Multicultural and Minority Issues

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Autism spectrum disorder (ASD) is one of the most prevalent neurodevelopmental disorders (Newschaffer et al. 2007). More children are diagnosed with ASD than with pediatric AIDS, juvenile diabetes, and childhood cancer combined (Center for Disease Control and Prevention (CDC) 2012). The core features of ASD include social skill impairment, communication deficits, and repetitive and restrictive behaviors (Fodstad et al. (2009); Matson and Boisjoli (2007); Matson et al. (2008); Matson and Wilkins (2008)). Although ASD has long been considered a "universal" disorder, affecting people of all ethnic, racial, and socioeconomic backgrounds, most research conducted in the past 60 years has considered primarily Caucasian samples (Dyches et al. (2004); Sun and Allison (2010)). This trend in sampling means that prior research findings are not necessarily generalizable to populations that have developmental disabilities and are from other cultural backgrounds.

Culture impacts various facets of psychopathology. Cross-cultural differences influence how people with mental disorders are perceived and treated (Snowden 2003). Ethnic-cultural factors influence the assessed, the assessor, and the relationship between the two (Tseng 1997), introducing variables previously unnecessary to consider before research became cross culture. As of now, the impact of culture on various aspects of ASD in particular has not been widely examined. Thus the purpose of this chapter is to review cross-cultural studies in order to better understand the influence of culture on the diagnosis, assessment, and treatment of individuals with ASD.

Cross-Cultural Differences in Prevalence Factors

There are numerous factors, specific to each culture, that affect prevalence of a disorder; such elements include but are not limited to biology, acceptance of the disorder within the community, and availability of support and services (Tseng 1997). Regarding ASD in particular, each of these aspects could potentially influence documented rates of occurrence. Disparities in genetic attributes, perception of developmental disorders and understanding of symptoms, and access to appropriate assessment services across cultures

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may influence apparent rates of ASD diagnoses. Changes in any of these factors among a culture could potentially result in subsequent decreases or increases of reported incidence of ASD.

Reported prevalence rates of ASD have dramatically increased in the past decade (Baron-Cohen et al. 2009; Chakrabarati and Fombonne 2001; Newschaffer et al. 2005). Research findings regarding the amount of increase remain discrepant; some researchers have reported that the rate of ASD has increased from 20 per 10,000 in the early 1990s (Wing 1993) to 60–70 per 10,000 in the early 2000s (Bertrand et al. 2001; Chakrabararti and Fombonne 2001). The most recent federal study reported that 1 in 88 children were diagnosed with ASD in the USA for the 2008 surveillance period (US; CDC 2012). Furthermore, the pattern of increased prevalence of ASD has been reported in most Western countries, including the UK (UK; Baird et al. 2000; Bertrand et al. 2001; Chakrabarti and Fombonne 2001; Webb et al. 2003), Sweden (Arvidsson et al. 1997; Gillberg et al. 2006), and Australia (Williams et al. 2008).

Although epidemiological studies of ASD in Asia are less common than in other regions, several research teams have reported a similar increase in ASD prevalence in Asian populations (Chien et al. 2011; Kim et al. 2011; Lin et al. 2011; Sun and Allison 2010). In many Asian countries, recent estimated ASD prevalence rates indicate 10–30 diagnoses of ASD per 10,000 people (Honda et al. 1996; Li et al. 2011; Wong and Hui 2008). However, discrepant prevalence rates have been reported as comparable to those in most Western countries (Kim et al. 2011). Furthermore, there is some evidence of an increase in prevalence of ASD in Asia over the past 20 years: Chien and colleagues (2011) reported that the ASD prevalence rate in Taiwan increased from 1.79 to 28.72 per 10,000 from 1996 to 2005, while Lin et al. (2011) found that ASD prevalence increased from 5 to 17.3 per 10,000 from 2000 to 2007. A recent review of ASD prevalence in Asian countries including China, Japan, Israel, Iran, Taiwan, and Indonesia indicated that the rate of ASD has increased from 1.9 per 10,000 in the 1980s to 14.8 per 10,000 since the 1980s (Sun and Allison 2010). Also, in the first population-based autism prevalence study in South Korea, researchers estimated the prevalence of ASD to be 1.89 % in the general population sample (Kim et al. 2011). Despite methodological differences across studies, evidence exists that supports an increase in ASD prevalence in Asia. In addition, ASD is reported to be more common than previously thought, potentially approaching prevalence found in Western countries.

