Journal of Oral and Dental Care

ReviewArticle

The Management of Children with Autism Spectrum Disorder (ASD) in the Dental Setting

Elmouatarif Fz[1]* and MTALSI M[2]

[1]*Pediatric Dentistry Department, Faculty of Dentistry, Mohammed VI University of Health Sciences (UM6SS), Morocco.*
[2]*Pediatric Dentistry Department, Faculty of Dental Medicine, Hassan 2nd University, Morocco.*

KEYWORDS

Autism Spectrum Disorder, Pervasive developmental disorder, Psychology.

Corresponding Author Information

Elmouatarif Fz
Pediatric Dentistry Department, Faculty of Dentistry, Mohammed VI University of Health Sciences (UM6SS), Morocco.

Received: Ocvtober 17, 2025; **Accepted:** November 11, 2025; **Published:** November 24, 2025

Citation: Elmouatarif Fz, MTALSI M. The Management of Children with Autism Spectrum Disorder (ASD) in the Dental Setting. J Oral Dental Care. 2025;2(1):1-3.

Introduction

Autism, previously classified as a pervasive developmental disorder (PDD) [1-3], is a major public concern due to its social psychological impact on patients and their families. It is characterized by persistent deficits in communication and social interaction across multiple contexts [2] as well as restricted, repetitive patterns of behavior [4].

According to the American Psychiatric Association in the DSM 5, autism and Asperger's syndrome are no longer used; instead they are now incorporated under a single umbrella diagnosis of "Autism Spectrum Disorder" (ASD). ASD is therefore considered a unique disorder with heterogeneity in forms, intensity, and associated pathologies (DSM-5). In contrast, the International Classification of Diseases (ICD-11) refers to ASD as a condition that may or may not be accompanied by intellectual or language impairment.

The diagnosis of ASD primarily relies on behavioral and developmental characteristics, as well as co-occurring comorbid medical and associated behavioral abnormalities such as intellectual disability, agitation, hyperactivity, epilepsy, sleep disturbances, and eating disorders [2].

The World Health Organization (WHO) reports that the prevalence of ASD among children is 1%, with a sex ratio of 4.1 boys to girls [6-8]. Approximately 70% of the children with ASD experience delayed mental development and have an IQ below 70, while 30% are subject to epilepsy [7,9].

Research evidence suggests that the development of ASD involve both genetic (CNTNAP2 gene) and environmental factors [10]. It is noteworthy that the ASD can affect patients differently; meaning that no two people with autism have the same underlying causes [7,10].

Maintaining good dental hygiene is challenging for children with ASD due to heightened sensitivities. However, poor dental hygiene in such children is not necessarily caused by their condition, but may be due to psychological challenges related to maintaining oral hygiene and difficulty in taking care of their teeth, ultimately

leading to a deterioration of their oral health [2].

Oral health of children with ASD

Dental caries is one of the oral conditions that can affect children with ASD, and its prevalence tends to increase with age [1,6,11,12]. According to Jehan Alhumaid [6], 76% of children with ASD have cavities in their primary teeth, 68% in their permanent teeth, and 31% in their gums [6]. This is often due to infrequent and unsupervised brushing by parents [1,6,11,12], and the specific diet and genetic predisposition of these children [13]. Isil ozgul Kalyoncu [1] reported a significantly higher prevalence of dental caries in ASD children taking prescription medications (especially syrups+++).

Children with ASD may also experience various functional pathologies such as mouth breathing, malocclusions and congestion, and bruxism [12,13] which are more prevalent in this population. About 36% of children with ASD are reported to experience bruxism [7]. Furthermore, several studies have indicated that self-injurious behavior (SIB) is a relatively common behavior in children with ASD. In fact, 70% of children with ASD show self-injurious behaviors at some point in their lives, which could be related to sudden behavioral disturbances [7]. Numerous different factors were found to impact the oral health status of children with ASD [1,6,11]. A primary contributing factor to a high prevalence of poor oral health among children with ASD is lack of manual dexterity, which can lead to inadequate brushing and flossing [2,12]. In addition, many children with ASD showed preference for proceeded foods such as sweet snacks, with a rejection of fruits and vegetables [2,12,13]. A meta-analysis conducted by Mtalsi et al., [2] on assessment of oral health habits of Moroccan autistic children indicated that dietary habits were found to be five times more prevalent among children with ASD compared to neurotypical children.

