

Management of the behavior of patients with autism spectrum disorder in pediatric dentistry: Literature review

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Abstract

Special childhood patients, the prevention of oral health problems, the promotion of a positive attitude and the acceptance of dental care should have the highest priority. Dental treatment in patients with Autism Spectrum Disorders (ASD) can be complicated due to the presence of behavioral alterations, patient anxiety, the questionable preparation of dental staff and the consequent fears in parents; which can limit attendance at the consultation in a timely manner and at an early age to achieve good adaptation, however the prevention of oral health problems, the promotion of a positive attitude and the acceptance of dental care must have the highest priority.

The objective of this review was to describe the relevant evidence for the management of behavior in the dental consultation in children with ASD, for this a systematic search of the literature was carried out using information search engines such as: PubMed, SCOPUS and Scielo.

In conclusion, children with ASD need help to understand and focus on the treatment situation, communication must be modified to adapt to each individual patient, give you simple instructions with very specific information. The introduction to the exam or treatment may be made in several appointments spaced by one or several days. Parents know what their child will experience during the dentist appointment, and will be better prepared to support and encourage their child both before and during the visits.

Keywords: Behavior management; Autism; Pediatric dentistry; Dental management

1. Introduction

Before addressing dental care, it is essential to respect the rights of all children. Two important facts worldwide about special children are:

- The Convention on the Rights of the Child (United Nations, 1989), ratified by most countries, establishes that children have rights and that their "higher interest" must guide all decisions that concern them. This convention has significantly influenced the care and respect for children in the health sector, guaranteeing their right to participate in decisions about their treatment and respect their opinions, considering their age and maturity. (1)
- The Convention on the Rights of Persons with Disabilities (United Nations, 2006) seeks to promote, protect and guarantee the human rights and fundamental freedoms of all persons with disabilities, promoting respect for their independence. This convention highlighted the need to change society's attitude towards people with disabilities, affirming that they have the same rights to make decisions about their life, including health issues. Dentists who treat children must be aware of these changes and apply these principles in their practice. (1)

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The management of behavior in the dental office of patients with ASD consists of optimizing the available mechanisms to alter an individual's environment and thus help him function more appropriately, because since there are no altered biological markers, the diagnosis is based on the clinical part, which implies that the systematic application of learning techniques makes it easier to improve unwanted behavior and achieve favorable behavior. To do this, a behavioral evaluation is carried out, since it is known that Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder, not a disease, which is characterized by difficulties in communication, social interaction, as well as in the flexibility of thought and behavior (2,3)

The etiology is unknown and multifactorial, it may be due to a family history of developmental disorders, as well as a history of perinatal neurological risks and epilepsy. (4,5) They are detected around 18 months, with the male sex being affected in the greatest proportion. Early detection is important since the results of early therapy provide greater and faster improvement than a late intervention. (6)

The ASD can be classified by its severity, in 3 different degrees.

- **GRADE I:** Also called mild autism, it needs moderate help in social situations, the most common symptoms are difficulties in starting and maintaining a conversation, restricted interests - it may seem that they have no interest in social relationships, they have a tendency to do things the same way and they do not have an intellectual disability. (7)
- **GRADE II:** The person needs remarkable help, comes to need language therapies and frequent professional support, the symptoms are the following: Little social initiative, difficulties in relating to others, little response to social interactions and verbalizations or "rare" or peculiar non-verbal communication. (7)
- **GRADE III:** You need very noticeable help. Your level of autism makes it difficult for you to carry out daily activities such as going to school, tidying up or simply taking care of yourself. (7)
- These disorders, by themselves, do not include oral characteristics different from those found in patients without this pathology, however, the risk increases due to the limited ability to understand, as well as to assume responsibilities in oral health, which can severely increase the rate of caries and periodontal disease. In addition, a higher incidence of parafunctional habits and self-harm has been found. (8,9)
- For the management of behavior in the dental office to be successful, it is important to consider the three components of the triangle: The child, the parent or legal guardian and the dental team; these three elements must collaborate and communicate, the dentist is responsible for the treatment and must acquire adequate knowledge about the diagnosis or disability of the child, as well as an understanding of the psychology of the family. (10)