Differences in the incidence of ASD across cultures should be noted. As aforementioned, the most recent prevalence study in the USA estimated that 1 in 88 children has ASD (CDC 2012). However, several research teams in the USA have concluded that this prevalence rate differs across cultural backgrounds. For example, ASD is reportedly less prevalent in Hispanic populations than Caucasian populations (CDC 2009). Additionally, in their review of evaluation records, Mandell and colleagues (2009) discovered in their adjusted analysis that children of African American, Hispanic, and other non-Caucasian ethnicities were less likely to have documentation of an ASD diagnosis than were Caucasian children. Other researchers reported that students in the US schools who were African American or Asian/Pacific Islanders were classified as having autism twice as often as their peers of American Indian/Alaskan or Hispanic background (Dyches et al. 2004). Furthermore, in his literature review, Dealberto (2011) concluded that prevalence of ASD was associated with maternal immigration status and ethnic origin.

Interestingly, Thomas and colleagues (2012) examined the relationship among rates of ASD diagnosis, cultural background, and socioeconomic status (SES) using data collected in NJ, USA. They noted there was no longer an association between rates of ASD diagnosis and cultural background after adjusting for median income, suggesting SES was the source of the discrepancy across cultures. Additionally, higher SES was associated with younger age at diagnosis (Thomas et al. 2012). These authors suggest several factors that could contribute to their findings: medical professionals responsible for the care of children in lower SES may have less training or time for diagnostic assessment, and parents with lower SES may not as readily identify abnormal development in their children. Additionally, Cuccaro and colleagues (1996) conducted a study in which they provided to various professionals vignettes that described a child with symptoms of either ASD or Attention-Deficit/Hyperactivity Disorder (ADHD). The vignettes also indicated the ethnic group membership or SES status of the child. The results of their analysis showed that professional perceptions were not influenced by ethnic group membership but did differ as a function of SES. Taken together, these findings suggest that differences in prevalence rates may be the consequences of differences in SES, rather than in culture.

In addition, other sociocultural factors such as increased public awareness, changes in diagnosis and referral patterns, and advances in assessment instruments may play a role in discrepant prevalence rates of ASD across cultures (Levy et al. 2009; Posserud et al. 2010). For example, some researchers have discovered a direct relationship between alterations in diagnostic criteria and resulting changes in prevalence rates in Australia (Nassar et al. 2009) and Denmark (Parner et al. 2011). A recent cross-ethnicity study conducted in the USA reported highest prevalence rates among Caucasian children and lowest rates in children of Hispanic descent, but methodological and sociocultural factors seemed to be largely responsible for the observed differences (Zaroff and Uhm 2012). Furthermore, there has been burgeoning evidence that ASD is a neurological disorder (National Research Council 2001). Researchers have demonstrated chromosome abnormalities and gene variants among persons with ASD (Christian et al. 2008; Marshall et al. 2008; Persico and Bourgeron 2006; Szatmari et al. 2007). Given these findings together, it is likely that various cultural factors do significantly influence on prevalence of ASD. Given the emerging understanding of the etiology of ASD, it is likely that differences in ASD prevalence across cultures are a result of numerous factors, sociocultural and otherwise.

Cross-Cultural Differences in ASD Symptoms

Although differences in ASD symptomatology across cultures are less frequently investigated than prevalence rates, this topic is an important one to consider. The lack of recent research on this topic may be due to predominant past evidence suggesting there is little variation in the behavioral manifestation of ASD across culture, ethnicity, and social class (Campbell 1996; Cuccaro et al. 1996; Morgan 1996). In addition, more recent research found similarities in age of ASD onset, core symptomatology, and prevalence across European and North American populations (Fombonne 2009). Nonetheless, a consensus regarding degree of difference in ASD symptomatology across cultures has not yet been established due to recent discrepancies in results. Overall, potential differences in symptom frequency, severity, and presentation across cultures is considered less frequently than other topics related to the relationship between culture and ASD. Thus, further investigation of this topic is necessary to clarify discrepant findings.

