

## Review Article

## Oral Health related treatment needs among Autistic Children: A Review

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## ABSTRACT

Autism is a neurodevelopment disorder allied with atypical brain constitution and function due to which communication, speech, behaviour, and cognitive functions weaken. Autism patients have many emotional, physical, health-related issues and oral health is one of them. As oral health is a wide range reflection of our general health, thus to achieve a good overall health focus on oral health is equally important. Every child has a unique characteristic, thus their emotional, physical and health needs are different. Therefore, the aim of this paper is to review and discuss the literature related to oral health characteristics and treatment needs of children with Autism Spectrum Disorder to facilitate the provision of care by dental practitioners.

**Keywords:** Autism, oral health, dental caries, periodontal health

Autism is a neurodevelopment disorder of brain which affects social interaction, verbal and non-verbal communication and rhythmic behavior. All signs of autism usually appear before a child is three years old [1]. Initially, autism comes under one of the pervasive developmental disorders. The Pervasive developmental disorders are the disturbances of the brain development with deflation in genetics which includes Autistic, Aspergers, childhood disintegrative, Retts, and pervasive developmental disorders. According to the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders in May 2013, all Autism related disorders merged under Autism Spectrum Disorder (ASD) or Autism [2].

The American Child Psychiatrist Leo Kanner was the first person who explained Autism in 1943. All disorders related to autism are known as Kanner's autism, childhood autism, or early infantile autism [3]. The typical triad of autism involves impairments – in social interaction, communication and the use of language associated with

limited thoughts and rhythmic stereotyped patterns of behavior [4]. The behavior disturbances of autism include self-injurious destructive behavior, hyperactivity and panic-stricken cries [5]. Due to these tribulations children suffering from ASD lack of manual dexterity that requires for various day to day activities including brushing. As oral health is a wide range reflection of our general health, thus to achieve a good overall health focus on oral health is equally important. Every child has a unique characteristic, thus their emotional, physical and health needs are different. Therefore, the aim of this paper is to review and discuss the literature related to oral health characteristics and treatment needs of children with Autism Spectrum Disorder to facilitate the provision of care by dental practitioners.

## EPIDEMIOLOGY

Mayada Elsabbagh et al conducted a systematic review of an epidemiological survey of autistic disorder in 2011, according to this the Global prevalence estimated for

Autism disorder since the year 2000 is a median of 17/10,000, in 2002 the prevalence estimate was 7 in 10000 and in 2014 it has been estimated to be 1 in 68. Autism is four times more common in boys than in girl [6]. In India, the prevalence of autism is about 1 in 500 or 0.20 %. The incidence rate of autism in India is about approximately 1 in 90,666 or 11,914 people. The rate of incidence extrapolations in India is 11,914 per year, 250 per month, 57 per week, 8 per day, 1.4 per hour [7]. Various twin and family studies disclosed that some people are more genetically incline towards autism. Identical twin studies showed that “if one twin has autism there is a 90% chance to having autism in other twins also. A family having an autistic child has more risk or 5% chance of having a child with autism [8].

### ETIOLOGY

The exact etiology of ASD remains unclear however it appears due to the complex interaction between genetic and environmental, parental and psychological factors [9]. Genetic mutation/or deletion, viral infections, encephalitis following vaccination, advanced parental age, fetal exposure to valproate, pre-mature birth and toxic environment are the possible risk factors for autism [10]. Advancement in medical technology leads to a decline in neonatal deaths and higher survival rates but increase the rate of children diagnosed with autism.

### DIAGNOSIS OF AUTISM

There are no specific genetic, medical, or laboratory tests available to confirm the diagnosis of autism thus screening is quite difficult. Autism can be identified only by the presence of classical triad which includes in social interaction, communication and the use of language associated with limited thoughts and rhythmic stereotyped patterns of behavior. The most conspicuous feature in the diagnosis is the impaired of social interaction where children may refuse to accept cuddling and avoid making friends. A total absence of development of spoken language and lack of interest in playing is the classical sign of autism in preschool children [11].

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) [3] the specific criteria for diagnosing Autism which includes:

#### *A. Qualitative impairment in reciprocal social interaction*

1. Lack of attentiveness in existence or feelings of others.
2. No or atypical seeking of console at times of distress.
3. No or impaired imitation.
4. No or abnormal social play.
5. Gross impairment in the ability to make peer friendships.

#### *B. Qualitative impairment in communication and imagination*

1. No mode of communication.
2. Markedly abnormal nonverbal communication.
3. The absence of imaginative activity.
4. Marked abnormalities in the production of speech.
5. Noticeable irregularities in the form of content of speech.
6. Obvious destruction in the ability to initiate or sustain a conversation, despite adequate speech.

#### *C. Markedly restricted repertoire of activities and interests*

1. Stereotyped body movements.
2. Persistent preoccupation with parts of objects or attachment to unusual objects.
3. Marked distress over changes in trivial aspects of the environment.
4. Irrational persistence on following routines in precise detail.
5. Clearly limited range of interests [2].

### DENTAL CONSIDERATION IN AUTISTIC CHILDREN

Children diagnosed with autism have various medical and oral health problems due to neurodevelopment disturbances. Poor dietary habits decreased or increased salivation due to medications; damaging intraoral habits contribute an intricacy to maintain good oral hygiene which increases the risk of oral health problems including dental caries, periodontal problems, delayed tooth eruption, bruxism, and trauma.

The risks of traumatic injuries are higher among ASD children due to malocclusion. A study by Naidoo M et al found 85.2% prevalence of dental caries in autism children [12]. Similarly, a study by Al-Maweri SA et al showed that children with autism revealed a higher proportion of fistulae (9.5% vs. 2.4%), ulcerative lesions (7.1% vs. 1.2%), gingival hyperplasia (4.8% vs. 0.0%), and cheilitis (4.8% vs. 2.4%). The mean dmft score was significantly higher in children with autism [13].

## BARRIERS IN ORAL HEALTH

Oral health and dental treatment needs ranked most profound among unmet health care needs of special children [14]. For cater to the comprehensive dental care for these group of children hurdles should be identified. Various studies conducted to identify barriers to cater the oral health among autistic patients. According to Thomas NA et al 83.9% of the respondents reported difficulty in managing the behavior of the children with ASD in dental clinics. Other barriers to cater to oral health are the child's inability to communicate and the dentist's lack of knowledge and training with ASD [15]. Lai et al reported that behavioral disturbances are the reason due to which dentist refuse to treat children with ASD. Due to these behavioral problems regular periodic dental visits are not possible which leads subsequently longer gaps between dental appointments [16, 17]. Literature also tales that dentists experience to play a considerable barrier to endow with quality dental care with special care needs children. Literature quotes that lack of knowledge and training (12.9%) in a dentist is a solid barrier to cater to oral health for ASD [16]. The reason for these obstacles is a lack of training or exposure with children having disabilities during the prescribed education of the dentist. As autism disorder associated with social interaction that makes parents or caregivers difficult to teach oral hygiene practices and gets the children in dental clinics. Because brushing and flossing is not usually a part of their daily routine, after some time they use to reject it due to their dislike to change [18]. Therefore, assessment of barriers to cater to oral health in ASD is very essential, after this we can cater a quality of dental care to them.

## CONCLUSION

It concludes that children with ASD have a higher prevalence of dental diseases which constitutes poor oral hygiene. In order to this oral health education and promotion programs for parents, caretakers should be incorporated into special care schools. There is an extreme need for the enclosure of formal training in dental curriculum related to managing autistic patients. Various continuing education courses (CDE) should be conducted regularly to update the knowledge in this field would improve dental students' competence in working with special needs children.

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