It should be pointed out that the use of tricyclic medications can cause dry mouth, which cause higher rates of tooth decay and gum disease [12]. Moreover, access to dental care can be challenging or impossible particularly for children who are reluctant to receive dental treatment, and require specialized modalities of treatment such as conscious sedation or general anesthesia, which may not be accessible to all children with ASD.

Thus, implementing prevention strategies is essential to improving the oral health status of children with ASD because they address the underlying causes of dental problems. Prevention strategies should focus on reinforcing oral hygiene practices such as regular brushing and flossing, promoting a non-cariogenic diet, and ensuring dental routine check-ups to maintain good oral health [2]. These intervention strategies will prevent oral diseases, as well as mitigate the economic burden on public health and the need for dental care [13].

Dental management of children with autism spectrum

To effectively manage children with ASD, it is essential to understand their specific needs and tailor interventions to each individual, based on their level of communication, and understanding, their ability to interact socially, sensory impairments, as well as any other associated disorders. This involves considering their level of communication, social interaction skills, sensory impairments, and any associated disorders. Dental management of children of children with ASD is based on several principles, ranging from appointment management to cognitive behavioral management.

In order to anticipate inappropriate behavior, and establish a positive relationship, the dental practitioner must take a medical history to gain a thorough understanding of the child, with purpose of preparing them to accept the dental setting. Hence, to optimize the dental experience, it is preferable to schedule short and frequent appointments when the healthcare team is less busy. The dentist and the healthcare team should provide a quiet environment with soft lighting and minimize sources of stressful noise [10].

Initial visits can be strengthened by using different modeling techniques through video sequences [14] that show the session's progress in a simplified and comprehensive manner. According to the French National Authority for Health (HAS) recommendations, children with ASD should receive reliable and valid structured behavioral and developmental interventions as early as possible. These methods include ABA (Applied Behavior Analysis), PECS (Picture Exchange Communication System), and the TEACCH method [2,9].

Several approaches have been suggested in the literature to improve the management of children with ASD, including the visual pedagogy technique. Visual pedagogy is defined as the ability to recognize and understand the ideas conveyed through visual images [15] to enhance children's specific skills. One of the most commonly used visual tools is the Picture Exchange Communication System (PECS) developed by Andrew Bondy and Lori Forst [7,15,16]. It is a pictorial system used to facilitate children's comprehension and communication, including explaining dental care sessions to them.

A systematic review conducted by IN AlBhaisi et al., [17] indicated that several studies embraced the use of visual pedagogy technique to manage the behavioral children with ASD during dental care. These methods include printed materials (dental stories or full-color treatment books) which can help parents and/or children adapt to the dental setting more easily. In addition, digital visual teaching aids such as mobile devices/iPad apps were found to have more impact than print materials. Likewise, the use of DVDs, video glasses, and video modeling were shown to be effective in improving anxiety and behavior scores in children with ASD [15,17]. However, other studies [18] suggested that certain electronic technologies may be useful tools for reducing fear and among children with ASD.

In order to provide optimal quality care for children with ASD, dental practitioners must use a combination of the above methods, as well with cognitive-behavioral techniques. A narrative review of the literature by G. Vallogini et al., in 2022 [19] found that the use of conscious sedation with nitrous oxide and oxygen

inhalation was effective in managing compressions in children with ASD. Similarly, Zanelli in 2015 [9], Mummolo in 2020 [20] and Mangione in 2022 [21] showed that conscious sedation with nitrous oxide and oxygen as an auxiliary method was an effective option that provided optimal outcomes. Our clinical experience supports these results. In case these modalities are ineffective, general anesthesia is commonly used to facilitate dental treatment for autistic children with ASD.

Conclusion

According to the French National Authority for Health (HAS), when a child or adolescent is unable to communicate orally, dental practitioners should help them develop their own modes of reasoning through written language, augmented or alternative communication system, etc. [2]. Therefore, it is the responsibility of dental practitioners to maintain optimal oral health for children with ASD. This requires not only clinical expertise, but also empathy, patience, humor, and a willingness to leverage or adopt new technologies. Various treatment modalities should be considered, ranging from sedative premedication to sedation by inhaling nitrous oxide or midazolam. When none of these approaches succeed in enhancing children's oral health, dental practitioners should consider general anesthesia as an alternative option. The ultimate purpose is to create a comfortable and safe environment for children with ASD, thereby improving the oral health status and well-being of children with ASD.

