

Chapter 6

Aided Augmentative and Alternative Communication (AAC) Systems for Individuals With Autism Spectrum Disorders

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ABSTRACT

Autism spectrum disorders (ASDs) are complex neuro-developmental disorders. They demonstrate pervasive deficits in social communication, restricted and repetitive behaviors, cognitive impairments, etc. Most often individuals with ASDs are often considered “non-verbal” and they require comprehensive intervention to improve their functional communication skills. Augmentative and alternative communication (AAC) was always viewed as a “last resort” for people with complex communication needs when all other interventions failed to achieve the potential benefit. However, with growing evidence, AAC has been implemented even in children with communication difficulties to augment spoken language development. Thus, this chapter aims to discuss the characteristics of ASD, to describe the need for AAC intervention in children with ASD, challenges and practices of AAC in ASD, to review implementation of aided AAC systems for children with ASD in different contexts, to indicate the gaps and future prospective in AAC intervention for people with ASDs.

INTRODUCTION

Autism Spectrum Disorders (ASD) is a neurodevelopmental disorder that begins in early childhood/developmental period. It is a complex condition marked by a wide range of symptoms and varying degree of severity. ASD is characterised by persistent impairments in social interaction, communica-

DOI: 10.4018/978-1-7998-3069-6.ch006

tion, and restricted, repetitive, and stereotyped patterns of behaviours, interests, or activities (American Psychiatric Association [APA], 2013). Autism Spectrum Disorders (ASD) are also referred to as Pervasive Developmental Disorders (PDD) that includes a spectrum of disorders such as Autism, Asperger's syndrome, Rett's syndrome, Childhood Disintegrative Disorder (CDD), and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NoS). As per the reports of Autism Society of America, the rate of incidence of autism is increasing 10-17% per year in the US and the prevalence of autism is expected to reach 4 million people in the next decade in the United States. Also, autism is found to be four times more prevalent in males than girls in the US. However, in India, the incidence rate of autism is found to be approximately 1 in 11,914 people and prevalence rate of autism is found to be 1 in 500 people (Centre for Disease Control).

Characteristics of Autism Spectrum Disorders (ASDs)

There is evidence to suggest that the diagnostic features of ASD are evident in very young children as early as 2 years of life. Studies have indicated that following are some of the early indicators of ASD:

- 1) Impairment in the children's language development and social relatedness noticed as early as 14 months of age (Chawarska, Paul, Klin, Hannigen, Dichtel, & Volkmar, 2007);
- 2) Display of significantly lesser number of joint attention and communication behaviours at 1 year of age compared to their age equivalent typically developing peers (Osterling & Dawson, 1994; Werner & Dawson, 2005);
- 3) Demonstrates impaired eye-contact, decreased activity level, and passivity by 12 months of age (Zwaigenbaum, Bryson, Rogers, Roberts, Brian & Szatmari, 2005);
- 4) Subtle differences in sensory-motor domains and social behavior (Baranek, 1999) as well as differences in the use of communicative gestures (Watson, Crais, Baranek, Dykstra, Wilson, Hammer, & Woods, 2013) observed by 9 to 12 months of age;
- 5) A decline from normative levels in eye fixation from 2 to 6 months of age not observed in infants who did not develop autism (Jones & Klin, 2013).

As per DSM – V criteria, children with ASD are characterized by

- A. Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays and as manifested by the following symptoms, currently or by history:
 - 1) Deficits in social-emotional reciprocity, ranging for example, from abnormal social approach and failure of normal back and forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
 - 2) Deficits in nonverbal communicative behaviours used for social interactions ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
 - 3) Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behaviour to suit various social context; to difficulties in sharing imaginative play or in making friends; to absence of interests in peers.

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