

Comparison of Oral Health Status between Autistic and Normal Children in Ahvaz: A Case-Control Study

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Abstract

Introduction: Different studies examining the oral health condition of autistic children, and presenting inconsistent results. Regarding this, the aim of this work is comparison between children with autism and healthy normal in the case of dental caries.

Materials and Methods: This case-control study was performed on 48 autistic cases and 50 normal children in the age group 7 to 12 years. The age, gender of participants was documented. The situation of the decayed, missing, and filled teeth (DMFT; both permanent and primary) and also OHI-S index (simplified oral hygiene index) was evaluated. The Mann-Whitney U and Chi-square tests were used to analyze the results. P-value less than 0.05 were noticed remarkable statistically.

Results: Considerable difference was seen between autistic and normal groups regarding OHI-S index ($P=0.000$). In addition, there were remarkable difference between two groups regarding the DMFT index in the primary ($P=0.001$) and permanent ($P=0.00$) teeth. What is more, comparison with normal group, children with autism showed more needs in primary dentition ($P=0.002$).

Conclusion: The results of the study showed, there were comparable DMFT, dmft and OHI-S index between autism and healthy children. Whatever, the unmet dental needs of the healthy children in the primary dentition was lesser than autism children?

Keywords: Caries experience • Autism spectrum disorder • Disorders dentist • Autism

Introduction

Defined autism as a serious and complex disorder by developing the brain [1]. The most common features of autistic patients are related to weakness in communication, loss of contact, repetitive, stereotyped manner and lack of flexibility inherently [2]. Recently it reported that moderate age of autism is eighty years old from one out of every 68 children [3].

Corporation with dental clinic is a big matter due to Autism Spectrum Disorders (ASD) and cannot make contact with other social health care properly [4]. What is more other related symptoms such as cognitive dysfunction, the presence of aggressiveness, convulsions result in reduction of possibility of treatment on an outpatient basis [5]. It is worth mentioning that keeping the ideal oral care in ASD children must be considered, because existing oral care problems might intensify, therefore, overall quality of life of kids would be affected [6].

Research on people with ASD has reported that the numbers of people without caries are more than unaffected counter parts; yet, more patients with ASD did not have any tendency to cooperate so as a result, general anesthesia is needed for dental treatment [7]. It has been proved; there is no difference in caries statues between patients with autism in comparison with normal children [2, 8]. And some studies demonstrated a lower incidence of dental caries in autistic patients It has been demonstrated by autism in Iran is close to its global rate [9]. On the other hand, oral health and dental needs of children with autism must be the first priority. So, the aim of the present study was to evaluate the epidemiologic data on the oral care status of autism individual aged from 7 to 12 years old in Ahvaz, Iran, by exploring the oral health condition within the parameters of the DMFT, dmft, OHI-S.

Materials and Methods

Study population

Ninety-eight Children aged between 7 and 12 years are selected by stratified random sampling from different schools placed in the city of Ahvaz. Frothy-eight patients, whose parents or guardians were awareness of dental evaluation, were included in this study. Ethical acceptance for this work was given from the Ethical Committee of Ahvaz Jundishapur University of Medical Sciences (IR.AJUMS.ABHC.REC.1399.888) in Ahvaz: Iran.

According to Criteria of World Health Organization (WHO), caries was diagnosed between groups. Indicating the middle number of impressed and dentally treated teeth among children, DMFT index manifested decayed, extracted and filled teeth in the permanent dentition. Deciduous teeth were surveyed via dmft index for mentioned aim (D and d=decay in deciduous and permanent teeth; f and F=filling in deciduous and permanent tooth respectively; M=missing tooth in permanent dentition). Combination Debris Index and Calculus index made the OHI-S index (simplified oral hygiene index) [10], every suggested index reporting the volume of debris or calculus seen on the buccal and lingual surfaces of every of three parts of each dental arch according to 12 numerical determinations. The total sum divided with the number of groups to obtain OHI-S index for every patient

Data collection

SPSS software, version 24.0 (IBM, SPSS version 24) were used for statistical analysis and Statistical significance was set at $p<0.05$ (2-tailed) for all analyses. Mann-Whitney U and Chi-square tests were used to examine differences in morphological features between autistics and controls for continuous variables.

