Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/17958
DOI URL: http://dx.doi.org/10.21474/IJAR01/17958

RESEARCH ARTICLE

CHALLENGES FACED IN DENTAL CLINIC WHILE TREATING AUTISTIC PATIENTS

Dr. Ishani Sharma[1], Dr. Amrita Sujlana[2], Dr. Sukhleen Kour[3] and Dr. Sukesh Sharma[4]

1. Ex Senior Lecturer, Deptt. Of Pedodontics, BRS Dental College and Hospital, Sultanpur, Barwala. Private Practitioner, Saatvik Dental Care, Reasi, Jammu and Kashmir.
2. Private Practitioner.
3. Private Practitioner.
4. Private Practitioner, Saatvik Dental Care, Reasi, Jammu and Kashmir.

Manuscript Info

Manuscript History
Received: 05 October 2023
Final Accepted: 09 November 2023
Published: December 2023

Key words:-
Autism Spectrum Disorders, Dental Management, Home, Healthcare, Behavior, Problems

Abstract

Background: Managing home and clinical healthcare is challenging for children with Autism spectrum disorders. Therefore, dental clinicians must be aware of the various challenges faced while treating children falling in spectrum for providing effective and efficient oral healthcare.

Introduction:-

Autism spectrum disorders (ASDs) is the term used for a group of disorders referred to by the International Classification of Diseases, 10th edition (ICD-10) as pervasive developmental disorders, characterized by severe impairments in processes of socialization, communication and learning, presenting repetitive and solitary activities (WHO 1992).[1]The diagnostic and statistical manual of mental disorders, fifth edition (DSM-5)[2] in 2013 described ASD as an umbrella term for Autistic disorder, PDD-NOS (pervasive developmental disorders – not otherwise specified), CDD (childhood disintegrative disorder) and Asperger's disorder.[3]

An individual affected with ASD has dental needs similar to those of any other person, which are often not being met. Although parents reported that children with ASD and without ASD had similar occurrences of carious lesions, broken teeth needing repair, pain, misaligned teeth, hygiene, discoloration, enamel problems, and bruxism, they were more likely to report that their child with ASD had teeth that were in fair to poor condition.

Dental treatment for the autistic child is difficult, complicated and might be stressful to the children and their parents, as well as to the dentist. It is thereby imperative that a family centered approach based on parental preferences and concerns, the child's challenging behavior, and related co-morbidities be applied so as to foster mutual trust and provide close interactions between patients, parents and dentists to make the best treatment decisions. In the following chapters the etiology, early diagnosis, dental and medical management of ASD will be elaborated upon.

Challenges faced by the dentist:

ASDs have profound effect on the management of the patients in dental clinic. Dental professionals who treat patients with ASDs must be aware of their special health care needs;

Corresponding Author:- Dr. Ishani Sharma
Address:- Ex Senior Lecturer, Deptt. Of Pedodontics, BRS Dental College and Hospital, Sultanpur, Barwala. Private Practitioner, Saatvik Dental Care, Reasi, Jammu and Kashmir.

1. Problems with communication.
2. Impairement of social interaction.
3. Aversion to change, repetitive/ stereotypical behaviors.
4. Sensory processing difficulties.
5. Limited Intellectual ability.

Problems with communication;

Problems with communication appear in many ways among these patients as 40 % of children with ASD are reported to be completely nonverbal. Some of these children not only lack the desire to communicate, but also they do not make any compensatory efforts such as using gestures. Some children and adults with ASD may have abilities to speak, but they may not be functional or fluent.

