Culturally and Linguistically Responsive Social Skills Interventions for Children with Autism Spectrum Disorders

Sunyoung Kim

University of Illinois, Chicago

Hyejung Kim

University of Wisconsin at Madison

Rachel W. Saffo

University of Alabama

Abstract

Given the rapidly growing number of students with autism spectrum disorders (ASD) from diverse cultural communities in the United States, researchers have steadily emphasized the

importance of developing and implementing culturally responsive interventions and practices. Unfortunately, there is no clear understanding of culture and diversity in the field of special education, nor are there guidelines to intertwine students' diversity with the practical process of interventions. The purpose of the article is to highlight the importance of considering the cultural responsiveness and social validity of social skills interventions to accommodate increasing needs of students with ASD from non-dominant cultural and linguistic communities. Understanding an individual's ecological contexts and needs, as well as social validation of interventions among a student's cultural contexts or communities, can provide vital information about the contextual fitness of the interventions and further promote feasibility and sustainability of the interventions. Recommendations for practices and research are discussed.

Keywords: *autism spectrum disorders, social skills interventions, cultural responsiveness, social validity, ecological approach*

Introduction

Over recent decades, researchers, clinicians, and policy makers have made great contributions to develop and identify the most effective treatments for individuals with autism spectrum disorders (ASD), focusing on empirical validation and effectiveness. These treatments basically reflect scientific rules of applied analysis that environmental factors regulate the occurrence of behavior (Schreibman, 2000). "*The science wherein these principles are applied to the improvement of socially important behaviors is known as applied behavior analysis, and the development of the behavioral treatment[s] of autism is largely the result of this field of science"* (Schreibman, 2000, p. 373).

Understanding which intervention strategies have sufficient empirical validation and effectiveness may affect the selection of interventions (National Autism Center; NAC, 2009). Many researchers from state and national research organizations, such as the National Research Council (NRC), New York Department of Health, and What Works Clearinghouse, have identified treatments for individuals with ASD that are supported by sufficient scientific evidence as well as those with insufficient or emerging evidence (NAC, 2009). To identify evidence-based interventions (EBIs), researchers consider the body of research available on the selected treatment and examine whether the treatment produced beneficial effects or harmful outcomes for individuals with ASD (NAC, 2009). They also consider the values of stakeholders (e.g., parents, caregivers, and individuals with ASD) to ensure that the treatment does not violate their cultural values, preferences, needs, and the goal of the intervention (NAC, 2009). National policies such as NCLB and IDEA also have highlighted the importance of EBIs and required educators to use them, and stressed their cultural responsiveness or appropriateness.

Meanwhile, there is general agreement among most scholars and researchers that the best treatment for children with disabilities is individualized intervention to meet each child's needs and the learning context (Bernal, Jiménez-Chafey, & Rodríguez, 2009). Researchers admit that "*there is no 'one size fits all' treatment for children with autism"* (Schreibman, 2000, p. 373). Particularly, because much human development and EBI research have been established within the middle-class white communities of Europe and North America (Artiles, et al., 2010; Arzubiaga, Artiles, King, & Harris-Murri, 2008; Rogoff, 2003; Padilla, 2004), researchers have questioned whether EBIs developed within a dominant group of people could be effective on other cultural and/or linguistic groups (Bernal et al., 2009; Ortiz & Yates, 2008). Would EBIs adopted outside middle-class learning environments strengthen external validity? Research

should avoid over-.generalizations that assume that human development across the globe functions in the same ways as in the major communities, and must be able to account for both similarities and differences across communities (Rogoff, 2003). Emphasizing the importance of using EBIs without knowing its efficacy across diverse communities could still be impracticable. Thus, diverse micro-cultural groups within the United States should become an important part of research, so that researchers can examine the external efficacy of EBIs as well as the needs for accommodation to meet ecological contingencies for different cultural communities (Artiles, et al., 2010; Kim, 2016; O'Connor & Fernandez, 2006; Rogoff, 2003).