References

1. KALYONCU IO, TANBOGA I. Oral Health Status of Children with Autistic Spectrum Disorder Compared with Non-authentic Peers. Iran J Public Health. 2017; 46:1591-1593.
2. Mtalsi M, Nabli M, ALjalil Z, Zalzouli H, ELARABI S. oral health habits assessment of autistic children: a survey of parents with Moroccan children of the autism spectrum. Internationnal Journal of innovation scientific research and review. 2021; 10.
3. Delli CKS, Polychronopoulou SA, Kolaitis GA, Antoniou AG. Review of interventions for the management of anxiety symptoms in children with ASD. Neurosci Biobehav Rev. 2018; 95:449-463.
4. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 2022.
5. Présentation de la nouvelle Classification internationale des maladies (CIM-11). L'information psychiatrique. 2022; 98:426-434.
6. Humaid JA, Gaffar B, Yousef YA, Alshuraim F, Alhareky M, et al. Oral Health of Children with Autism: The Influence of Parental Attitudes and Willingness in Providing Care. The Scientific World Journal. 2020; 2020:9.
7. Chandrashekhar S, Bommangoudar JS. Management of Autistic Patients in Dental Office: A Clinical Update. Int J Clin Pediatr Dent. 2018; 11:219-227.
8. Humaid JA. Dental experiences related to oral care of children with autism spectrum disorders in Saudi Arabia: A literature review. Saudi Dental Journal. 2022; 34:1-10.
9. Zanelli ME, Volpato LER, Ortega AL, borges ah, aranha AMF. Nitrous oxide for dental treatment in patients with infantile autism: a literature review. RSBO. 2015; 12:202-208.
10. Delli K, Reichart PA, Bornstein MM, Livas C. Management of children with autism spectrum disorder in the dental setting: Concerns, behavioural approaches and recommendations. Med Oral Patol Oral Cir Bucal. 2013; 18:e862-e868.
11. JABER MA. Dental caries experience, oral health status and treatment needs of dental patients with autism. J Appl Oral Sci. 2011; 19:212-217.
12. Erwin J, Paisi M, Witton R, Neill S, Burns L, et al. Factors Influencing Oral Health Behaviours, Access and Provision of Dental Care for Autistic Children and Adolescents in Countries with a Very High Human Development Index: Protocol for a Mixed Methods Systematic Review. Int J Environ Res Public Health. 2021; 18:12346.
13. Zerman N, Zotti F, Chirumbolo S, Zangani A, Mauro G, et al. Insights on dental care management and prevention in children with autism spectrum disorder (ASD). What is new? Front Oral Health. 2022; 3:998831.
14. Moro JDS, Rodrigues TD, Kammer PV, de Camargo AR, Bolan M. Efficacy of the Video Modeling Technique as a Facilitator of Non-invasive Dental Care in Autistic Children: Randomized Clinical Trial. J Autism Dev Disord. 2022; 54:501-508.
15. Balian A, Cirio S, Salerno C, Gerhard Wolf T, Guglielmo C, et al. Visual Pedagogy Effective in Improving Cooperation towards Oral Hygiene and Dental Care in Children with Autism Spectrum Disorder? A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2021; 18:789.
16. Mochamant IGA, Fotopoulos I, Zouloumis L. Dental Management of Patients with Autism Spectrum Disorders. Balk J Dent Med. 2015; 19:124-127.
17. AlBhaisi IN, Kumar MSTS, Engapuram A, Shafiei Z, Zakaria ASI, et al. Effectiveness of psychological techniques in dental management for children with autism spectrum disorder: a systematic literature review. BMC Oral Health. 2022; 22:162.
18. Isong IA, Rao SR, Holifield C, Iannuzzi D, Hanson E, et al. Addressing dental fear in children with autism spectrum disorders: a randomized controlled pilot study using electronic screen media. Clin Pediatr (Phila). 2014; 53:230-237.
19. Vallogini G, Festa P, Matarazzo G, Gentile T, Garret-Bernardin A, et al. Conscious Sedation in Dentistry for the Management of Pediatric Patients with Autism: A Narrative Review of the Literature. Children (Basel). 2022; 9:460.
20. Mummolo S, Sapio S, Falco A, Vittorini OL, Quinzi V. Management of pedodontic patients in moderate sedation in clinical dentistry: evaluation of behaviour before and after treatment. J Biol Regul Homeost Agents. 2020; 34:55-62.
21. Mangione F, Bdeoui F, Monnier-Da Costa A, Dursun E. Autistic patients: a retrospective study on their dental needs and the behavioural approach. Clin Oral Investig. 2020; 24:1677-1685.