(Johnson et al., 2007)[4] Although lack of speech, scripted speech, parroting without communicative intent, and pop-up and giant words are common classic presentations, earlier pre-speech deficits often exist that, if detected, could facilitate earlier diagnosis. These deficits include:

1. lack of appropriate gaze;
2. lack of warm, joyful expressions with gaze;
3. lack of the alternating to-and-fro pattern of vocalizations between infant and parent that usually occurs at approximately 6 months of age (ie, infants with ASDs usually continue vocalizing without regard for the parent's speech);
4. lack of recognition of mother's (or father's or consistent caregiver's) voice;
5. disregard for vocalizations (ie, lack of response to name), yet keen awareness for environmental sounds;
6. delayed onset of babbling past 9 months of age;
7. decreased or absent use of pre-speech gestures (waving, pointing, showing);
8. lack of expressions such as "oh oh" or "huh";
9. lack of interest or response of any kind to neutral statements (eg, "Oh no, it's raining again!")

Johnson CP et al., (2007)[4] found that these communication issues can affect oral health care in and out of the dental office in following ways;

At home,

1. Lack of verbal communication and understanding between the parent/guardian and the patient with ASD can lead to problems with oral self-care such as tooth-brushing and flossing.
2. This lack of communication skills can become a serious problem when the patients experience oral pain, because they might be unable to communicate the pain to their caregiver.

In the dental office,

1. Lack of communication between the patient and dentist could be potentially dangerous during procedures when the patient feels pain or is scared and cannot communicate these sensations, but might act out as a consequence.
2. Dental care providers therefore need to be aware that the use of special behavior management strategies such as the use of visual communication means and the use of rewards and behavior-shaping strategies might be needed.
3. It is ideal to ask the parent/caregiver to bring a reward to ensure that it is appropriate. This also enhances the trust relationship, no matter how much the patient may have "misbehaved" or been uncooperative. Be sure to reward immediately following appropriate behavior, even if the behavior is only a handshake that was given when asked. ASD patients enjoy receiving rewards and will feel comfortable in seeing the dental professional at a future date if the first experience has been positive for him or her. (building brigdes, 2011)[5]

The parent-report Vineland Adaptive Behavior Scales II Expressive Language subtest (VABS-II; Sparrow et al. 2005) was used to assess the child's communication competence. The Expressive Communication subscale discriminates among children with different levels of ASD severity and has served as a brief measure of expressive language in autism studies. (Cermak et al., 2015)[6]

Impairement of social interaction

Individuals with ASDs demonstrate issues with social interactions and have difficulty in recognizing others feelings and thoughts, which are different from their own. They may not establish eye contact, or may not pay attention to

others or seek out others' attention. Because of these deficits, people with ASDs are less likely to develop social relationships, and if they do, the relationships are likely to revolve around the person with ASD's interests.

(Green D, 2006)[7] The dentist should control stimuli that may cause problems. For example, waiting is a very difficult skill for those with ASD. Waiting can increase anxiety, which can lead to feelings of anger and unwillingness to cooperate. ASD patients are literal thinkers; if their appointment is at 9:00, they expect to be seen at 9:00. To prevent late seating, it may be appropriate to schedule ASD patients as the first morning or first afternoon appointment.

(Weil TN 2010)[8] In a dental setting, impairment of social interactions would clearly hinder developing a patient-dentist relationship in following ways;

1. These patients may not make eye contact with the dentist or respond when the dentist tries to talk to them or explains a procedure.
2. They may even feel uncomfortable with another person in such close proximity to themselves.
3. They have difficulty in understanding and following instructions in a dental clinic.
4. They also show extreme reactions to invasion of personal space and extreme resistance to being "hurried.

These difficulties may challenge dental care providers when providing care for a patient with ASD.

Aversion to change, repetitive/ stereotypical behaviours

(Johnson et al., 2007)[4] Children with ASDs can demonstrate atypical behaviors in a variety of areas including peculiar mannerisms, unusual attachments to objects, obsessions, compulsions, self-injuriou behaviors, and stereotypies. Stereotypies are repetitive, nonfunctional, atypical behaviors such as hand flapping, finger movements, rocking, or twirling. Although most stereotypies are harmless, they are problematic in that they may prevent the child from accomplishing a task or learning new skills. Although stereotypies are distinctive and obvious, they are not specific to children with ASDs, because many children with profound MR and/or severe sensory deficits also demonstrate stereotypies. Even typically developing toddlers, especially before the onset of fluent language, may flap their arms briefly when they are excited or frustrated. Stereotypies associated with ASDs often do not appear until after 3 years of age and commonly manifest as finger flicking, unusual eye gazing, habitual toe walking, and/or persistent sniffing and licking of nonfood items. Patients with ASD may have difficulty to change their routine and may repeat actions over and over again. They might, for example, limit the types of food they eat, beverages they drink, or behaviors in which they engage. This aversion to change can cause problems on their first visit to dental office and during follow ups because;