To date, few social skills intervention studies have reported or embedded participants' cultural and contextual factors, such as race/ethnicity/nationality or socio-economic status (Delano & Snell, 2006; Harper, Symon, & Frea, 2008; Kuoch & Mirenda, 2003; Lee, Odom, & Loftin, 2007). Although these studies provided relatively detailed information about the participants' current needs in languages and social skills, they may present a limited understanding of the cultural responsiveness of interventions because of a lack of information regarding how the research design reflected participants' needs (i.e., whether the accommodations were necessary to meet participants' needs and whether the intervention affected the participants' and families' lives). More attention should be paid to making effective EBIs for children with ASD from diverse cultural and linguistic backgrounds (Artiles, et al., 2010).

The purpose of this article is to provide better understanding of the concept of cultural diversity in the field of special education, particularly for children with ASD, and the importance of considering cultural responsiveness in behavioral intervention research using social validity. Given an increased attention to but limited information about cultural responsiveness in the

applied field, this article provides implications for future culturally responsive intervention research and practices.

Culturally and Linguistically Diverse Students with Autism

While the proportion of culturally and linguistically diverse (CLD) individuals has been rapidly growing in the United States (U.S. Department of Education, 2014), the importance of culturally and linguistically responsive (CLR) education has been emphasized (Artiles et al., 2010, Trainor & Bal, 2014). However, there are scarce resources to support those students with ASD and their families (Tincani, Travers, & Boutot, 2009). Etiologically, ASD is considered to occur equitably across ethnicity/race and linguistic communities (Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004; Fombonne, 2007; Tincani et al., 2009). Dyches et al. (2004) also explained by citing the Autism Society of America (2000) that income, education levels, and family lifestyle are not directly related to the occurrence of ASD. However, there is a disproportionate representation of people with ASD among various race/ethnic groups in the United States (Artiles & Bal, 2008). According to the U.S. Department of Education (2008), the prevalence of ASD was 1 in 186 among Asians/Pacific Islanders; 1 in 211 among Whites; 1 in 255 among Blacks; 1 in 288 among American Indians/Alaska Natives; and 1 in 342 among Hispanics (Marks & Kurth, 2013). The reasons behind this disproportion in ASD are not yet clearly known (Dyches et al., 2004), although researchers have suggested two possible reasons: persistence of prejudice and racial stereotypes (Artiles, et al., 2010; Sullivan, 2011). Researchers and educators need to design and implement CLR interventions to better account for the disproportionately represented, but under-served populations of children with ASD in the U.S.

Conceptualization of Culture

Although researchers have called attention to the importance of

CLR education (Gay, 2000), there neither is a clear definition of cultural diversity pertaining to responsiveness in research in the field of special education, nor are there clear guidelines for applying these concepts to intervention planning (Trainor & Bal, 2014). Thus, the first step to understanding cultural diversity in special education is to define "*culture*" and diversity of human development. Trainor and Bal (2014) define culture as *"characteristically dynamic, multifaceted, and conflict laden, resulting in power/privilege differentiations, and innovations that are locally or heuristically accomplished"* (p. 204; see also Bal, 2011). They also explain that culture is always changing, because it is the product of individuals who come together in varied "*social, economic and physical contexts"* **(**Trainor & Bal, 2014, p. 204). Cultural groups are thus multifarious, and roles that each individual takes on are fluid and changeable, depending on the needs of different contexts (Banks, 2006; Padilla, 2004; Trainor & Bal, 2014). Solely considering one cultural group membership (e.g., race/ethnicity) as cultural diversity is limited as an approach, because it fails to account for change and variation (Padilla, 2004; Trainor & Bal, 2014). Because change and variation are vital to concepts of culture and diversity, generalizations based solely on membership in a group are impractical and misleading.

