



A multinational study examining the cross cultural differences in reported symptoms of autism spectrum disorders: Israel, South Korea, the United Kingdom, and the United States of America

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ABSTRACT

Purportedly, there is a worldwide acceptance of diagnostic criteria for Autism Spectrum Disorders (ASD); however, cultural differences in regards to what is considered normal development may affect the diagnosis despite the biological basis for the condition. The aim of the current study was to examine the differences in reports of symptoms of ASD across cultures. The *Autism Spectrum Disorders-Diagnostic for Children (ASD-DC)* was utilized to examine symptoms of ASD between children from Israel, South Korea, the United Kingdom, and the United States. Symptom expression differences were found on nonverbal communication/socialization, verbal communication, and insistence of sameness and restricted interests. However, no significant differences emerged between participants on the domain of social relationships. The implications of these results are discussed.

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1. Introduction

Children diagnosed with Autism Spectrum Disorders (ASD) have deficits in three core areas: socialization, communication, and restricted interests and repetitive behaviors (*Diagnostic and Statistical Manual, Fourth Edition, Text Revision [DSM-IV-TR]*, American Psychiatric Association [APA], 2000). Of particular interest is how these symptoms manifest themselves differently in children across cultures. Some researchers have indicated that the abovementioned criteria hold true and are widely accepted across cultures. However, cultural influences are likely to affect the perception of symptoms, viewpoints about prognosis, and selection of treatment (Mandell & Novak, 2005).

A lack of research exists on ASD across cultures. However, in over 80 countries worldwide, there are organizations that serve children with ASD and their families (as cited in Daley, 2002). Furthermore, Cohen and Volkmar (1997) note that a worldwide acceptance of the diagnostic criteria for ASD exists. Some researchers have suggested that there is little variation in the behavioral manifestation of ASD and that symptoms are consistent across cultures, ethnicity, and social class

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(Campbell, 1996; Cuccaro et al., 1996; Morgan, 1996). However, Daley (2002) suggests that although ASDs occur across all cultures, there are differences in the presentation of autistic symptomatology. More specifically, core ASD symptom expression appears to be vulnerable to the culture in which one is acculturated. For example, Lotter (1978) compared symptoms of autism between those living in Britain versus those living in Africa (i.e., five countries in Africa). Individuals living in Africa and Britain exhibited different patterns of symptoms associated with repetitive, restricted, and stereotyped behaviors. For example, those living in Africa were more likely to engage in marked movement peculiarities and carrying, banging, and twisting objects, indicative of more repetitive play with objects. However, those from Britain were more likely to engage in flapping, self-aggression, and elaborate ritual play.

Aside from differences in symptom expression, differences in the rates of ASD diagnoses across different ethnicities have also been reported. The United States Department of Education (2001, 2002) found that children identified as Black or Asian/Pacific Islander were two times as likely to be classified as having autism under the Individuals with Disabilities Education Act (IDEA) of 1997, compared to those children identified as being American Indian/Alaskan or Hispanic (as cited in Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004). Dyches et al. (2004) outlined potential reasons for differences in prevalence rates across cultures. These researchers suggested that some cultures may be more reluctant to have their child assessed for any type of disability. For example, in a recent study by Sun and Allison (2010), they concluded that ASD may be more common in Asia than previously thought. Furthermore, different cultures may discourage a diagnosis of Intellectual Disability (ID), but instead encourage a diagnosis of ASD (Dyches et al., 2004) or simply define disabilities differently (Rogers-Adkinson, Ochoa, & Delgado, 2003).

Another explanation for differences in the prevalence and identification of ASD across cultures pertains to the awareness of criteria associated with a diagnosis of ASD. More specifically, it appears that differences may be more likely to arise cross-culturally due to various factors such as “when a symptom is perceived, by whom, and what behavior is noticed first, as well as whether it is perceived as problematic” (Daley, 2002, p. 538). Furthermore, Daley asserts that cultural attitudes regarding typical behaviors and normal development for that culture may have an impact on diagnosis of an ASD. These cultural differences in regards to expectancies of development, if not considered during the diagnostic assessment, may make a child more or less susceptible to a diagnosis of an ASD.

Given the lack of research on symptom expression differences across cultures (i.e., countries), the aim of the present study was to utilize the *Autism Spectrum Disorders-Diagnostic for Children (ASD-DC)* in an exploratory examination of ASD core symptomatology in children from four different countries: Israel, South Korea (SK), the United Kingdom (UK), and the United States (US). The *ASD-DC* is a psychometrically validated (see Measures) assessment tool used for the diagnosis of ASD in children. As such, this measure is robust enough to detect differences between the symptom endorsements between children from the aforementioned countries.

2. Methods

2.1. Participants

One hundred forty-five children were studied. Thirty-eight were from Israel, 27 were from the UK, 40 were from the US, and 40 were from SK. The sample from Israel consisted of children who were referred to an autism center. The autism center is a national center that provides diagnosis and treatment services and is involved in research in the field of ASD. The sample from SK consisted of children and adolescents who were recruited from numerous sites including: institutions, middle schools, hospitals, and welfare facilities. The UK sample was recruited from a total of seven schools. These schools specialized in working with children diagnosed with an ASD, intellectual disability (ID), or the combination of both ASD and ID. The US sample was recruited from a variety of sources throughout 16 states in the US. These sources included outpatient clinics, schools, and parent advocacy and support groups.

To make diagnoses consistent across sites for the purpose of this study, diagnoses were made using a 19-item checklist composed of symptoms indicative of an ASD diagnosis based on criteria from the *DSM-IV-TR* (APA, 2000) and the *International Classification of Diseases, Tenth Edition (ICD-10; World Health Organization [WHO], 1992)*. The *DSM-IV-TR/ICD-10 checklist* contains 19 items, which cover the three core symptom areas of ASD: impairment in social interaction, impairment in communication, and the presence of restricted and/or repetitive behaviors. All items on the checklist were completed by informants with respect to the child's behavior. Informants respond to each item as “yes” if the symptom was applicable to their child or “no” if it was not. For the purposes of this investigation, only participants meeting research criteria for ASD were included. Participants were classified as having an ASD if at least two impairments in social interaction and one in either communication or repetitive, stereotyped, or restricted patterns were endorsed on the *DSM-IV-TR/ICD-10 checklist* (Matson, Gonzalez, Wilkins, & Rivet, 2008). The psychometric properties of the *DSM-IV/ICD-10 checklist* were examined. Internal consistency, interrater reliability, and test-retest reliability were all excellent, ranging from $r = .89$ to $r = .96$ (Matson et al., 2008).

Inclusion criteria for the current study were those who met the ASD cutoff on the *DSM-IV/ICD-10 checklist* and participants who were 2–16 years old. Outliers (i.e., as described in the analyses section below) were removed, leaving a total of 315 participants for statistical analyses from a total of 766 participants initially recruited for this study. Of the participants, 38 were from Israel, 27 were from the UK, 197 from the US, and 53 from SK. However, to control for the assumptions of the statistical analyses (refer to the analyses section below), no one group could be more than 1.5 times larger than another (i.e.,

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