1. The dental procedures might change and the change may be unbearable for a patient with ASD. Changes in the environment and daily schedule often elicit behavioural resistance and tantrums.
2. Patients with ASD may also have difficulties with changing sounds and with various smells during their dental treatment.

Providing dental care for patients with ASD can therefore be challenging for dental care providers.

Sensory processing difficulties

As early as 1943, Kanner[9] described individuals with fear of noises from machines, who repeatedly watched bowling pins fall, who sought out movement on swings, and who mouthed objects and flicked lights. Bergman and Escalona[10] described in 1949 the first sensory-based hypothesis of autism whereby they believed children were overly sensitive and therefore developed defenses to the social world. The term sensory processing (Lane SJ et al, 2000)[11] is often used interchangeably with term sensory integration. Sensory integration (Ayres AJ, 1979)[12] refers to the way the nervous system processes and organizes sensations from the body and the environment, to respond appropriately and interact effectively.

The dental environment provides many sensory challenges to the patient with ASD. The dental provider needs to be cognizant of the sensory stimuli that the dental visit involves and be able to recognize the behaviors that may be evoked by those stimuli. However, many dentists report that they feel unprepared by their education to treat patients with autism. A patient with sensory defensiveness may exhibit the following behaviors during a dental visit;

Reaction to touch
1. Overreaction to unanticipated touch, particularly touch to the face and inside the mouth, which is an extremely sensitive area.
2. Oversensitivity to the dental prophylaxis.
3. Extreme dislike of the texture and grittiness of the polishing paste.
4. Unusual responses to dental tools, X-ray materials, or gloved fingers in the mouth; may gag frequently or excessively.

Reaction to motion
1. Extreme fear responses as the dental chair reclines, including gripping the chair arms, reaching to hold the hygienist or parent, or attempting to get up or turn around in the chair. Patients with defensiveness to motion will often be more sensitive to moving backward than forward.

Reaction to visual stimuli
1. Difficulty tolerating bright light.
2. Fear of the hygienist and dentist when their faces are covered with a mask (wearing the mask highlights the eyes and covers the mouth, an area that many patients with autism look at when speaking with others, as they often avoid direct eye contact.)

Reaction to smells/tastes
1. Responses to the smell of the glove materials or the taste of the glove in the mouth.
2. Refusal to allow paste to be used, due to taste or smell.
3. Overreaction to the odors of perfumes or soaps used by staff members or other patients

Reaction to sounds
1. Fear responses to the sounds of the dental equipment, especially the polishing brush, suction, and high-speed handpiece. Fear responses to unexpected office noises such as intercoms, door alarms, and beeps.
2. Aversive responses to other people talking or laughing in the dental clinic.

For children with ASD, memories of a negative dental experience may result in behaviors such as tantrums and aggression at future visits. Because it can be difficult to extinguish these behaviors once they appear, it is best to employ clinical protocols that are likely to put the child at ease and facilitate cooperation from the beginning. Research suggests that approximately 30–50% of children with ASD are capable of receiving dental care using only behavioral techniques

Limited Intellectual ability
ID is characterized by impaired cognitive function and significant deficits in adaptive functioning, manifest before the age of 18 year. From 1966 to 1998, studies found that about only one-fifth of the people with ASD functioned in the "normal range" of intelligence. (fombonne E 1999).[13] But in years later, in 2014, a U.S. study found that almost half of the children with ASD had average or above average intelligence, that is, an IQ score above 85. Less than a third of the children with autism had intellectual disability, and 23% had IQ scores in the "borderline range" from 71 to 85. (ADDM 2010) (https://iancommunity.org/ssc/measuring-iq-autism).