The field of education, however, may have not caught up to this understanding of culture. Banks (2006) points out that "culture" in the field of education is often characterized as "static, unchanging, and fragmented" (p. 71; see also Artiles, 2003; Arzubiaga, et al., 2008). In other words, simplified descriptions of racial/ethnic groups, such as American Indian culture, Mexican American culture, and African American culture have caused stereotyped perceptions of particular ethnicities, nationalities, or races (Banks, 2006). While scholars have visualized

culture as nationalities or colors, this concept of culture has not considered "*variations within the national culture or the smaller culture within it*" (Banks, 2006, p. 72). This might exacerbate stereotyped thinking and interpretation of nationality or race/ethnicity. Obviously, "every nation-state has particular overarching values, symbols, and ideations shared to some degree by all micro-cultures" (Banks, 2006; p. 72; see also Banks, 2008). However, more importantly, the shared values, symbols, and ideation may be perceived, interpreted, reinterpreted, produced, and experienced differently or diversely by micro-cultural groups within the nation (Banks, 2006, p. 72). Micro-cultural groups within a nation encompass the complex characteristics and the ways in which several other factors such as race, language, gender, ability/disability, regional groups, sexual identity, and social class interact in shaping individuals' behaviors and development trajectories (Banks et al., 2005; Padilla, 2004).

Cultures may possess or be distinguished by the aforementioned components as well as many other impalpable components such as values, behavioral styles, language and dialects, cultural cognition, identification, nonverbal communication, and perspectives and worldviews (Banks, 2006; Banks & Banks, 1995). Each component influences the behaviors and development of individuals; these components also interact to influence the behaviors of individuals (Banks, 2006). Individuals develop as participants in cultural communities or groups that possess tangible and intangible components (Rogoff, 2003). Everyone has culture; this construct facilitates their human activity (Erickson, 2009). In this way of thinking, culture is ever-changing, as individuals participate in cultural activities and communities and accumulate their historical experiences from social groupings that are different combinations of the various components mentioned (Erickson, 2009; Trainor & Bal, 2014). Therefore, culture is a product of human creativity in action (Erickson, 2007). Once individuals are embedded in a culture, the culture

empowers the individuals when they explore further activities and experiences (Erickson, 2007; Trainor & Bal, 2014).

Ecological Approach

Due to the complex nature of culture that distinctively characterizes each individual, culture can be understood in-depth within an individual's cultural boundary. Bronfenbrenner's ecological system theory (1979; 2005) as a theoretical framework in the field of education, is often adapted for a person-centered intervention to account for each individual's cultural system and how the individual develops in and interacts with cultural contexts (Garcia & Dominguez, 1997; Gil-Kashiwabara, Hogansen, Geenen, Powers, & Powers, 2007; Trainor & Kim, 2012; Trainor, Lindstrom, Simon-Burroughs, Martin, & Sorrells, 2008). The framework explains an individual's cultural contexts in five dimensions: micro-, meso-, exo-, macro-, and chrono-systems.

The micro-system includes all immediate contexts of an individual, such as a child's family, school, and neighborhood. As part of this micro-system, the individual directly interacts with environmental contexts. The meso-system involves the relationships and connections between micro-systems. For example, the relationship and incorporation between families and an IEP team might affect the education planning and future goal setting for a child with ASD. The relationship between family and neighbors might affect the child's qualify of social life. The exo-system is the larger social system. The child with ASD may not interact with this system directly, but the child's development may be affected by the exo-system's interaction with the micro-system. For instance, parents' busy work schedules may affect the child's daily routine (Trainor & Kim, 2012). The macro-system encompasses the broader culture, such as values, laws, attitudes, and social supports, which potentially can determine interactions within other systems.

National policies such as IDEA and NCLB may relate to the quality of education and services. Lastly, the chrono-system represents the dimension of time. It relates to the passage of the individual's time, the change of circumstances, such as family structure, over the individual's life course (Hong, Huang, Sabri, & Kim, 2011), and history or memorable timing of society, which influences the individual's development (Trainor & Kim, 2012).

