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# Oral Health Assessment of Children with Autism Spectrum Disorder in Special Schools

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**Summary Of Article**

Adesh Kakade, Anitha Santosh and Sayali Mali conducted a cross sectional study to assess the oral health problems of 142 children on the spectrum attending specialized schools in the suburbs of Mumbai, India. It was published on the PubMed database in July -august 2021 (https://doi.org/10.5005/jp-journals-10005-1972).

Based on the children's age, the 142 participants were divided into 3 categories (primary, mixed, and permanent) following a clinical examination carried out to assess their oral health, focusing on dental caries, gingivitis, plaque, calculus, OHI-S and debri. Individuals with autism were selected from their school institution's health data. Autistic children with seizure disorders, developmental delays, and ADHD also took part in the study with parental permission. To conduct this, data was analyzed using statistical analysis software, and surveys were distributed to the caregivers of the participants.

In comparison to the permanent dentition group, children with primary and mixed dentition exhibited a higher rate of cavities in their teeth. The participant group had good oral hygiene, with an average OHI-S score of 0.88 ± 0.79. Traumatic dental damage, grinding, saliva leaking from the lower portion of their mouth, and self-harming actions were also documented. Because of the character of their cognitive deficiency and the difficulties in delivering dental therapy, it is advised that kids with this condition receive preventative routine dental treatment.

**Article Information**

The title is " *Oral Health Assessment of Children with Autism Spectrum Disorder in Special Schools"*
Authors: Adesh Kakade, Anitha Santosh and Sayali Mali structure the research plan,
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**Study Analysis**

This research was carried out in the suburbs of Mumbai, India, in 2021. This study is known as an observational case control study or a cross sectional study.

**Study Purpose**

To analyze and assess the oral health problems of children on the spectrum in specialized schools, allowing a sense of responsibility to help and guide these children to a healthier mouth by receiving proper dental care. Individuals with certain medical disorders are more likely to develop oral problems throughout their lifespan. One such problematic ailment is autism spectrum disorder, which refers "to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech, and nonverbal communication" (Autism Speaks, 2023) and is a collection of neurodevelopmental disorders that feature multidimensional behavior and deficiencies with regard to interactions with others and intellectual development, which can compromise dental hygiene.

**Experimental Design**

An observational, cross-sectional study was conducted on 142 children and adolescents ranging in age from 3 to 17 years old. Based on their age, these participants were classified into three groups: primary, mixed, and permanent dentition. Individuals were chosen from their educational institution's health data based on an autism diagnosis. Autistic children with epileptic fits, intellectual difficulties, and ADHD also participated in an investigation with parental agreement. To be more precise, an observational checklist was established to document what was discovered during the oral examination.

To regulate all student participation behaviors, the "Tell-Show-Feel-Do" strategy was employed. The WHO parameters were utilized for registering tooth decay in the primary dentition, and the DEFT index was implemented to document dental decay in the secondary dentition. In addition, for permanent dentition, the DMFT index was applied, and for mixed dentition, the respective DEFT and DMFT indices were used. To evaluate and capture the gingival state, a widespread or localized inflammation of the gingival tissue was noted based on the degree of gingival erythema and bleeding throughout the procedure. For the purpose of determining and assessing the individual's oral hygiene state, the Simplified Oral Hygiene Index (OHI-S) formulated by Greene and Vermillion and its adaptation for deciduous teeth developed by Miglani et al. were utilized. Grinding was detected according to the appearance of degradation surfaces on both incisal and occlusal regions. A visual examination was implemented to document stressful dental wreckage. All patients were examined under artificial illumination by an isolated clinician utilizing an oral reflector and explorer. Furthermore, an organized survey was additionally provided to every one of the caregivers of the children who participated in this study. The objective was to collect sociodemographic information involving parents' occupations and levels of education, along with assessing their comprehension of the significance of maintaining good oral hygiene. SPSS version 16.0 statistical analysis software was applied to examine the dataset. One-way ANOVA with post hoc analysis Tukey's test was utilized to evaluate the average DMF, DEF, and OHI-S scores of autistic children's primary, mixed, and permanent dentition. The percentages of males and females of various ages were juxtaposed using the Chi-square test. The average DMF, DEF, and OHI-S scores of males and females in all age categories were evaluated using an independent sample t-test. The degree of statistical significance was set at 0.05.

**Results**

An independent t-test was used to analyze the two elements of the OHI-S. Table 2 illustrates a comprehensive evaluation of autistic children's oral hygiene performance throughout various ages. With a mean DI-S of 0.56 ± 0.46 and a mean CI-S of 0.32 ± 0.40, the Debris Index (DI-S) and

Calculus Index (CI-S) portions failed to show any statistically significant variations among each of the age categories. Autistic children with permanent dentition exhibited higher levels of debris and calcification. The average OHI-S was between 1.02 ± 0.89, which has been demonstrated to be insignificant by statistical analysis. Additionally, the overall frequency of cavities in the mouth among autistic children was observed to be 4.90 on average (Table 3). 90.4, 94.9, and 83.87% of children aged 3-6, 7-11, and 12-17 years old, respectively, have documented tooth decay. Table 4 displays the age-related mean DEFT and DMFT values. A comprehensive examination of the numerous aspects of caries encountered across all three categories of study participants revealed statistically significant differences (Table 5). 13.38% of autistic children evaluated had injuries from trauma. Young children were prone to infections in their mouths due to drooling through the outer edges of their mouths (Table 6). On top of that, nine children have been shown to have clinical signs of teeth grinding, and eight children had been identified as having self-injurious tendencies (Table 6). In accordance with Kuppuswamy's socioeconomic scale, 80.3% of the sample population belonged to the middle or upper classes (Fig. 1). Finally, based on the inquiries provided to the guardians, the majority of the parents (83.80%) of the children in the research group were graduates, and 82.56% of the participants in the study claimed to brush their teeth with toothpaste and toothbrushes (Table 7).

**Conclusion**

The degree of cavities in teeth has increased in India throughout the preceding fifty years, both in quantity and intensity. Dental caries is a particularly commonly ignored oral health requirement in children, regardless of their disability, because they have a complex set of developmental obstacles that can complicate standard dental exams and therapy. Because of the obstinate character of this populace, significant neurological impairments such as autism can render scientific study difficult at times.

**Your Impression**

Following this article's analysis, people with genetic abnormalities play a vital and difficult role in the dental industry, particularly in the dental hygiene profession. In the dental hygiene field, an extensive amount of patient education is required, where the patient should be able to comprehend everything and establish a relationship with his/her clinician, feeling at ease, given authority, and in general, in an enjoyable environment that they can feel in adhering to different types of hygiene techniques to maintain their oral health care. Nevertheless, depending on the extent of their autism, an individual with neurological impairment and intellectual challenges may find struggling to get along with their clinician. The bodily sensations that accompany brushing the teeth can be sensory, tangible, which can make a person with autism feel uneasy and anxious, particularly when visiting a dental office during treatment using scalers or other instruments, which is why developing rapport with them is critical to reducing significant amounts of anxiety and easing their fears. Furthermore, a child with autism may be unable to communicate any pain or discomfort in their teeth or gums, making things even more difficult for them because they frequently face a lack of social skills in communicating.