Veenstra-Vanderweele J et al., (2003)[14] reported that there are enormous variations in the behavioral patterns and the severity of illness among individuals with autism. Mental retardation is evident in approximately 70% of individuals with autism. The behavioural symptoms in children include; temper tantrums, hyperactivity, short attention span, impulsivity, agitation, anger, and tendency for aggressive and self-injurious behaviours (SIB).

The long-established view of intellectual abilities in autism spectrum disorders (ASDs) was that up to 75% of individuals had an intellectual disability (previously referred to as ‘mental retardation ’ ; Schalock et al. 2007),[15] defined by an IQ <70, alongside accompanying impairment in everyday functioning.

T charman et al., 2010[16] conducted a comprehensive clinical assessment of 156 children aged 10–14 years, (81 childhood autism, 75 other ASD) to estimate IQ characteristics of the total population of children with an ASD. The results showed that 7.4% children had severe Intellectual Disability (IQ<35), 8.4% had moderate (35-49), 39.4% had mild (50-69), 16.6% had below average (70-85), 25.4% had average (85-114) and 2.7% of children had above

average (>115) 2.7%. It was concluded that ASD was less strongly associated with intellectual disability than traditionally held and there was only limited evidence of a distinctive IQ profile. Adaptive outcome was significantly impaired even for those children of average intelligence.

Leonard H et al., (2011)[17] carried out a population-based study to determine the sociodemographic characteristics of children diagnosed with ASD with or without ID, or ID without ASD compared with non-affected children. The study comprised of all children born in Western Australia (WA) between 1st January, 1984 and 31st December, 1999 and alive in 2005 (n= 393,329). The profiles for the four categories examined, mild-moderate ID, severe ID, ASD without ID and ASD with I`D varied considerably and we often identified a gradient effect where the risk factors for mild-moderate ID and ASD without ID were at opposite extremes while those for ASD with ID were intermediary. This was demonstrated clearly with increased odds of ASD without ID amongst older mothers aged 35 years and over, first born infants, male infants and increasing socioeconomic advantage. In contrast, mild-moderate ID was associated with younger mothers aged less than 20 years, paternal age greater than 40 years, Australian-born and Aboriginal mothers, increasing birth order and increasing social disadvantage. Mothers of infants residing in regional or remote areas had consistently lower risk of ASD or ID and may be linked to reduced access to services or under ascertainment rather than a protective effect of location. They concluded that the different risk profiles observed between groups may be related to aetiological differences or ascertainment factors or both. Untangling these pathways is challenging but an urgent public health priority in view of the supposed autism epidemic.

Rommelse N et al., (2015)[18] studied the absolute and relative severity of cognitive deficits in participants with ASD in relation to IQ. A total of 274 children participated: 30 ASD and 22 controls in the below average Intelligence Quotient (IQ) group (IQ<85), 57 ASD and 54 controls in the average IQ group (85<IQ<115) and 41 ASD and 70 controls in the above average IQ group (IQ>115). Matching for age, sex, Full Scale IQ (FSIQ), Verbal IQ (VIQ), Performance IQ (PIQ) and VIQ-PIQ difference was performed. Results showed that participants with below average IQs performed poorest. However, above average intelligent participants with ASD showed the most substantial cognitive problems (particularly for social cognition, visual pattern recognition and verbal working memory) since this group differed significantly from the IQ-matched control group, whereas this was not the case for below-average intelligence participants with ASD. Therefore they concluded that cognitive deficits appear somewhat more severe in individuals with ASD and above average IQs compared to the below average IQ patients with ASD.

These findings tentatively suggest that intelligence may act as a moderator in the cognitive presentation of ASD, with qualitatively different cognitive processes affected in patients at the high and low end of the IQ spectrum.