As described, individuals and cultures have a symbiotic feedback loop. Thus, in order to understand culture and diversity and reflect them in education research, researchers need to first focus on the ecology in which the individual's cultural contexts are embedded. Bronfenbrenner (1979) states that "*the ecological validity refers to the extent to which the environment experienced by the subjects in a scientific investigation has the properties in it supposed or assumed to have by the investigator"* (p. 29). From the steps of designing and implementing interventions to evaluating their effectiveness, the contextual fit and ecological validation of the intervention should be examined; thereby, the intervention better achieves cultural sensitivity (Bernal, et al., 1995).

Introduction to Social Validity

Fields such as business and the social sciences use other terminology to describe ecological validity, such as clinical significance, social significance, cultural validity, and social validity (Carter, 2010). In the field of applied behavior analysis, social validity is the most commonly known term, proposed by Kazdin (1977) and Wolf (1978; see also Carter, 2010; Kennedy, 2005). Social validity in behavior intervention research has been defined as the social importance and social acceptability of interventions applied to enhance the function of behavior (Carter, 2010; Wolf, 1978). Thus, in intervention research, social validity is included to understand and evaluate the effectiveness, contextual fit and ecological validation of the

intervention. In other words, social validity measures the degree of feasibility of the independent variables and its procedures by including stakeholders (e.g., research participants with disabilities, parents, grandparents, teachers, therapists, and/or neighbors) as research participants (Carter, 2010; Wolf, 1978). The importance of having social validity data has been highlighted in intervention research; but Machalicek, et al., (2008) found that few intervention researchers consider this a critical research component. Nonetheless, it is vital to understand and include the contextual fit of intervention, ecological needs, and stakeholders' perception as a component of intervention research.

Kazdin (1977) and Wolf (1978) first addressed the importance of social validity, which relied on subjective information in the field of applied behavior analysis (Kennedy, 2005). Because subjective evaluation encompasses concepts like social validity and conflicts with the idea of objective measurement, researchers have not considered it to be an important research component in behavior intervention research (Carter, 2010). However, Wolf (1978) poses an important question: even if we can measure objective and quantitative changes in behaviors, "How do we know that they [behaviors] are really important changes?" (p. 206). Social validity can supply such subjective judgment about the social importance of interventions and behavior changes, determined by the collective values of a given society (Wolf, 1978). As social skills interventions are subjected to promote development of 'socially important' and '*socially acceptable'* behaviors, the process of developing appropriate tools using societal input can become *"a supplement to a well-developed, objectively measured program"* (Carter, 2010, p. 9).

Components of Social Validity

Wolf (1978) defines social validity in terms of three components: "(a) the social significance of the goals, (b) the social appropriateness of the procedures, and (c) the social

importance of the effects" (p. 207). Specifically, the social validity of an intervention is ascertained by asking stakeholders several questions related to the three components, such as whether (a) the intervention goal is really what the consumers in the society need to learn, (b) the treatment procedure is socially appropriate for the consumers, and researchers treat the individual humanely, and (c) the consumers are satisfied with the level of outcomes and there are no unexpected side-effects associated with the intervention (Kennedy, 2005; Wolf, 1978). Thereby, a dialogue develops between researchers and the intervention stakeholders for continuous feedback and assessment (Carter, 2010; Kennedy, 2005). Measurement of social validity allows researchers to note whether or not they "*avoid infringing on the rights of the individuals receiving the treatments"* (Carter, 2010, p. 8; see also Kazdin, 1980). Additionally, the ongoing conversation with stakeholders possibly increases the cooperation between researchers and stakeholders and the usability of interventions across settings, such as in a home setting implemented by parents or siblings or at work sites implemented by a job coach, because the stakeholders know how to apply the specific intervention.