Differences in ASD symptoms across cultures have been discovered in the past. For instance, in his comparison of direct observations of African and British children, Lotter (1978) found that African children displayed fewer repetitive movements (e.g., flapping, rocking) and complex ritualistic activities, but more repetitive manipulation of objects (e.g., carrying or banging items) than their British counterparts. Although the author noted that he used a screening checklist, little additional information is available about his observation procedure, and thus results should be interpreted with caution.

In one of the latest studies investigating this topic, Horovitz and colleagues (2011) found no significant differences between Caucasian Americans and African Americans on the *Baby and Infant Screen for Children with Autism Traits: Part 3* (BISCUIT-Part 3; Matson et al. 2007) in caregiver ratings of three items addressing stereotypic behavior (Horovitz et al. 2011). Additionally, other researchers in the USA (Chaidez et al. 2012) examined several characteristics of

Hispanic and non-Hispanic participants and found no significant differences in any subscale of the *Autism Diagnostic Interview, Revised* (ADI-R; Lord et al. 1994; Rutter et al. 2003), a widely used caregiver report measure of ASD symptoms. Further, acculturation did not appear to have an effect on symptom severity (Chaidez et al. 2012). However, it is important to note that these authors did not use a standardized measure of acculturation, but rather used country of birth and age at immigration as a proxy.

Recently, a group of researchers evaluated the impact of cross-cultural factors on endorsed ASD symptoms (Matson et al. 2011; Zachor et al. 2011), challenging behaviors (Chung et al. 2012), and social skills behaviors (Matson et al. 2012) in four different countries: the USA, the UK, Israel, and South Korea. The authors used several standardized informant report measures: they assessed symptoms of ASD using the *Autism Spectrum Disorders-Diagnostic for Children* (ASD-DC; Matson and Gonzalez 2007c), challenging behaviors using the *Autism Spectrum Disorders-Behavior Problems for Children* (ASD-PBC; Matson and Gonzalez 2007a), comorbid symptoms using the *Autism Spectrum Disorders-Comorbidity Child Version* (ASD-CC; Matson and Gonzalez 2007b), and social skills using the *Matson Evaluation of Social Skills with Youngsters-II* (MESSY-II; Matson 2010).

First, Matson and colleagues (2011) examined symptoms of ASD in children from different cultures to evaluate the effect these differences would have on the diagnosis of ASD. They reported significant differences across cultures for all core ASD symptom domains (i.e., nonverbal communication/socialization, verbal communication, and insistence upon sameness/restricted interests). For example, participants from the UK showed significantly more impairment across all domains, and children from Israel showed significantly less impairment. However, no significant differences emerged between participants on the domain of social relationships. Zachor and colleagues (2011) examined cross-cultural differences in comorbid symptoms of children with ASD. They found that participants from the USA had significantly higher scores than participants from South Korea on the avoidant subscale. Additionally, participants from the USA had significantly higher scores than participants from Israel on the overeating and tantrum subscales. No significant differences were found between children from the USA and children from the UK. In a similar study, Chung and colleagues (2012) compared children from the same countries on the presence and severity of challenging behaviors that are often exhibited by individuals with ASD. The authors found that, compared to the participants from South Korea and Israel, those from the USA did not differ on many challenging behaviors but did exhibit higher levels of externalizing behaviors. On the other hand, the participants from the UK had significantly higher endorsements of presence and severity of challenging behaviors than the participants from the USA on approximately half of the challenging behaviors examined. Lastly, Matson et al. (2012) examined the differences in reported symptoms of appropriate and inappropriate social skills between children and adolescents from South Korea and the USA using the *MESSY-II*. Although participants from the two countries scored statistically different from each other on all three subscales (e.g., Hostile, Adaptive/Appropriate, and Inappropriately Assertive), the mean scores fell into the same impairment level, indicating no clinically significant differences.

