTRACT

Diagnosing autism and PDD-NOS at very early ages has become a major priority in the field of mental health. More recently, researchers have also come to realize the importance of identifying co-occurring conditions of psychopathology in this population. In the present study, 309 children between 17 and 37 months of age who had been identified as having either autism or PDD-NOS were screened for comorbid psychopathology. Using the psychopathology scale of the Baby and Infant Screen for Children with aUtIsm Traits (BISCUIT-Part 2), norms and cutoff scores for various forms of psychopathology (e.g., conduct problems, inattention, impulsivity, avoidance, anxiety, eating and sleep problems) were established. Additionally, frequency of items across factors was compared for autism, PDD-NOS and on atypically developing group of children without an autism spectrum disorder (ASD) ($n = 460$). All five disorders (tantrum, conduct behavior, inattentive/impulsive, avoidant behavior, anxiety/repetitive and eating problems/sleep) were more common in the autism group. Differences in the two groups were particularly striking for the anxiety/repetitive behavior and inattention/impulsivity factors. Implications of these findings are discussed.

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Autism spectrum disorders (ASDs) are a group of five conditions with shared behavioral characteristics (Chez, Memon, & Hung, 2004; Matson, 2007a; Matson & Wilkins, 2007; Matson, Nebel-Schwalm, & Matson, 2007; Murray, Lesser, & Lawson, 2005). These core symptoms include communication, stereotypies and rituals, along with social deficits (Chakrabarti & Fombonne, 2001). Believed to be neurodevelopmental in origin, they are also considered to have a life long course (Dawson, Matson, & Cherry, 1998; Matson, 2007a; Rutter, 2005).

A particularly cogent topic for study has been efforts to identify children with ASD at early ages. The development of testing methods that can effectively identify children with ASD and co-occurring difficulties between 16 months and 3 years is essential and timely. This approach is important since early intervention programs to remediate symptoms of autism and PDD-NOS have proven to be very successful. Additionally, parents in many cases appear to be able to recognize that something is amiss between 18 and 24 months of age (Ben Itzchak, Lahat, Burgin, & Zachor, 2008). These data would seem to suggest that such diagnosis is possible. Having said this, little has been done to develop reliable and valid diagnostic methods for those infants and toddlers with ASD. This situation has led some researchers to speculate that large-scale prospective studies are needed in this area with respect to their diagnosis and predictive power (Watson, Baranek, & DiLavore, 2003). Part of this diagnostic process is the identification of comorbid psychopathology which accompanies ASD (Matson & Bamburg, 1998; Matson, Mayville, et al., 1998; Matson, Smiroldo, et al., 1998; Paclawskyj, Matson, Bamburg, & Baglio, 1997).

The Baby and Infant Screen for Children with aUtIsm Traits (BISCUIT) was designed specifically to address this issue. This paper is the first large scale diagnostic study which provides normative data and cutoff scores for very young children with autism or PDD-NOS on comorbid psychopathology. These data are presented in Study 1 and Study 2, respectively.

1. Methods

1.1. Participants

The sample consisted of 309 children between the ages of 17 and 37 months ($M = 27.30$; $SD = 4.81$). Participants included both males ($n = 225$) and females ($n = 84$). The majority of this sample was Caucasian (52.3%); however, there were also children of African American (42.2%), Latino (1.70%), and other (3.8%) ethnic origins. The participants included in this study were currently being observed in a broad investigative study of early childhood development and the emergence of autistic traits. This broader study was related to the formulation and utility of the BISCUIT battery of assessments to detect symptoms characteristic of ASD at an early age. Diagnoses for the participants were made by a licensed doctoral level psychologist (the first author) who was blind to BISCUIT scores. This person has over 30 years of experience in the field of developmental disabilities. Using clinical judgment, diagnoses were made based on the DSM-IV-TR criteria for Autistic Disorder and for PDD-NOS (American Psychiatric Association [APA], 2000), M-CHAT scores, and developmental profile scores from the Battelle Developmental Inventory-2nd Edition (BDI-2; Newborg, 2005). Similar methodology used to arrive at a pervasive developmental disorder diagnosis has been described in the literature (e.g., Fombonne et al., 2004). As such, 169 of the participants were identified to have symptoms consistent with a diagnosis of autism and 140 had PDD-NOS symptomatology.

For a subset of the toddlers and infants diagnosed with ASD, interrater reliability was calculated ($n = 97$). To determine interrater reliability, a second Ph.D. level clinical psychologist also designated diagnoses. This individual has extensive experience treating and assessing children with developmental disabilities. This second clinical psychologist assigned diagnosis based on the same information as the first clinical psychologist (i.e., DSM-IV-TR criteria, M-CHAT scores, BDI-II scores) and was blind to the diagnoses made by the first author as well as BISCUIT scores. Results of this calculation indicated that interrater reliability was excellent with a kappa value of 0.98, $p < 0.001$. The percent agreement between the two raters was estimated to be 98.97%.

At the time of this study, all of the participants were receiving services through the Louisiana EarlySteps program. EarlySteps is Louisiana's Early Intervention System under the Individuals with Disabilities Education Act, Part C, which provides services to infants and toddlers and their families