Social Validity Measurement

When researchers implement interventions, they interact with multiple stakeholders and influence their routines and lives (Kennedy, 2005). Since these consumers can directly and/or indirectly contribute to feasibility of the intervention (Schwartz & Baer, 1991, p.193), researchers should seek social validation of the intervention among the multiple consumers in the research participant's community. For instance, in order to design and implement interventions to change the behavior of children in educational settings such as a school or community (e.g., afterschool program, recreational centers), the researcher should directly interact with and incorporate school personnel, community directors, the participants with ASD, and their friends

in their natural settings. The intervention would directly affect the lives and routines of the families of the participants (Kennedy, 2005). The participants, their families, school personnel, and close neighbors are the direct consumers (Schwartz & Baer, 1991). Because applied research occurs in natural settings, researchers may want to understand and illustrate the clinical impact of the intervention on the specific environment and other ecologically significant people in the participant's life, as well as to gather statistical evidence of the participant's behavior changes (Barlow, Nock, & Hersen, 2009). Additionally, researchers can obtain social validity for the intervention from the persons and agencies who are the "members of the immediate community" and "members of the extended community" even if the people do not have direct relationships with the participants (Schwartz & Baer, 1991, pp. 193-194). For example, if a student with ASD uses the acquired social skills from the intervention in a community setting such as a coffee shop, cashiers and other customers in the store could be asked to evaluate social validity of the intervention (Schwartz & Baer, 1991).

There are now several systematic approaches to assess social validity since Kazdin (1977) and Wolf (1978) first introduced the concept: consumer comments, informal discussion, interviews, inventory sheets, questionnaires, surveys, rating scales, normative comparison, and observation (Carr, Austin, Britton, Kellum, & Bailey, 1999; Carter, 2010). Among the useful methods, researchers have most widely used questionnaires or rating scales (Carter, 2010). Questionnaires are typically used to present a series of questions that ask a person to respond in a simple way (e.g., checking a box, using simple words; Carter, 2010). Researchers also can include questions regarding the intervention (Kennedy, 2005) and measure the treatment acceptability by adopting a more formal method, such as a Likert-type rating scale.

Recent research involves several technologies (e.g., video cameras) and includes a larger number of naïve raters (e.g., 32 teacher-assistant trainees; Lancioni et al., 2002) who are not familiar with the research participants or the intervention strategies, but are studying in fields related to special education (e.g., psychology; Stahmer, Schreibman, & Powell, 2006). These raters observed videotaped sessions and evaluated the significance of participants' behavior changes and thus the effectiveness of intervention, using Likert-type rating scales (Lancioni, et al., 2002; Stahmer, et al., 2006).

Given the dearth of research on measuring ecological and social validity of EBIs across diverse cultural groups, Kim and the colleagues (2016) recently implemented a social skill intervention, pivotal response treatment (PRT), for four Korean American children with ASD and measured the social validity of the intervention among key stakeholders. Using a qualitative case study, the researchers (Kim & Trainor, 2017) conducted multiple interviews and observations with parents and siblings of the children with ASD and community members who interact with the children regularly (e.g., pastors, volunteers, and community program teachers) before, during, and after the intervention. Through the in-depth exploration of social validity regarding the adequacy of goal, appropriateness of procedures, and acceptability of outcomes of the social behavior intervention, the researchers, first, could set the contextually and culturally valid intervention goals and study preferred play themes/materials, which were used during children's play sessions. Moreover, the researchers reported the stakeholders' perception of intervention procedures (e.g., perceived positive/negative aspects of the intervention) and to what extent the stakeholders were satisfied with the children's behavior changes with the intervention. Stakeholders reported their high satisfaction, as the intervention was helpful to teach new social behaviors to children with ASD, as well as to broaden stakeholders' insights and knowledge

about social skill interventions for individuals with disabilities and to increase community interest in the experience of living with disability.