All of the aforementioned more recent studies used informant report measures to assess the occurrence of ASD symptoms. This is somewhat problematic because symptom perception, recognition, and interpretation appear to differ across cultures (Rogers-Adkinson et al. 2003). Therefore, perhaps a better way to investigate this topic would be to use a standardized observation measure to assess the behavior of children of different cultural backgrounds. Nonetheless, even standardized observations are influenced by the administrator's perceptions and biases, which can impact assessment results, as elaborated on in the following section.

Cross-Cultural Differences in Perception of ASD Symptoms

As discussed, further analysis is necessary regarding behavioral manifestations of ASD across cultures, as it is difficult to make solid conclusions based on the research presently available. An additional aspect to consider when examining ASD symptomatology across cultures is its influence on perception of symptoms. The potential impact of the cultural background of the child, of the caregiver serving as an interview informant, and of the clinician interpreting informant report and making personal observations are important to take into account. For instance, the cultural awareness and sensitivity of the clinician, as well as his or her culturally based value system, can have an effect on his or her assessment and interpretation of presenting symptoms (Tseng 1997). Furthermore, because research procedure for symptom assessment frequently consists of interview measures, the influence of informant biases are also important to consider. There are significant differences in terms of symptom perception, recognition, and interpretation (Rogers-Adkinson et al. 2003), report style (Daley 2002), and acceptance of diagnosis of ASD (Dyches et al. 2004) across cultures.

Mandell et al. (2007) determined that, in their sample of 406 Medicaid-eligible children, Caucasian children were almost three times more likely than their African American counterparts to receive an autism diagnosis on their first visit to a specialty care provider. This pattern may result in to an apparent difference in age of onset; researchers in the USA reported that children of Hispanic and African American backgrounds, as well as those born to foreign mothers, were diagnosed later than their Caucasian peers (Valicenti-McDermott et al. 2012). This is a problematic trend; if, for minority populations, appropriate diagnoses necessitate more time dedicated to assessment, valuable time is lost that could be used for early intervention and effective treatment techniques.

Furthermore, different cultural expectations of typical development may influence identification of symptoms characteristic of ASD and the time of diagnosis (Daley 2002), as well as impact the consideration of behaviors as developmentally normal or abnormal. For example, parents in different cultures (e.g., Australian and Lebanese mothers living in Australia; Goodnow et al. 1984) may have discrepant expectations regarding the timetable for various developmental milestones. As a result, a child may be considered developmentally delayed in one culture but “on track” in another. Such a disparity could influence age at referral to a clinician and subsequent diagnosis.

Additionally, there may be differences across cultures in the use of pointing, eye contact, sarcasm, physical touch, personal space, voice inflection, and gestures (Dyches 2011). Thus, identification of dysfunction in such facets of behavior likely differs across cultures, meaning lack thereof may not necessarily be considered problematic or symptomatic of ASD. For instance, in rural South Africa, should a child look directly into an adult’s eyes while conversing, the adult would consider it disrespectful (DeWeerdt 2012). However, a lack of eye contact is a common indication, even a hallmark, of ASD symptomatology. Without cultural consideration, the presence or absence of a behavior as a manifestation of cultural values could be interpreted as problematic, even indicative of disorder.

Furthermore, difficulties perceived as communication deficits could actually be manifestations of a language barrier (Begeer et al. 2009). This misperception is likely more common among immigrant children or those living in households where the predominant language spoken is different than the language spoken by the majority culture. In such situations, the children’s learning of the language in which the diagnostic assessment is conducted may be delayed, which could subsequently be misinterpreted as communication difficulties attributable to ASD.

Perspectives regarding etiology or causes of ASD also vary substantially across cultures and can impact a family’s reaction to a diagnosis. For instance, some young Hispanic mothers view parenting a child with a developmental disability as a challenge to improve character, while their elders may perceive it as a punishment for a sin the parents committed (Skinner et al. 1999).