1.1. Family

Another fundamental part in the management of behavior is the role that parents or guardians play in patients with autism, they fulfill a means of communication between the professional and the patient with ASD, the professional must be very careful when addressing the patient without first communicating it to the caregivers since they are the ones who know the most and know the things that may or may not affect the child; in addition, communicating each step to the parent or guardian of what is going to be done will cause relief and tranquility To the same and therefore the patient, the caregiver must be told the specific dental treatments that your child will receive since most caregivers fear that they are incompatible with the patient and end up triggering a worsening in the signs of ASD, once according to the dental treatment that will be carried out, the effectiveness and benefits that they will have will be explained, clarifying that the final decision is only in their hands. (10)

The Dentist will meet with the parents without the presence of the child, to collect in the medical history all the relevant information about the individual characteristics of the patient; once obtained, the material related to desensitization consisting of images and videos (or both) that show a visit to the dental office is made. He is introduced to the entire team and the work staff to ensure that the child can recognize those who will assist him in the future and basic dental instruments are provided to the education center in order, likewise, for the child to know it in advance. (10,11)

Behavioral management in dental care should include working on associated communication problems (TEACCH), applied behavioral analysis (ABA), systematic desensitization (DS), visual pedagogy that facilitates consultation with the professional.

1.2. ABA

Children with autism spectrum may have behavioral problems in the face of sudden or loud noises and are easily frightened, but at the same time they could be interested in music and enjoy specific types of melodies in the dental

office. Instead of avoiding noise and worrying about how the child reacts to the sound of suction, the dentist could play music during treatment or explain the treatment and the sounds that will be produced in musical terms. (12)

The colors, smells and noises of the dental environment can alter the behavior of these patients because they are very susceptible to changes of any kind despite the fact that in many cases they can seem abstracted in their own world. This is why our approach must be carried out from the outside to the inside, never go directly to the oral cavity and move forward according to how the patient reacts to each of our movements. (12)

He needs a person who is attentive most of the time and requires professional help to gradually acquire some skills that allow him to be a little more independent, he has difficulties in verbal and non-verbal communication, difficulties in understanding his own and other people's emotions and extreme sensitivity to sensory stimuli. (7)

Psychological management must be carried out from the first session and not cease to be done until the last, we must take into account the data recorded in the medical history, maintain permanent contact with the doctor or doctors who treat the patient, as well as with the physical, language or occupational therapist depending on each case. (8, 13)

Children with ASD usually provide limited or no collaboration with medical procedures, especially in those they consider invasive such as dental examination, these patients are prone to agitation, self-harm and emotional deregulation, they may also present hypersensitivity to sensory stimuli, all these characteristics make it difficult for professionals to examine and treat children with autism spectrum disorder. (6,14)

In the population with ASD, there are no specific behavioral profiles, so the development of the dental consultation cannot be predicted, there are situations in which there can be full collaboration to perform any procedure and while in other situations no clinical evaluation can be carried out. (15) Therefore, it is recommended that prior to dental care, an appointment to recognize the case and adapt to the climate of attention be made, to achieve an incremental and controlled exposure to new stimuli and contexts, guaranteeing better quality in the care and adaptation of the patient (16), it has been documented that in this population there may be a nervous system with hypersensitivity, responding exaggeratedly to certain stimuli such as specific sounds, light, smells, textures and touch or contact (10), or manifest hyposensitivity to certain painful and thermal stimuli (7), so the patient's response is not predictable, but it is Carry out a survey. (17)

Applied behavior analysis can be used to understand why a behavior occurs and to teach specific skills. For example, they can be used to help children learn how to brush their teeth. Each part of this activity will be divided into specific steps, each step will be taught separately, and the child will be rewarded as he learns each skill included. (18)