Social Behavior Interventions for CLD Children with Autism

When social behavior interventions are designed for and delivered to CLD children with ASD, examination of social validity is even more valuable. Stakeholders in diverse communities or tribes may have distinct social behavior traits, values, or expectations (Cartledge & Loe, 2001). Social behaviors, compared to other skills (e.g., academic, functional), are more likely to be influenced by cultural contexts, and therefore vary widely between groups and individuals. For example, many Asian countries use honorific languages to shape the pragmatics of interactions and communications. These languages are used to acknowledge, for example, elder people or people with higher social roles, and they can characterize the social hierarchy in relationships (Farver & Lee-Shin, 1997; Kim, 1991). The pace of a conversation, the way facial expressions are used, eye contact, proximity, and gestures in social interaction situations may also differ in different communities (Westling & Fox, 2009). Additionally, some social skills are not considered important to learn in some cultures. For example, in cross-cultural community studies, researchers have found that Korean Americans place less value on play skills for children's development, and thus parents and teachers maintain "social distance[s]" and accentuate academic tasks in the school setting (Farver & Lee-Shin, 2000, p. 318; see also Farver, Kim, & Lee, 1995; Farver, Kim, & Lee-Shin, 2000; Farver & Lee-Shin, 1997). European American parents and teachers place a relatively high value on play activities and are themselves active participants in these activities (Farver & Lee-Shin, 2000). Examination of stakeholders' values, preferences, and ecological needs are, thus, crucial elements that guide the development of a meaningful intervention plan.

Implications for Research

Our discussion provides some implications to enhance socially valid/culturally responsive practices for CLD learners with ASD for future social skill intervention research within three premises: conceptualization of individual's culture, ecological understanding, and embracing social validity.

Conceptualization of Individual's Culture

By adopting Banks's (2006) definition of culture, we have highlighted that shared values and cultures may be experienced, perceived, and interpreted in diverse ways by each individual. Culture is ever-changing and developing as an individual uses their cultural affiliations as a tool and participates in cultural activities. Regarding culture, future researchers first should study and define each student's and family's culture and diversity of human development (Trainor & Bal, 2014) and pursue the appropriateness and cultural responsiveness of the intervention within each participant's contexts. In particular, when a social skill intervention is designed for a student with ASD, the heterogeneity of the autism spectrum requires a more thorough understanding of the individual's needs for social skill learning and how those needs are interpreted within the individual's ecological contexts.

Although the cultural responsiveness of EBIs has been stressed, there has been a lack of research and support for teachers who struggle to improve the outcomes of culturally marginalized students in schools. Trainor and Bal (2014) provided the rubric for culturally responsive research to determine the extent to which interventions reflect on cultural responsiveness. The rubric items, for example, include: relevancy of the research problem to individuals; descriptions of participants' characteristics and positions; descriptions of research settings regarding physical, cultural, and historical factors. Additionally, it includes information

on their influence on the research process, dynamic analysis of results in reflecting participants' characteristics and backgrounds, and cultural/contextual factors (Trainor & Bal, 2014, pp. 207-209). Future intervention researchers might examine the rubric as a reference for designing high-quality intervention studies that consider cultural factors more responsively. Also, future intervention research might describe how those cultural factors are understood and embraced to design and implement a culturally responsive intervention.

Ecological Approach

Ecological conceptualization and design, is particularly helpful for researching students with ASD from diverse backgrounds. In order to have ecologically valid or culturally sensitive research, it is important to have an ethnographic investigation of the student's cultural groups, and adaptations and translation of research instruments (Bernal, Bonilla, & Bellido, 1995). Moreover, researchers should acknowledge that the development and evaluation of the study should be occurring in temporally and spatially sensitive contexts. Thus, researchers should provide ecological descriptions of the cultural, socioeconomic, and political environments of students, families, and communities. This transparency about the student's contexts can also assist in developing ethical and rigorous procedures to ensure ecological validity of the research instruments and interventions. An ecological approach can also provide an index to analyze the validity of services in socially and historically situated contexts. Despite the possible dissonance among researchers due to the subjective characteristics of ecological descriptions, this type of approach will help develop transformative research, which involves methodologies that radically innovate existing educational practice (Randall, et al., 2007). In this regard, ecological investigation will provide a new framework for culturally responsive research for students with ASD from diverse backgrounds.