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Results

No other significant differences existed when age and residence were considered for children with an ASD. The age of the children ranged between 7 and 12 years with a mean age of 8.6 ± 1.5 years for autism and 8.39 ± 1.37 years for Control. In group of control the number of females and males were (n=29; 56.9%) and (n=22; 43.1%) respectively, while male participants in autism group were (n=48; 94.11%) and female were (n: 3; 5.88%) (Table 1).

	Male	Female	Mean age
Autism	48	3	8.6 ± 1.5
Normal	29	22	8.39 ± 1.37

Table 1. Prevalence of autism based on gender.

	Sig.(2-tailed)	Z	Mann-Whitney U-test	Autism	Healthy
DMFT	40.600	59.16	744.500	-3.296	.001*
dmft	34.53	65.74	435.000	-5.454	.000*
OHI-S	35.02	65.21	460.000	-5.493	.000*
dmft/DMFT	31.76	48.03	481.500	-3.093	.002*

Table 2. Clinical observation of teeth by means of caries index among autistic and non-autistic children. $P < .05$ as compared to control group.

Discussion

Scientist defined Autism as a congenital neurological that induces impairments in communication, social interaction, and behavior repertoire. This will induce the autistic child problems in its interaction with adults and other children [11,12]. So advantageous oral health advanced technique must be performed for promoting the oral health condition of children who suffer of autism. This study aimed to compare some parameters of caries among two different groups.

Our data showed there are significant differences in OHI-S between kids with autism and non-autism while, other studies did not report any statistically significant differences in the outbreak of caries rate compared to normal people [13, 14]. Patients with autism demonstrated more rates of caries which was statistically outstanding. Reported that negative behavior could be a main excuse for not having access to dental care [15]. Children with autism usually have problems in both mobility and following oral hygiene practices such as tooth brushing individually [16]. Regarding to this point, the role of parent/caries is needed.

Dental treatment for ASD children are hard, complicated and may be anxious for children and their parents, as well as to the dentists [14, 17]. So, the feature of the disorder and base the method for treatment on the children's unique behavior patterns and sensitivity must be understood. According our finding children with autism demonstrated considerable significant of DMFT and dmft than other group contrary, a project performed by Namal, oral condition of 62 children with autism was surveyed and the results were that those patients demonstrated lower DMFT amount, while they missed permanent teeth more than other healthy cases [2].

It seems autistic children prefer to have soft and sugary foods, maintaining food in mouth and careless about oral hygiene which result in caries in many times.

Oppositely, the few studies explaining how the prevalence of dental care is actually performs for children with an autistic disorder. Therefore, likeness in dmft and DMFT values mention that other items might have an effective role.

The autistic children were more difficult to treat and had a greater need for specialized dental care. The access to a pediatric dentist when

Mean OHI-S

Mean of OHI-S in the autistic patients, were 65.21 that was upper than normal group 35.02 (Table 2).

Mean DMFT and dmft

DMFT index in autistic patients was 59.16 and controls 40.60. Patients with autism showed a statistically significant in DMFT index ($p \leq 0.001$). In addition, it has been demonstrated, the ASD children notably showed more dmft index (65.74) than control group (34.53).

Higher amount of d/D index among different groups documents high rate of untreated dental caries among the ASD children. All results summarized in Table 2.

the need arises is therefore important. Sedation with nitrous oxide-oxygen worked well in two children but not at all for two other children. A high sensitive to the sound level may explain the difference [13]. In comparison autistic children with non-autism, the former must be considered furtherly for oral care. Regarding this issue, meeting knowledgeable dentist who using cutting edge strategies with well-equipped dental facilities should be achievable. Making progress in educational level of those children regarding oral hygiene could be effective in reduction of their problems. Additionally, parents, educators and dentists must be increase their information.

Conclusion

The result of present study showed, comparing children with ASD and non ASD, the former group have represented higher dental caries prevalence. Parents and health care staff must be raising their awareness about oral health of autistic children to improve child health. The autistic children were more difficult to treat and had a greater need for specialized dental care.

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