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## Research in Developmental Disabilities



# Cutoffs, norms, and patterns of comorbid difficulties in children with developmental disabilities on the Baby and Infant Screen for Children with aUtism Traits (BISCUIT-Part 2)

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### ABSTRACT

Behavioral symptoms of comorbid psychopathology of 651 children 17–37 months of age who were at risk for developmental disabilities were studied using the BISCUIT-Part 2. In Study 1, norms and cutoff scores were established for this new scale on this sample. In Study 2, frequency of response on the 52 items measured was reported. Problems in eating and sleep were the most common with just over 15% of the sample experiencing these difficulties of either a moderate or severe nature. For severe problems, the most commonly reported difficulties were inattention/impulsivity, and tantrums/conduct behavior problems. Implications of this scale and these data for early identification of behavior disorders in atypically developing children are discussed.

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Developmental disabilities are a wide range of intellectual and physical delays and handicaps which interfere with typical development (Hsieh, 2008; Matson, Cooper, Malone, & Moskow, 2008; Matson, Kiely, & Bamburg, 1997; Mitchell & Hauser-Cram, 2008; Paclawskyj, Matson, Bamburg, & Baglio, 1997). These problems are pervasive and effect the development of independent living skills, socialization and psychosocial adjustment, as well as school performance. One of the primary reasons factors associated with these delays, which further compound and complicate normal development, are co-occurring problems such as social deficits, challenging behaviors, and psychopathology (Agaliotis & Kalyva, 2008; Myrbakk & von Tetzchner, 2008; Ringdahl, Call, Mews, Boelter, &

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Christensen, 2008). These problems co-occur with each other at very high rates. Without proper diagnosis and treatment these difficulties tend to persist and intensify and they can have a lifetime course (Lifshitz, Merrick, & Morad, 2008; Matson, Smiroldo, & Bamburg, 1998).

A major and important advance in the field of developmental disabilities has been early diagnosis and intervention (Eikeseth, 2009; Matson & Smith, 2008; Matson, Wilkins, & Gonzales, 2008). Efforts in this area have been based on the premises noted above, and on the opinion that the earlier these difficulties can be addressed, the better the long-term prognosis. Researchers are aware that the full spectrum of problem behaviors must be recognized and addressed (Matson, 2007b). However, to date most of the focus has been on identifying symptoms of a primary disorder without focusing on comorbid disorders. These co-occurring problems can be very important for prognosis, and clearly warrant targeting for intervention. However, the development of tools to assist in these assessments has received little attention, particularly with very young children. The purpose of this paper was to describe psychometric properties of the BISCUIT-Part 2, which was designed specifically for the purpose of screening for co-occurring disorders. Additionally, we addressed the rate at which these comorbid conditions were present in this very young at risk population.

## 1. Methods

### 1.1. Participants

The sample consisted of 651 children between the ages of 17 and 37 months ( $M = 26.04$ ,  $SD = 5.06$ ). All of the infants and toddlers participating in this study 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 from birth to 36 months. Children qualify if they had a medical condition likely to result in a developmental delay, or had an intensified developmental delay. In addition, all participants were currently being observed in a broad investigative study of early childhood development. This broader study was related to the formulation and utility of the BISCUIT battery of assessments. All participants in this sample were determined to be atypically developing by their family pediatrician on development milestones, identified genetic disorders (e.g., Down's syndrome) or physical disabilities. Co-occurring autism spectrum disorders were a rule out for this study given the high and distinct behavior profiles of comorbid psychopathology evinced by this disorder.

Some of the medical conditions represented in the sample included asthma ( $n = 32$ ), global developmental delay ( $n = 24$ ), epilepsy ( $n = 17$ ), Down's syndrome ( $n = 15$ ), cerebral palsy ( $n = 11$ ), spina bifida ( $n = 3$ ), traumatic brain injury ( $n = 3$ ), diabetes ( $n = 3$ ), hydrocephaly ( $n = 2$ ), hypotonia ( $n = 2$ ), bronchopulmonary dysplasia ( $n = 2$ ), and tubular sclerosis ( $n = 2$ ). There were both males ( $n = 447$ ) and females ( $n = 204$ ) included in this sample. Ethnic representation of the participants was Caucasian (56.2%), African American (37.9%), Hispanic (2.6%), and other ethnic origins (3.3%).

### 1.2. Measure

*The Baby and Infant Screen for Children with aUtism Traits – Part 2 (BISCUIT-Part 2).* The BISCUIT-Part 2 is an assessment measures that is part of a comprehensive assessment battery, the Baby and Infant Scale for Children with aUtism Traits (BISCUIT). The BISCUIT-Part 1 was developed to measure symptoms of ASD and associated problems in toddlers who are between 17 and 37 months of age. Part 2 of the scale measures symptoms of comorbid psychopathology in those with developmental disabilities. Part 3 of the BISCUIT assessed for problem behaviors in children and toddlers who are developmentally delayed. For the purposes of this study, only Part 2 of the BISCUIT was investigated.

The BISCUIT-Part 2 is a 57 item measure used to examine comorbidity in infants and toddlers with Autism Spectrum Disorders (ASD). Parents or guardians rate each item on a 3-point Likert-type scale with severity ratings ranging from "0 = not a problem or impairment; not at all," "1 = mild problem or impairment," and "2 = severe problem or impairment." A factor analyses of the BISCUIT-Part 2 yielded a 5 factor solution: (1) Tantrum/Conduct Problems, (2) Inattention/Impulsivity, (3) Avoidance Behavior, (4) Anxiety/Repetitive Behavior, and (5) Eating Problems/Sleeping (Matson, Boisjoli, Hess &

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