Embracing Social Validity Measures

When designing social skill intervention studies that are more culturally responsive, a social validity measure can be a vehicle to incorporate family and community cultural values into intervention research. As described above, the two most frequently used methods, questionnaires and rating scales, take relatively little time to implement and yield relatively simple outcomes, yet this simplicity may not meaningfully reflect social behavior changes and perceptions in their educational situations (Kennedy, 2005). Future researchers might consider using diverse methods that can provide a greater depth of qualitative and quantitative information, such as interviews and observations. Developing interview protocols based on the three areas of social validity (i.e., goal, procedure, and outcome) would allow researchers to collect more detailed and extensive information beyond simple like/dislike or yes/no answers and would give researchers opportunities to build rapport with research participants.

Social validity has been measured in only a few recent studies of social skills interventions for students with ASD (Machalicek, et al., 2008; Wang & Spillane, 2009). Kennedy (2005) argues that only when *"a particular experimental question is developed in which this information would be useful*" (p. 226), is the evaluation meaningful and important. When Baer, Wolf, and Risley (1987) initially developed applied behavior analysis, they stated:

> *We may have taught many social skills without examining whether they actually furthered the subject's social life; many courtesy skills without examining whether anyone actually noticed or cared; . . . many language skills without measuring whether the subject actually used them to interact differently than before*. (p. 322)

Therefore, the investigation of social validity within social skills interventions for CLD participants with ASD can especially elucidate the extent to which an intervention can address

social behavior changes that meet cultural and contextual needs. Contemporary researchers have indicated an increased interest in the qualitative significance of intervention outcomes, along with quantitative evaluation. The integration of social validity as an important qualitative component of future culturally relevant research would produce useful and meaningful information. Thus, future research should consider measuring social validity by incorporating data collection methods that can yield more in-depth information, such as interviews, or by using multiple methods to strengthen the outcomes of social validity measurement. This approach will provide a meaningful framework to create culturally and linguistically responsive interventions for developing social skills for children with ASD.

Implications for Practice

From the ecological perspective, family and community involvement are key to providing meaningful services for students with ASD from diverse communities. To ensure meaningful participation of the family and accessibility to appropriate services, educators and service providers should offer sufficient information about educational options for children, while examining socioeconomic and political contexts. For instance, insurance coverage of autism-related services outside of schools, such as applied behavior analysis (ABA) therapy, varies by state; families and educators should acknowledge the distribution of local resources. In particular, as those intervention services, including ABA services, might impose a financial burden on families, educators should be able to mediate families' access to the effective services, when socioeconomic status is varied (Tincani, et al., 2009).

Given evidence that many CLD parents often exhibit low involvement in children's education due to several different factors (e.g., different level of expectation for children's education, different understanding of disabilities and the school system, different level of

education, high poverty; Tincani et al., 2009), having diverse channels of communication with the family can be useful for educators to encourage CLD parents' involvement, by individualizing educational services and evaluating the effectiveness of the services. When navigating educational service options, families can reach out to community members. Systemic supports for educators and families are critical to provide ecologically valid services. Administrators should regularly monitor whether their educational systems meet the student's individual needs and improve their programs to fit the behavioral and communicative goals of the student. These collaborative efforts throughout the educational system are beneficial for implementing ecologically meaningful practices.

While the notion of individualized intervention practice is widely accepted, culturally responsive models of intervention for students with ASD from non-dominant cultural groups are still scarce. We suggest that adding cultural components in our practices and research, such as conceptualizing individual culture, having an ecological approach, and enhancing social validity measures in research, will make positive changes in our students' educational trajectories. More work is needed in this area to improve the quality of education services that CLD students with ASD receive and their educational outcomes.

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