

English as a Medium of Language Intervention for Bilingual Children with Autism Spectrum Disorders in a Multilingual Context – A Review

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Abstract

Children with Autism Spectrum Disorders (ASD) receive language intervention, often in English, a language different from their mother tongue in a multilingual, multiracial, and multicultural country like Singapore, irrespective of the type of service delivery model. In majority of the instances, parents who are non-native English speakers choose to expose their children to English as the primary language which is different from their mother tongue due to various reasons. The reason could be attributed to the availability of services such as early intervention, special school, therapy, etc. being primarily provided in English. This is consequent to the professionals and teachers using English as a common language across the services for better communication and social interaction, for children with ASD. On some occasions, the therapists and /or teachers may not speak the native language of the child e.g. Mandarin, Malay, Tamil and others. This review enumerates the studies revealing the effects of bilingual exposure in language and vocabulary development in children with Autism Spectrum Disorders in various multilingual, multiracial, and multicultural countries.

Keywords: Autism Spectrum Disorders, Multilingual Context, English as Medium of Language Intervention, Singapore.

Introduction

Bilinguals are often broadly defined as individuals or groups of people who obtain the knowledge and use of more than one language (Bloomfield, 1933). However, bilingualism is a complex psychological and socio-cultural linguistic behavior and has multi-dimensional aspects. As is often believed, bilinguals could be defined as individuals who have “native-like control of two

languages” (Bloomfield, 1933). Haugen (1953) defined bilinguals as individuals who are fluent in one language but who “can produce complete meaningful utterances in the other language”. This definition allows even early-stage L2 learners to be classified as bilinguals. Many researchers, viz. Hakuta, 1986; MacNamara, 1967; Mohanty and Perregaux, 1997; Valdés and Figueroa, 1994, (cited in Bhatia, T.K & Ritchie, W.C. 2008), employed this broader view of bilinguals and include in their definition of bilinguals those individuals who have various degrees of proficiency in both languages.

Bilingualism in Typically Developing Children

There are cognitive benefits in learning two languages. According to brain-based research, bilingual children have greater focus and develop their concentration skills to a greater extent than their monolingual peers (Bialystok, Craik & Luk, 2012). Such children are able to maintain focus on a task and achieve their goals (Bialystok & Majumder, 1998). This is one of several cognitive benefits that would help children become more successful in school settings (Best, Miller & Naglieiri, 2011).

In addition, brain-based research increasingly shows the importance of learning Mother Tongue Language (MTL) at a young age. A first language (also native language, mother tongue, or L1) is the language(s) a person has learned from birth or within the critical period, or that a person speaks the best and so is often the basis for sociolinguistic identity. In some countries, the terms *native language* or *mother tongue* refer to the language of one's ethnic group rather than one's first language (Bloomfield, 2009). According to recent research findings (Kuhl, 2011), children who learn both English Language (EL) and MTL before the age of eight have a greater chance at acquiring both languages at a higher level than their peers who start later. This is also based on several factors such as family influences and support in the child's MTL learning (Ren & Hu, 2013, Dixon, Wu & Daraghmeh, 2012, Abu Bakar, 2005, <http://www.moe.gov.sg/education/preschool>), Li & Rao, 2005), how often MTL is heard and used, and how much importance is given to the use of MTL (Dixon, Wu & Daraghmeh, 2012).

Furthermore, a study conducted by Galambos in 1982 found that El Salvadoran children proficient in English and Spanish demonstrated a stronger syntactic orientation when judging grammatically correct and incorrect sentences in both languages. There have been other studies in last two decades, showing the influence of bilingualism on word awareness leading to better reading skills (Bialystok & Herman, 1999; Bruck & Genesee, 1993). Yellend, et al (1993), observed significant benefits in children whose contact with a second language was restricted indicating that benefits were not just restricted to balanced bilinguals.

Bilingualism and Autism

Thordardottir (2006) stated that, “the core features of ASD include impairments in social communication . . .” which further highlighted the importance that communication serves a large role in the outcome of someone's quality of life. Through communication we express our wants, desires and basic needs. Notredaeme & Hutzelmeyer, in 2010, (as cited in Taylor, F. 2012) found that, when studying individuals with pervasive developmental disorders, the most prominent concern of parents

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Sunitha Sendhilnathan and Dr. Shyamala, K. Chengappa

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which causes them to seek professional assistance is communication impairments, followed by social interaction behaviors. The prominent role of communication in a person's life reinforces the critical need to address deficits and research outside influential factors.