Similarly, Asian parents may attribute disability to supernatural forces or the sins of the child's ancestors (Chan 1992). Among African American families, having close ties to a church or religion appears to play an important role in the positive appraisals of rearing a child with disabilities (Glidden et al. 1999).

Differences across cultures in the perception of symptoms and appraisal of having a child with ASD are important to consider for several reasons. Primarily, the way in which a parent interprets his or her child's behavior influences not only the type of treatment sought, but also affects a more crucial decision, whether or not to seek treatment at all (Mandell and Novak 2005).

Furthermore, caregiver appraisals affect perception of the burden of caring for a child with ASD, which in turn affects levels of parental stress. For instance, a negative appraisal of caring for a child with ASD in turn increases perception of burden (Stuart and McGrew 2009).

Cross-Cultural Differences in Treatment

Since Lovaas's treatment study in 1987, which reported results of behavior modification treatment for autism, there has been a dramatic increase in outcome studies, as well as significant changes in the mental health service system in the USA. Particularly, applied behavior analysis (ABA) became a treatment option based upon research conducted in the past 30 years. Several divisions under the American Psychological Association (APA) declared ABA as evidence-based treatment for autism (i.e., Division 33, Division 55; APA, 2012). In addition, federal government agencies such as the National Research Council and National Institute of Mental Health, as well as state governments including those of New York, Washington, and Maine, recommend ABA as an effective teaching method for ASD. As a result, diverse types of ABA services are provided via school districts or private agencies, though the nature of services differs across states.

Although the current status of treatment knowledge and service is significantly better in the USA than in many other countries, utilization of treatment differs across Americans of varying cultural backgrounds. In particular, researchers have indicated that minority cultures in the USA seek psychological services less frequently than Caucasians, and more frequently turn to primary care providers or informal sources (see review by Satcher 2001).

One major obstacle to receiving services among minority cultures in the USA is the language barrier between service provider and client and/or family. For example, Choi and Wynne (2000) conducted a survey of use of mainstream services among Asian Americans to determine common obstacles. These authors cite communication difficulties between families and service providers as a major discouraging factor in Asian American families seeking formal services. Information on developmental disabilities is not always available in all languages spoken by families necessitating services. In fact, there is not even a word for *autism* in some Asian languages (Wilder et al. 2004).

Values specific to certain cultures may also influence treatment perception and utilization. For example, Choi and Wynne (2000) suggested that the strong emphasis on privacy among Asian Americans discourages seeking of assessment services, in which families may have to delve into personal histories and other sensitive matters, as well as decreased participation in support groups, in which sharing personal experiences is central. Without receipt of mainstream services, these families may turn to alternative methods, such as acupuncture and herbs, that are traditional in their culture and therefore better reflect their values. Additionally, African Americans place great importance on the opinions of family, friends, and religious groups, and thus are prone to turn to these individuals before seeking services (Snowden 2001). This preference likely contributes to the decreased seeking of mental health services among African Americans compared to Caucasian Americans.

Information about effective treatment and available service provided by government and private agencies are very limited in many countries, including Ireland, Germany, Italy, China, Taiwan, and South Korea (Chung et al. 2012; Eikeseth et al. 2007; Keenan et al. 2010; Lin et al. 2011; Reed et al. 2007; Yangqing 2006). Although the prevalence of autism appears to be increasing, services have not necessarily followed suit. Existing government support and assistance for affected children and their families remains insufficient. ABA services are extremely limited due to lack of training and educational programs. By nature, ABA services require intensive treatment hours, systematic treatment plans with frequent modifications, trained and dedicated staffs, and financial support. Hence, this type of service is difficult to sustain without a systematic treatment service system in place in the community and/or government. In communities lacking such a system, the burden of treating and educating children with autism falls primarily on caregivers.

In China, autism treatment techniques range from using herbs and acupuncture (e.g., Wong 2002; Zhang 1988) to sensory integration training (e.g., Lin and Zhang 1995; Wang 2000). ABA is provided in rare cases. Clark and Zhou (2005) discussed that psychiatric hospitals offer limited treatment which focus only on improving motor skills. “Stars and Rain” is one of the few programs that uses behavioral principles to treat children with autism; however, the treatment cost is not feasible for most families. Currently, there are no public school programs designed to effectively address the needs of children with ASD; available services are not intensive nor individualized enough (Clark and Zhou 2005).