Conclusion:-

Happy and playful children with full of energy and enthusiasm are vital part of society. Since autistic children often exhibit, multiple serious medical and behavioral issues which may overshadow oral health conditions. Therefore, comprehensive dental care of AD child needs flexible approach with thorough understanding of the autistic behavioural profile, behavioural guidance techniques, and personalized therapeutic approach with compassionate rapport with patient. A multidisciplinary team of clinical psychologists, psychotherapists, special educators, audiologists, opticians, pediatric dentist, dieticians, speech and language therapists and social workers, is desirable to diagnose and provide comprehensive medical care for AD children. AD patient's management must be customized as per severity of the disease and clinical behavioral features; at times "outside the box" thinking is needed. Furthermore, appropriate behavior management technique should be used while treating AD children. Oral hygiene maintenance and preventive dental treatments should be emphasized; so, proper oral health education programs must be targeted to these special children.

References:-

1. American Association of Pediatric Dentistry. Guideline on management of dental patients with special health care needs. Pediatr Dent. 2012;34(5):160-5.
2. World Health Organization. The ICD-10 classification of mental and behavioral disorders: clinical descriptions and diagnostic guidelines. Geneva: World Health Organization; 1992.
3. Diagnostic and statistical manual of mental disorders. American Psychiatric Association, Washington DC. 5th edn. 2013;24-5.
4. Johnson CP, Myers SM. Identification and evaluation of children with autism spectrum disorders. Pediatrics. 2007;120(5):1183-215.

5. DePalma A, Raposa K. Building Bridges: Dental care for patients with autism. The Academy of Dental Therapeutics and Stomatology.2009
6. Cermak SA, Duker LI, Williams ME, Dawson ME, Lane CJ, Polido JC. Sensory adapted dental environments to enhance oral care for children with autism spectrum disorders: a randomized controlled pilot study. J Autism Dev Disord. 2015;45(9):2876-88.
7. Green D, Flanagan D. Understanding the autistic dental patient. Gen Dent. 2008;56(2):167-71.
8. Weil TN, Inglehart MR. Dental education and dentists' attitudes and behavior concerning patients with autism. Journal of Dental Education. 2010;74(12):1294-307.
9. Kanner L. Autistic disturbances of affective contact.1943;217-50
10. Bergman P, Escalona SK. Unusual sensitivities in very young children. Psychoanal Stud Child. 1949;3(1):333-52.
11. Lane SJ, Miller LJ, Hanft BE. Toward a consensus in terminology in sensory integration practice: Part 2: sensory integration patterns of function and dysfunction. American Occupational Therapy Association's Sensory Integration Special Interest Section Quarterly 2000;23:1-4
12. Ayres AJ. Sensory Integration and the Child .Los Angeles, CA: Western Psychological Services, 1979.
13. Fombonne E. The epidemiology of autism: a review. Psychological medicine. 1999;29(04):769-86.
14. Veenstra-VanderWeele J, Christian SL, Cook, Jr EH. Autism as a paradigmatic complex genetic disorder. Annu. Rev. Genomics Hum. Genet.. 2004;5:379-405.
15. Schalock RL, Luckasson RA, Shogren KA. The renaming of mental retardation: Understanding the change to the term intellectual disability. Intellectual and developmental disabilities. 2007;45(2):116-24.
16. Charman T, Pickles A, Simonoff E, Chandler S, Loucas T, Baird G. IQ in children with autism spectrum disorders: data from the Special Needs and Autism Project (SNAP). Psychological medicine. 2011;41(03):619-27.
17. Leonard H, Glasson E, Nassar N, Whitehouse A, Bebbington A, Bourke J, Jacoby P, Dixon G, Malacova E, Bower C, Stanley F. Autism and intellectual disability are differentially related to socio-demographic background at birth. PloS one. 2011;6(3):17875.
18. Rommelse N, Langerak I, van der Meer J, de Bruijn Y, Staal W, Oerlemans A, Buitelaar J. Intelligence May Moderate the Cognitive Profile of Patients with ASD. PloS one. 2015;10(10). Doi - doi.org/10.1371/journal.pone.0138698.