Hambly & Fombonne (2012) compared the social and language abilities of 75 young children with ASD who were categorized into three groups: monolingually exposed, bilingually exposed before 12 months of age, and bilingually exposed after 12 months of age. The abilities that were assessed across the three groups included social responsiveness, initiating of pointing, response to pointing, attention to voice, total conceptual vocabulary, words in dominant and second languages, age of first words, and age of first phrases. They found that bilingually exposed children with ASD did not show additional delays in these areas compared to monolingually exposed subjects. They also did not find a significant difference in these skills between bilingual children who grew up in simultaneous versus sequential bilingual environments. Approximately 60% of the bilingually exposed children were observed to be acquiring vocabulary in two languages. The authors concluded that given these findings, caregivers should be encouraged from continuing to speak to their children bilingually.

Petersen, Marinova-Todd, & Mirenda (2012) compared the language abilities of 14 monolingual, English-speaking children with ASD with those of 14 age-matched bilingual English/Chinese-speaking children with ASD between the ages of 43 and 73 months. They compared the two groups' vocabulary skills and general language skills using bilingual versions of the Peabody Picture Vocabulary Test—III (PPVT—III), the MacArthur-Bates Communicative Development Inventories (CDI), and the Preschool Language Scale, Third Edition. They found that bilingual children had larger total production vocabularies and no significant differences in the size of their conceptual vocabulary or English vocabulary compared to the monolingual subjects. They also found the two groups to be equivalent in their overall language scores. They concluded that the findings suggested that children with ASD have the potential to be bilingual without experiencing disadvantages in their language development.

The findings of the two studies above were consistent with a study by Ohashi, Mirenda, Todd, Hambly, Fombonne, Szatmari, Bryson, Roberts, Smith, Vaillancourt, Volden, Waddell, & Zwaigenbaum (2012), which compared the communication abilities of a group of bilingually exposed young children with ASD (ages 24–52 months) with a group of monolingually exposed children with ASD who were matched by age and nonverbal IQ scores. The children were compared by the severity of their autism-related impairments in communication, the age of their first words, and the age of their first phrases, their receptive and expressive language scores, and their functional communication scores. The researchers found no statistically significant differences between the two groups of children on any of the measures used.

The vocabularies of English-Chinese bilingual children with ASD and monolingual children with ASD were compared in a study conducted by Petersen, Marinova-Todd, & Mirenda in 2011.

The authors concluded that bilingualism did not have a negative effect on the children's language development, as both groups had similar vocabulary scores.

Kay-Raining Bird, Lamond, & Holden in 2012 conducted a survey of bilingualism in autism spectrum disorders where the participants were 49 parents or guardians of children with ASD who belonged to bilingual family. The participants reported that living in a bilingual community and the need to communicate with various people in a variety of venues supported a bilingual choice. However, parents reported concerns around choosing bilingualism for their children with ASD, such as lack of services and supports and concerns about whether their children would be able to learn two languages.

Bilingualism in Singapore

As a young and vibrant nation with a multicultural population, Singapore is home for close to 5.8 million people from four major ethnic groups-Chinese, Malays, Tamils and other minority groups such as Eurasians, Jews, Portuguese and more. The major languages spoken here are English, Mandarin, Malay, Tamil and various Chinese dialects, for example, Hokkien, Teochew, Cantonese, Hainanese. According to Brebner (2001), local English can be found in 2 forms - Singapore Colloquial English (SCE), commonly known as "Singlish" and Singapore Standard English (SSE) which is similar to Standard English elsewhere in the world. Major differences lie in syntax, phonology and prosody (Gupta 1994, Brebner 2001). Hence the linguistic and unique cultural backdrop forms a challenging and fertile learning ground for Speech and Language Therapists.

Singapore has a policy of bilingualism, where students learn in English but are taught the language of their ethnicity, referred to as their "mother tongue". The mother tongue is seen as a way to preserve unique cultural values in the multicultural society, although their usage is decreasing in the home as English becomes more predominant. The majority of Singaporeans are bilingual in English and one of the other three official languages (Mandarin, Malay and Tamil).

In Singapore, among the many cases of developmental disorders seen, the rising number of reported autism cases is dramatic. Although there are no official reports on the prevalence rate of autism in Singapore, a study conducted (Ho, 2007) by the Child Development Units of two main hospitals (National University Hospital and KK Women's and Children's Hospital) reported an increase in the number of case referrals for autism from 361 to 508 per year (about 30% of the referred caseload). Using the international prevalence rates of 60/10,000 to apply across cultures, it is estimated that there are probably 30,000 individuals with autism in Singapore's population of 5.8 million. With a school-age population of over half a million, it may be postulated that there are about 3,600 children under the age of 19 diagnosed with autism.