Across Europe, ABA treatment funding is prevented. For example, the Irish government has fought against parents who requested ABA treatment for their children (Keenan et al. 2010). ABA services are funded only when ordered by a tribunal (i.e., judicial system) in the UK, and statutory ABA treatment is non-existent in Germany and Italy. In most cases, parents have to pay out of pocket if they want home-based behavioral programs (Keenan et al. 2010).

The current status of autism treatment in South Korea is not any better. Although principles of behavior modification were introduced in South Korea in the early 1980s, it was not until the past 10 years that ABA has started to receive acknowledgement from the general population as a treatment choice for ASD. There are only a handful of ABA service providers in South Korea. This is not surprising considering the fact that there were only 13 Board Certified Behavior Analysts (BCBAs)/Board Certified assistant Behavior Analysts (BCaBAs) in South Korea as of Jan., 2014 (http://www.bacb.com). The majority of South Korean children with ASD receive other, likely better known, types of interventions, including play therapy, speech/language therapy, music, dance and art therapy, etc. Some parents seek other controversial treatments such as auditory integration therapy (AIT), gluten/casein free diet, animal therapy, etc.

A brief review of treatment outcome studies for children with ASD in South Korean instructional settings was conducted for the purpose of this book chapter. The 3 most reputable Korean databases (e.g., KISS, DBia, RISS) were used. A total number of 262 studies were found using a combination of the following terms: *autism*, *pervasive developmental disorders*, *developmental disabilities*, *treatment*, and *therapy*. Studies were categorized based on treatment methods: art therapy (36 %), music therapy (29 %), play therapy (21 %), dance/movement therapy (5 %), ABA (5 %), etc. Results demonstrated the current status of treatment practice and research in South Korea, which is far from optimal. Recently, the Korean Society for Child and Adolescent Psychiatry published treatment recommendations for ASD (Koo et al. 2007). This is the first formal ASD treatment guideline by professionals in South Korea. Although ABA is recommended along with understudied and not-yet proven methods, the development of treatment guideline is a meaningful step toward dissemination of evidence-based ASD treatment in South Korea.

Thanks to recent economic growth along with increased awareness of ASD, more structural and systematic supports have been available for families of children with ASD in South Korea. In fact, the Act on the Promotion of Education for the Handicapped (APEH), the law ensuring service provision for children with disabilities, was revisited in 2007. The regulations under the revised and enlarged APEH are fairly similar to the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004), except that imited systematic and financial supports are currently available in South Korea. Advocacy by active parent support groups may help progress service provision in upcoming years. Nonetheless, at present, current services are minimal, limited to assistance such as respite care, vouchers for limited-time treatment, and food stamps. Currently, parents are responsible for all costs associated with additional treatment and related services. According to a recent survey in South Korea, approximately 78 % of parents of children with ASD spend more than US$ 1000 per month for treatment (Lee et al. 2010). Considering that the 2012 Gross Domestic Product (GDP) in South Korea was approximately US $ 23,000 (http://www.imf.org/external/data.htm), it can be assumed that treatment cost is a substantial burden to families.

There are a few ABA clinics in South Korea; In 2007, the a city hospital for children in Korea opened an ABA clinic specializing in severe challenging behavior, benchmarking the Neurobehavior Unit Outpatient Clinic (UBU-OP) in the Department of Behavior Psychology at the Kennedy Krieger Institute. Seoul Metropolitan Children's Hospital has provided assessment and treatment services, including parent training, workshops, and social skills training, to more than 200 children and adolescents. The program is significantly less expensive than other existing services but still places a financial burden on the family, with companies rarely helping their employees with costs of services for ASD. Due to an insufficient number of trained therapists, the waiting list is several years. Diverse efforts have been made to resolve this issue, but no drastic changes are expected in the near future. However, other promising progress has been made in this setting with expansion of ABA services in the form of an early intervention and feeding clinic opened in 2011. The clinic is based on programs from various US agencies (e.g., New England Center for Children, Center for Autism and Related Disorder, Denver Early Intervention Program), as well as commercial programs (e.g., STAR program).