The individual steps may include the following: take the toothbrush, take the toothpaste, squeeze the toothpaste and place it on the brush, moisten the brush and paste with water, brush the front teeth, brush the teeth from the top right, brush the teeth from the top to the left, brush the teeth from the bottom to the right, brush the teeth from the bottom left, spit the paste, rinse the brush, store the brush and store the paste. (19,20)

1.3. Systematic desensitization

Reduce the patient's anxiety and provide quality dental treatments while building a positive relationship, to achieve this you need a flexibility rate to meet the needs of each patient. (17)

An attractive alternative method to manage anxiety in patients with ASD is animal-assisted therapy (TAA). Different studies have evaluated and confirmed the effects of AAT with reports on the improvement of blood pressure, triglyceride levels and anxiety. The approach involves the use of animal therapy that are specifically trained to work within the facility with the aim of providing comfort and psychological support to patients. In-depth knowledge can avoid the need for advanced behavior management techniques such as protective stabilization, sedation and general anesthesia. (21)

To reduce anxiety, desensitization methods are used, when there are non-cooperative behaviors. Very basic steps are performed such as: Walking into the check-up corridor, taking a seat in the check-up chair for short periods until the patient adapts, taking a seat in the check-up chair and opening the mouth, sitting at the check-up place and allowing the dentist to count the teeth, sitting in the check-up chair and allowing the dentist to brush his teeth. (17)

It is conceivable that the lack of response to the demonstrations and the inability to establish contacts with the staff can obscure the professional procedures of oral care. (17)

The development of a good relationship part of an assertive communication with short, clear and simple oral orders, the exchange of images is included within the communication, PECS is an alternative communication technique with little or no verbal ability, it consists of a book of images to express desires, observations and feelings. (4)

Voice control is an aid that we cannot miss, using a calm, reassuring and natural voice is useful, it includes turning up the volume and changing the tone of the voice to keep the child's attention. If the patient is upset or if it is necessary to end a visit prematurely, maintain a natural attitude and end up with some positive aspect. (17)

Another necessary technique is the so-called Say-show-do "Say-Show-Do" is a basic and effective exposure therapy and a way to introduce dental instruments, equipment or procedures to a patient with autism. Some people will benefit from practicing certain aspects of a procedure before experiencing them in a dental office. This technique can be applied to children with special needs and to children in general. (4)

For dental care and treatment to be successful, the three components of the triangle must collaborate and communicate. Ultimately, the dentist is responsible for the treatment and must acquire adequate knowledge about the diagnosis or disability of the child, as well as an understanding of the psychology of the family. (10)

An adequate interaction between dentist - patient - and the environment that surrounds it, facilitates a good relationship and experience in the dental consultation, which will ensure good care in oral health, the cure of the disease and the preservation of health, to contribute to good general health and an optimal standard of living. (22)

1.4. Visual management

Patients with ASD have certain reactions to visual stimuli found in the dental office, first of all difficulty in tolerating bright light in addition to fear of the hygienist and the dentist when their faces are covered with a mask (the use of the mask highlights the eyes and covers the mouth, an area that many with autism look at when talking to other people, since they often avoid direct eye contact. (23)

To avoid unwanted behaviors within the consultation, the dentist can choose to allow the patient to wear something that blocks the lights (sun glasses), avoid placing the light in a way that directly affects the patient's eyes, dim the ceiling lights and avoid direct eye contact, in addition to using transparent face shields. (23)

2. Methodology

Based on the objectives set, a review of the literature was carried out.

2.1. Search Strategies

The investigation was carried out through the use of tools such as PubMed, SCOPUS and Scielo. The Boolean operator AND was used for the union between these descriptors. Keywords interconnected with the proposed objectives were used as search planning, according to the terms MeSH and DeCs: "Management of conduct" "Syndrome", "Autism", "Communication", "Dentistry," in addition to their translations into the English language.

2.2. Inclusion and exclusion criteria

2.2.1. Inclusion criteria

- Publications in any language.
- Documented publications within the period 2015-2023.
- Reviews of the literature on the management of patients with autism in Dentistry.
- Systematic reviews of the management of patients with autism in dental care.
- Meta-analysis of the management of patients with autism in the dental office.