Language Intervention in Bilingual and Monolingual Children with ASD

Children with autism, in Singapore, receive language intervention through the government funded early intervention programs (between few months old and 6;11 years), or from a private agency. However, the therapy is usually limited both in frequency and duration compared to

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Sunitha Sendhilnathan and Dr. Shyamala, K. Chengappa

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intensive applied behavior analysis types of intervention (which usually include between 20 to 40 hours per week). Thus, it has been suggested by several researchers that current practice in speech-language and early developmental intervention should be supplemented by in-home intervention to currently available clinic-based programs (Ozonoff & Cathcart, 1998; Seung, Ashwell, Elder, & Valcante, 2006). In a study conducted by Koegel, Bimbela, & Schreibman in 1996 (cited in Ingersoll Ingersoll, B. & Dvortcsak, A, 2006) revealed similar findings that early intervention at the centre should be supplemented by generalization of functional skills in child's natural settings. Training the parents or family members to implement intervention in a natural living environment (i.e., the home) can be a tremendously efficient way to supplement the clinic-based intervention.

Providing speech and language therapy in the child's mother tongue poses a challenge for the Speech Therapists. The local training program in speech therapy was started only in 2007 with an intake on twenty students for every two years. This intake has been increased to thirty students from 2015. Consequent to this scenario, there has been an influx of foreign trained speech therapists or foreign speech therapists. As a result, use of English as a medium for language intervention for children with Autism Spectrum Disorders has been seen widely in the Community Early Intervention, hospital, and private settings. The children receiving the therapy services would also be exposed to their mother tongue at home – Mandarin, Malay or Tamil. Speech Therapists are often posed with the challenging question by the parents as “which language should we use at home with the child?” during the Individualized Education Plan (IEP) sharing meetings. On many such occasions, therapists have to be mindful in responding, considering the family's preference, sensitivity to language use, and sometimes, the recommendations they might have had from the developmental pediatricians etc.

Seung, Siddiqi, & Elder in 2006 conducted a longitudinal single-case study on a child who was initially diagnosed with language delay at age 3 and subsequently diagnosed with autism at age 3 years 6 months. This case study followed the child for a period of 24 months and evaluated the efficacy of a unique Korean-English bilingual speech-language intervention. Speech-language intervention was provided twice weekly in his primary language, Korean, for the first 12 months by a Korean-English bilingual speech-language clinician. During the next 6 months, the intervention was gradually introduced in English; and by the final 6 months, the intervention was provided almost entirely in English. This study also incorporated information regarding parent interventions that was implemented by the parents at home. The child in this report made notable gains in expressive and receptive language development in both languages over the study period as well as decreases in aberrant behaviors. At the 24-month follow-up, he was able to respond to testing that was done completely in English. The results of this study supported the practice of providing services in the primary language when English is not the language used at home to establish linguistic foundation of the primary language. As the child makes gains in the primary language, a gradual transition can be made to intervention through English. Results of this study have important implications for future "research and clinical decision-making for assisting families of children from a variety of cultural and ethnic backgrounds.

Some investigators have raised questions about the prevalence of autism and differences in perception of autism and developmental disabilities by families in various ethnic groups (Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004). 'When children with autism from a bilingual family receive speech-language intervention, it also raises the issue of the language that should be used for the intervention; whether the intervention should be in English or in the primary language. Literature suggests an approach of "extending" language by allowing the child to use both primary language and English, rather than "limiting" intervention to only English (Gutierrez-Clellenm, 1999).

Finsel (2012) surveyed caregivers regarding their perceptions and experiences of raising a child on the autism spectrum in a bilingual language environment. The caregivers shared that they often found themselves receiving conflicting advice from professionals about whether or not to incorporate bilingualism into the life of their child with Autism Spectrum Disorders (ASD); they expressed a need for more information and support. Four common themes resonating through parent responses in this study included feelings of (1) confusion and (2) hesitation, and experiences with (3) inconsistent advice or (4) their child with ASD not having the language capabilities to speak an additional language. The concern of parents reinforced the pertinent need for continued research for children with ASD who are in bilingual (and multilingual) language environments.

Drysdale et al, in 2015 conducted a review of eight studies identified as addressing bilingual language development in 182 children with ASD and issues/ perceptions of bilingualism in 62 parents of children with ASD. The results of the studies were summarized in terms of participants, languages spoken and communication level, assessment/ intervention, instruments, main findings, and evidence of bilingual language development. Findings suggested bilingualism does not have a negative impact on language development for children with ASD, but the majority of parents reported that practitioners predominantly advised against providing a bilingual environment.

Reetzke et al, 2015 examined the association of bilingual exposure with structural and pragmatic language development in Chinese children with autism spectrum disorders (ASDs). The parents of 54 children with ASD exposed to 1 (n= 31) or 2 (n= 23) Chinese languages completed (a) a questionnaire to evaluate their child's competence in structural language and pragmatic ability in their dominant language and (b) a questionnaire to assess their child's social functioning. In addition, parents completed thorough interviews regarding the linguistic environment of their children. The result revealed that bilingually exposed children with ASD did not demonstrate significantly different performance on any standard measure relative to their monolingual peers. The findings suggest that bilingual language exposure is not associated with additional challenges for the development of the dominant language in children with ASD.