The biggest obstacle to providing quality ABA services in South Korea is limited education and training programs for therapists. There are only 3 BACB (Behavior Analyst Certification Board) accredited programs in Korea. Additionally, new hiring is not guaranteed due to lack of ABA clinics and average annual salary for a therapist is less than $ 20,000, making recruiting therapists extremely difficult. Currently, many therapists in the city hospital are either BCBA/BCaBA certified or under training to be certified. The therapists take internet courses via the US institutions to meet the requirements for the certification exam. Using these US programs means the trainees must overcome the language barrier, which has proven a big obstacle with multiple certification exam attempts (i.e., average of four attempts) necessary before successful completion.

In July 2012, the South Korean Department of Health announced a new plan for persons with developmental disorders, including ASD, which includes system development and support for diagnosis and early intervention for children (http://english.mw.go.kr/front_eng/index.jsp). In 2013, they oped an ABA clinic for challenging behaviors at the Seoul National Hospital, the biggest national psychiatric hospital in South Korea, for treatment of severe challenging behavior. Although there are potential barriers and issues to be resolved, this is truly significant system progress in the treatment of ASD for the country.

Cross-Cultural Factors to be Considered

Because parents have more contact with their children than other service providers, such as therapists or clinicians, effective parent training is an essential part of treatment for children with ASD. Previous studies have shown that parents can successfully implement behavioral procedures, which lead to beneficial outcomes (Reagon and Higbee 2009; Vismara et al. 2009). Thus, investigating cross-cultural differences in parental factors, such as parental reporting style, social support/coping, and stress, is necessary to better understand differences in ASD across cultures.

It is not surprising to see differences in ASD prevalence across countries, considering cross-cultural differences in parental perception of, beliefs about, and reporting styles regarding their children's symptoms. For example, Bornstein and colleagues (1998) compared parenting-related issues in Argentine, Belgian, French, Israeli, Italian, Japanese, and American mothers of 20-month-olds. Maternal competence, satisfaction, investment, and role balance in parenting, as well as attributions of successes and failures, were investigated. Mothers from different cultures shared few similarities in parenting ideas. In this study, US mothers rated themselves competent and satisfied in their parenting. On the other hand, Japanese mothers reported themselves to be the least competent or satisfied in their parenting. They were also more likely to attribute their children's accomplishments to parental efforts; when the child was not typically developing, the mother was considered not working hard enough as a parent. In this culture, under-detection or underreport of children's problems is common when a child is not typically developing. Indeed, underreporting of children's challenging behaviors has been found in several Asian countries (Chung et al. 2013; Oh et al. 2002).

The topic of cross-cultural differences in social support and coping skills among parents of children with ASD has not been frequently studied. Lin and colleagues (2011) compared social support and coping styles between Taiwanese and American mothers of children with ASD. No differences were found between the groups in terms of social support, but Taiwanese mothers reported using significantly more problem-focused and emotion-focused coping skills than American mothers did. More frequent use of emotion-focused coping skills among Taiwanese mothers could be attributed to lower levels of family adaptability and cohesion and lead to higher levels of maternal depressive symptoms. Furthermore, Chinese parents seem to avoid seeking social support from people outside the family when they have a child with intellectual and developmental disabilities (Holroyd 2003; Lam and Mackenzie 2002; Pearson and Chan 1993).

Parenting stress is defined as psychological distress arising from the demands of rearing children (Anthony et al. 2005; Reitman et al. 2002). Researchers have consistently confirmed distinct types of parenting stress across cultures (Krulik et al. 1999; Solis and Abidin 1991). For example, Krulik and colleagues (1999) found that Japanese mothers of chronically ill children showed more stress in role restriction and depression but less stress in terms of competency than mothers from the USA, Israel, and Jordan. Similarly, Solis and Abidin (1991) found that in a Hispanic sample, mothers of handicapped children reported more stress than those of non-handicapped children.