2.2.2. Exclusion criteria

- Literature that does not meet the inclusion criterion.
- Sections of books were excluded.

2.3. Procedure

Complete studies were examined where original articles related to the management of patients with autism in pediatric dentistry were included, published in English and Spanish, with a complete and freely accessible text; studies of clinical cases, theses, monographs and articles with access restriction were excluded, and finally the writing of this article was carried out with the literature selected in the highlighted topic.

3. Results

Flowchart 1 shows the flowchart of the literature review. Several digital bases were reviewed from which Pubmed, Scopus and Scielo were taken into account, the result of articles obtained were 122 identified studies which were filtered by exclusion and inclusion criteria, 25 articles were excluded for duplicity and 42 for title reading and lack of free access, obtaining a total of 55 articles that were chosen for full reading, resulting in 18 excluded. Finally, 37 articles were obtained for the corresponding review. FIG1

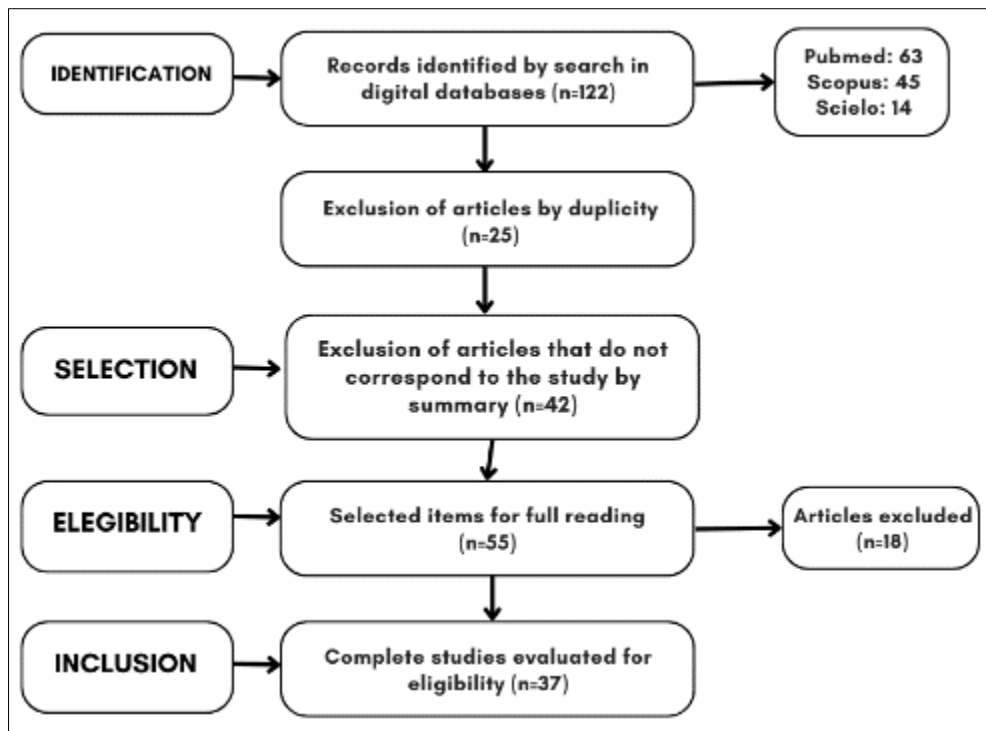


Figure 1 Item Selection Flowchart

4. Discussion

In this article it is mentioned that patients with autism syndrome do not have specific oral characteristics, however, these dental problems are primarily due to their poor oral hygiene, their lack of motor skills and poor diet throughout their lives, resulting in dental caries and periodontal disease having concordance with it in the study by García et al. (24)

As for the management of the behavior of the patient Posse et when mentioning that there is no specific behavioral profile that helps the professional to anticipate the attitude that the patient will show at the time of the dental appointment, that is why as the appointment progresses the dentist must know which technique is the most appropriate for the moment. (25)

