



# Convergent and discriminant validity of the Autism Spectrum Disorder-Problem Behavior for Children (ASD-PBC) against the Behavioral Assessment System for Children, Second Edition (BASC-2)

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## ABSTRACT

Many children with Autism Spectrum Disorder (ASD) demonstrate challenging behaviors. Since challenging behaviors are obstacles for social development and learning, it is important to determine if and what challenging behaviors are exhibited. Although there are some measures that assess for challenging behaviors, the majority were not specifically designed to assess for challenging behaviors among children with ASD, or do not solely assess for challenging behaviors. The Autism Spectrum Disorder-Problem Behavior for Children (ASD-PBC) is an 18 item informant based questionnaire designed to measure challenging behaviors in children and adolescents with ASD. Convergent and discriminant validity against the Behavioral Assessment System for Children, Second Edition (BASC-2), demonstrated the validity of the ASD-PBC for use among children and adolescents with ASD.

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Challenging behaviors have been included in the description of children diagnosed with Autism Spectrum Disorder (ASD) since the first descriptions by Kanner in 1943. Albeit challenging behaviors, minus stereotypes, are not considered a core feature of ASD, and not all children with ASD evince challenging behaviors, numerous studies report that many people with ASD engage in a variety of challenging behaviors (American Psychiatric Association, 2000; Matson & Dempsey, 2008; Matson & Nebel-Schwalm, 2007; Matson, Wilkins, & Macken, 2009; Matson, 2007; Murphy et al., 2005; Schreibman, 2005). For example, Matson and colleagues (2009) found that 94.3% of 182 children with ASD reported some form of challenging behavior. Researchers have found that aggression towards others, property destruction, tantrums, verbal disruption, and stereotypic behaviors are the most common challenging behaviors displayed and identified for intervention among children with ASD (Horner, Carr, Stram, Todd, & Reed, 2002; Machalicek, O'Reilly, Beretvas, Sigafoos, & Luancioni, 2007; Matson & Nebel-Schwalm, 2007). Another common challenging behavior that children with ASD engage in is SIB (Horner et al., 2002; Matson & Nebel-Schwalm, 2007; Schreibman, 2005).

Engaging in challenging behaviors interferes with learning (Horner et al., 2002; Matson & Rivet, 2008a; Sturmey, Seiverling, & Ward-Horner, 2008), contributes to physical restraint and medication use, and predicts residential care (Deb, Thomas, & Bright, 2001; Harris, 1993; McIntyre, Blacher, & Baker, 2002). As such, it is critical to assess for and treat challenging behaviors in children with ASD. Although challenging behaviors are exhibited by many children with ASD and can have great impact on their learning, there is a lack of assessments specifically designed to assess for challenging behaviors in children with ASD (Matson, González, & Rivet, 2008). As challenging behaviors are not considered a core

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symptom of ASD, most diagnostic tools do not assess for them. However, there are measures designed to assess challenging behaviors in people with developmental disabilities, including ASD and ID, which are discussed below.

The Aberrant Behavior Checklist (ABC; Aman, Singh, Stewart, & Field, 1985a; Aman, Singh, Stewart, & Field, 1985b) was developed for treatment evaluation among people with ID, and has been used for the assessment of challenging behaviors in individuals with ID. The ABC has not been used extensively in studies involving the ASD population. In comparison, the Behavior Problem Inventory-01 (BPI-01; Rojahn, Matson, Lott, Esbensen, & Smalls, 2001) has been found to be a reliable and valid measure of challenging behaviors for adolescents and adults with comorbid ID and developmental disabilities (Rojahn et al., 2001). However, there is no known published research to date assessing the psychometrics of this measure for children or adults with ASD alone.

Similar to the BPI-01, researchers have found the Developmental Behavior Checklist (DBC; Einfeld & Tonge, 1995) to be a reliable and valid measure of challenging behaviors for children and adolescents with ID (Einfeld & Tonge, 1995). However, Hastings, Brown, Mount, and Cormack (2001) call for further research regarding this measure's psychometric validity. Although the DBC may seem appropriate for use among children with ASD, psychometric properties with this population have not been well-studied (Lecavalier, Aman, Hammer, Stoica, & Mathews, 2004). Furthermore, this measure also assesses emotional problems, and as such is not specific to challenging behaviors.