Children's challenging behaviors are one of the most powerful predictors of parenting stress (Baker et al. 2002; Baker et al. 2003; Harrison and Sofronoff 2002). Researchers in the USA have consistently found that parents of children with developmental delays including autism report higher levels of parenting stress compared to their normative counterparts (Baker et al. 2002; Baker et al. 2003). Outside of the USA, however, only a few studies have investigated this relationship between parenting stress and challenging behaviors in children. Chung and colleagues (2013) directly compared differences in reported parenting stress and childhood problem behaviors across Korean and American mothers. Korean mothers reported significantly higher parenting stress, yet significantly lower childhood challenging behaviors, compared to American mothers. In addition, mother-based reports of child problems were significantly associated with parenting stress in the American sample but not in the Korean sample.

Explanations for cross-cultural differences in parental factors are speculated but have not been thoroughly investigated. Cultural values appear to play an important role for this discrepancy. In China, having a child with a disability is viewed as a failure (Chen and Tang 1997; Ghosh and Magan 2009), so Chinese parents tend not to expose their child with a disability to the public and are reluctant to seek help from outside (Clark and Zhou 2005). Similarly, Confucian values, which are heavily ingrained in Korean society, have contributed to a sense of collectivism whereby “standing out” or being different is not encouraged. In such an environment, reporting that their child has a disability goes against this ideal, contributing to elevated levels of parenting stress and the reluctance to report such information. Currently, relatively low levels of social support exist in South Korea (Shin 2002). Given that social support serves as a preventative buffer against parenting stress (Crnic et al. 1983), this feature of Korean society may also contribute to heightened levels of parenting stress among Korean parents. Negative stigma related to having children with a disability is also very prevalent in South Korea (Cho et al. 2003). Together, these societal and cultural factors likely affect levels of parenting stress and willingness to report emotional and behavioral problems of their children among Korean parents.

Conclusion

The current chapter reviewed cross-cultural differences in ASD prevalence, behavioral manifestation, and treatment. It further provided several sociocultural factors as possible explanations for disparities. Research has yielded mixed results regarding discrepancies in autism prevalence across different cultures. Despite inconsistent findings, there appears to be a pattern of increasing rates of ASD diagnoses in non-Western countries. There have been varying reports of cross-cultural distinctions in ASD symptomology as well; there is some evidence of minimal variation in the behavioral manifestation of ASD across cultures, while other research indicate no differences. Dissimilarities in treatment across cultures were also discussed in terms of what options are available and chosen among various ethnicities and in certain countries. Overall, the current status of treatment knowledge and provision appears to be significantly better in the USA than many other countries.

Some experts attribute disparities in various factors concerning ASD (e.g., prevalence, symptomatology, treatment) to differing cultural practices, beliefs, and values. Such cultural aspects may influence perception of ASD, resulting in differences in assessment, and thus prevalence rates and ratings of symptomatology, as well as in treatment. Thus, the relationship between factors related to ASD and aspects of culture appears to be somewhat circular in nature. However, firm conclusions about this relationship and the topic of multicultural and minority issues in ASD in general cannot yet be made based on existing evidence. Most of the cross-cultural studies in this area have been conducted without systematic exploration of the factors underlying discovered differences across cultures. Therefore, only speculations about the source of cultural differences in ASD are available at this point. Although such ideas seem plausible and explanatory, they lack empirical evidence and thus are just possibilities that require further exploration. Future studies should aim to further understand reasons for cross-cultural differences in order to increase efficacy of assessment and treatment for affected people of all ethnic, racial, and backgrounds.

> Of course, research findings on this topic influence not only subsequent analyses, but also serve to inform clinical practice. From a clinical standpoint, cultural awareness and sensitivity development are important for a professional to appropriately serve a multicultural or minority population. With knowledge of culture’s influence on the various aspects of ASD discussed, clinicians will be better prepared and more likely to take the client’s cultural background into account during assessment and interpretation, resulting in more personalized and applicable outcomes and recommendations. Thus, additional research on this area of interest is warranted because further knowledge may encourage individual treatment, and thus optimal outcome for this population.

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