The American Academy of Pediatric Dentistry (AAPD) recognizes that the management of the behavior of people with special needs has changed. These patients can present a high risk of oral pathology due to their little ability to understand or participate in their daily hygiene and cooperation with preventive dental programs. (19)

An adequate interaction between dentist - patient and with the environment that surrounds it, facilitates a good relationship and experience in the dental consultation, which will ensure good care in oral health, the cure of the disease and the preservation of health, to contribute to good general health and an optimal standard of living. (19,26)

Children and adolescents with autism spectrum disorder are more vulnerable to oral diseases than the generally developing population due to the kariogenic diet, self-inharming behavior and the increase in barriers to dental care services. (27,28)

In a study by Burgette et al. They report that children with ASD are more likely to have dental problems reported by their care than children without ASD. Önoğlu affirms that autism is influenced by many factors, so parents, caregivers and dentists should be aware of this information and encourage children to improve their oral health and provide them with the dental care they need. (29,30)

Autism spectrum disorder (ASD) is characterized by deficiencies in communication and social relationships and a restricted, repetitive and stereotyped repertoire of activities, behaviors and interests. Therefore, affected children may be unable to cooperate in the dental environment, which reduces their access to dental care. (31) Kalyoncu et al. explored the oral hygiene practices and oral health status of children with ASD and factors that can affect their oral health compared to non-autistic colleagues where they detected cavities injuries in 65% of children with ASD and 90% of non-autistic children, and this difference was significant, but ASD was not associated with the prevalence or severity of the increase in tooth decay. (32)

Children with ASD seem to need much more effort to provide oral care than children without ASD, it is very important to help them achieve the dental care they need, through dentists who have knowledge of special education techniques. (33) The management of the behavior of children with autism in pediatric dentistry requires a multidisciplinary approach that combines sensory adaptations, desensitization techniques, behavioral interventions and the active participation of parents. Each child is unique, so it is crucial to customize the strategies and adapt them to individual needs. By implementing these techniques, dentists can provide more effective and compassionate care, significantly improving the dental experience and oral health. (30,34)

In the study by Vallogini et al. he mentions the sedation method in which it was shown that both diazepam and midazolam achieved safe results and effective conscious sedation in autistic patients. In terms of crying, body movement and general behavior, midazolam was more successful, especially in the early stages of treatment, it showed statistically more significant results and seemed to be more effective than diazepam because it showed greater effectiveness in sleep regulation, body movement and crying behavior and induced a homogeneous response in patients, despite its shorter effect. On the other hand, diazepam provided a longer duration but a greater variation in behavioral responses. (35)

Reis et al. verified whether dentists perceive the dental care of children and adolescents with ASD as a challenge. It examines how dentists perceive this type of treatment in terms of physical or psychological stress, and whether they consider it more of a challenge or a threat according to the theory of transactional stress. (36,37).

5. Conclusion

There are few studies regarding the use of dental services in patients with ASD (11). Some focus on barriers to access to care, with reports stating that despite a high percentage (97%) visiting the dental consultation, many patients do not receive the required level of care and even, when compared between those who have ASD and not, the use of preventive care is lower for the first.

Dental care represents a significant challenge that requires a multidisciplinary and personalized approach. This article has highlighted several effective strategies to improve the dental experience of these patients, including desensitization techniques, animal-assisted therapy, and the application of the say-show-do method, interventions that not only seek to reduce anxiety and improve cooperation during dental treatments, but also to establish a long-term relationship of trust between the dental professional, the patient and their caregivers.

It is crucial that dentists and support staff are adequately trained in the management of specific ASD behaviors, as well as in the adaptation of the clinical environment to mitigate adverse sensory stimuli. In addition, close collaboration with caregivers is essential to understand the particular needs of the patient and ensure effective and respectful dental care.

As research progresses and new techniques are developed, it is essential that the dental community continues to integrate evidence-based practices and adapt to the changing needs of patients with ASD. This approach not only improves the oral health of these individuals, but also promotes their general well-being and quality of life.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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