The Nisonger Child Behavior Rating Form (CBRF; Aman, Tassé, Rojahn, & Hammer, 1996) is another reliable and valid measure of challenging behaviors among children and adolescents with ID (Aman et al., 1996). Lecavalier and colleagues (2004) further analyzed the reliability and validity of the Nisonger CBRF among children with ASD using confirmatory and exploratory factor analysis. Lecavalier and colleagues (2004) found no evidence for the irritability or overly sensitive subscale, which in-part comprise the challenging behavior section. Additionally, when analyzing children diagnosed with ASD, lower internal consistency and factor loadings were found. Researchers have called for further studies examining its validity and reliability before using this measure in the ASD population (Lecavalier et al., 2004).

Another measure used to assess challenging behaviors is the Overt Aggression Scale (OAS; Hellings et al., 2005). This measure was originally designed to assess pharmacological treatment responses among people evincing challenging behaviors, specifically verbal and physical aggression, property destruction, and SIB, who live in hospital settings (Silver & Yudofsky, 1991; Yudofsky, Silver, Jackson, Endicott, & Williams, 1986). Even though the OAS was found to correlate highly with the Aberrant Behavior Checklist–Community irritability subscale in a study examining treatment response of valproate in 8 children diagnosed with Autism, the authors note that this scale requires further psychometric research before it is used extensively in the ASD population (Hellings et al., 2005).

There are also some broad band measures that have included children with ASD in their general and clinical norm samples. The Behavioral Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) is one such example. The BASC-2 is a valid and reliable measure of emotional concerns, challenging behaviors and adaptability of children and young adults in the general population via self-report, teacher rating and parent rating scales (Reynolds & Kamphaus, 2004). Norm groups, general and clinical, included children and adolescents with ASD (Reynolds & Kamphaus, 2004). However, the BASC-2 does not solely examine challenging behaviors; it also assesses for anxiety, depression, and somatization.

The previous assessments, although sometimes used among people with ASD, were designed to assess challenging behaviors in non-ASD populations, primarily adults or children with ID, or were broad band measures of adaptability, challenging behaviors and emotional concerns. The Autism Spectrum Disorder–Behavior Problem for adults (ASD-BPA; Matson & Rivet, 2008b), PDD Behavior Inventory (PDDBI; Cohen, 2003; Cohen, Schmidt-Lackner, Romanczyk, & Sudhalter, 2003), and Autism Spectrum Disorder–Problem Behavior for Children (ASD-PBC; Matson, González, Wilkins, & Rivet, 2008b) are measures specifically designed to assess challenging behaviors among people with ASD. Although the ASD-BPA was designed to assess challenging behaviors among people with ASD, it was specifically designed to study challenging behaviors among adults, not children. Despite the high cost and debilitating nature challenging behaviors have on children with ASD, only two measures known to this author have been developed specifically to assess for challenging behaviors among children with ASD. These measures are the PDDBI and the child version of the ASD-BPA, the ASD-PBC.

The PDDBI is an informant based measure designed to assess treatment responses among children with ASD (Cohen, 2003; Cohen et al., 2003). There are two forms, parent and teacher, which consist of 176 and 144 items, respectively (Cohen, 2003). Each form has four adaptive behavior subscales and six maladaptive behavior subscales. Researchers support the internal reliability and construct validity of this measure (Cohen et al., 2003). However, this measure consists of more than a hundred items and assesses more than just challenging behaviors in children with ASD. As such, it is not an efficient means of assessing challenging behaviors.

The ASD-PBC was designed specifically to efficiently assess for challenging behaviors in children with Autistic Disorder, Pervasive Developmental Disorder Not Otherwise Specified, and Asperger's Disorder. The ASD-PBC's internal consistency,  $\alpha$ , is .90, test–retest reliability, kappa, is .64 and mean inter-rater reliability is .49 (Matson, González, & Rivet, 2008; Matson, González, Wilkins, et al., 2008). Although there has been research examining its reliability, previous to this study there has been no research examining its validity. Since good psychometrics are required when establishing measures, it is important to analyze the validity of the ASD-PBC. A measure of validity is essential because it informs researchers and clinicians about whether the assessment is measuring the construct it proclaims to measure. In an effort to present clinicians with one of the first reliable and valid measures designed to assess challenging behaviors in children with ASD, this study examined the validity of the ASD-PBC. It was hypothesized that the ASD-PBC would demonstrate convergent and discriminant validity against the BASC-2.

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