Recently, in 2018, a study conducted by Gonzalez-Barrero & Nadig, examined the impact of amount of language exposure on vocabulary and morphological skills in school-aged children with ASD who did not have intellectual disability. Forty-seven typically developing children and 30 children with ASD with varying exposure to French participated in the study. The findings of the

study revealed that the current amount of language exposure was the strongest predictor of language skills in both groups of children. Further, the study indicated that many children with ASD are capable of acquiring two languages when provided with adequate language exposure, supporting Chengappa (2009) and Kohnert (2010) studies, who favoured bilingual exposure in children with language delays.

Discussion

Language development is a complex, dynamic process influenced by the child's age, language exposure, and social interaction (Fierro-Coba & Chan, 2001). Taylor & Leonard (1998) discussed the fact that although acquisition of language is universal among the children in the world, the precise developmental sequence is influenced by the socio-cultural context in which language is acquired. Emphasis is placed on the importance of studying different cultural groups and language to arrive at a better understanding of language development. Reports of uneven performance across languages suggest an unequal distribution of lexical and grammatical knowledge across languages, both receptively and expressively (Bedore, Fiestas, Peña, & Nagy, 2006). A study by Cobo-Lewis, Pearson, Eilers, & Umbel, in 2002, (cited in Pearson & Cobo-Lewis, 2007) also indicated vocabulary differences between bilingual and monolingual children. As studied by Peña & Bedore, 2009 (cited in Schwartz, R.G. 2017), generally, bilinguals do not receive equal amounts of input in each language across age groups and developmental stages. Bilingual language assessment is complex and involves challenges such as (a) accounting for distributed skills across languages, (b) variable cross-language associations at different developmental stages, and (c) individual variation in language performance (Kohnert, 2010).

Bilingual children come from a variety of environments, ethnicities, and backgrounds. They vary (i) in the age at which they become bilingual, (ii) in the settings in which they use each of their languages, (iii) in their ability to which they must rely on these languages and for which purposes, and (iv) in the extent to which they could learn both languages. It is important to consider these factors carefully to determine the most appropriate language for intervention on a case-by-case basis. As such they come with a set of characteristics, personalities, abilities, strengths, preferences, areas of learning needs, and improvement that have probably nothing to do with whether they could be exposed to one language or two. Besides, the children with ASD lack in cognitive flexibility i.e., ability to switch thinking about one concept to another, which is yet to be explored. This might also determine whether the children with ASD would be able to understand and use two languages functionally.

In Singapore context, majority of the times, the children with ASD are taken care of by the grandparents, who are more proficient in native language and / or foreign domestic helpers who does not speak the child's native language and sometimes only functional English. These factors also have to be carefully considered when supporting the family on decision-making of the language exposures at home.

Further, Summers et al (2017) conducted a study to find the effects of a bilingual and monolingual treatment condition on the language skills of two bilingual children with ASD (ages 3 and 5) using an alternating treatment, single-subject design. The two treatment conditions, a monolingual English condition and a bilingual English/Spanish condition, were alternated across 14 treatment sessions. The outcome showed that both participants improved in each condition while the treatment conditions were highly effective for one participant and minimally effective for the other participant. Within each participant, effect sizes were similar across the two treatment conditions and there were differences in the maintenance patterns of the two participants. These results support the available evidence that bilingual treatments do not have negative effects on bilingual children with ASD.

Beauchamp and MacLeod (2017) reviewed researches on (a) bilingualism in neurotypical children and in children with development disabilities and language disorders, (b) the language development of bilingual children with ASD, and (c) the implications of recommending that these children be brought up as monolinguals when they live in bilingual contexts. The outcome of their review indicated that children with ASD can become bilingual, and bilingualism does not lead to further language delays. The review further implied that researches have shown detrimental effects for both the child and their family when children with ASD from bilingual contexts are raised as monolinguals. Hence, there are evidences that supports the recommendation that children with ASD from bilingual contexts be raised bilingually.

Conclusion

In general, language intervention strategies such as targeting developmentally appropriate and functional communication and interaction skills, using meaningful daily routines and activities that are pragmatically and culturally appropriate should be considered in a bilingual context just as in monolingual. This would also allow greater consistency and continuity in the learning opportunities for children to make maximal use of all of the resources that they bring to the task. This would also accelerate and promote a sense of pride in their languages and cultures and in their skill as bilingual speakers, besides providing cognitive advantage if ascertained in this clinical population.

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