Oral Health Status of Children with Disability Living in Albania

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ABSTRACT

Introduction: This study was carried out at nine (9) special schools for disabled children in Albania. The aim of the study is to determine the caries prevalence and oral hygiene status of children with different disabilities attending different schools for disabled at Albania.

Methods: Participants are grouped according disability Autistic Spectrum Disorder, Down syndrome, Cerebral Palsy, Mental Retarded, Blind, Deaf-Mute and age group (0-5, 6-10, 11-14, 15-18 years old children). Caries and oral health status were examined and assessed according WHO 1997 criteria.

Results: Overall caries prevalence at permanent dentition for all groups is 85.3% and for primary dentition 72%. The mean deft index is 3.4 ± 3.5 (p≤0.029), mean DMFT= 4.9±4.6 (p≤0.001) with significance difference across type of disability (Kruskal-Wallis test) for both dentition. The mean OHI-S of total population is 1.91; there is significant difference across disability type (p≤0.001, Anova test) for OHI-S index. In total 43.2 % have good, 49.4% fair and 7.4% bad oral hygiene.

Conclusions: The subjects in this study had a high prevalence of dental caries, poor oral hygiene and need for restorative care.

Key words: caries, oral health, disability, hygiene.

1. INTRODUCTION

Dental caries remains today the most common infectious disease which affects most of the population regardless of age. Caries prevalence is high, and oral hygiene is not good, in poor and developing countries as well as Albania. Several studies have noted that children with disabilities have higher levels of caries, periodontal diseases, and much higher proportion of untreated lesions but less treatment than children without disabilities. Oral health of these children depends on age, type of disability, severity of impairment and living conditions. Other factors that cause high caries prevalence, poor oral hygiene and high proportion of untreated lesions are parents and caregivers lack of information, knowledge and care about oral health of disabled children (1), their socio-economic status and education level. Many individuals with special needs may have great limitations in oral hygiene performance due to their manual dexterity, sensory and intellectual disabilities (5), and so are prone to poor oral health. Different studies carried out for caries prevalence at disabled children comparing that without disabilities shows contradictory results. The aim of this study is to determine the caries prevalence and oral hygiene status at children with various types of disabilities attending different schools for disabled children in Albania.

2. MATERIAL AND METHODS

The study population consists of 638 children aged 3-18 years old from 9 special schools of Albania located at six (6) different cities, the survey sample comprise 599 (94%), six (6) percent were absent during the examination sessions. Informed consent of parents or guardians and school authorities was obtained before the subjects were included in the study. Children that were not cooperative or whose parents have not given consent are excluded from the study. Clinical examinations were carried out at schools, in a school medical room or classroom with natural light. Subjects were placed lying down supine on a desk or an examination couch. The examinations were carried out with the aid of an ordinary mouth mirror and a WHO ball and CPI- tip probe. The data for each subject were recorded on the standard WHO, however several changes were made and special survey form has developed. Children are divided in different groups according type of disability. For each individual dental caries and treatment need is assessed for primary and permanent dentition using deft, defs, DMFT, DMFS indices. Oral hygiene status is calculated using the Simplified Oral Hygiene Index (OHI-S) of Greene and Vermillion. The oral hygiene of each child was classified as ‘good’ when the OHI-S score was 0–1.2, ‘fair’ when it was 1.21–3.1 and ‘poor’ when it was 3.11 up to 6. Children are visually examined for dental hygiene and by passing CPI probe parallel to the buccal and lingual surfaces for the presence of plaque. Data analysis was conducted in SPSS, version 17.0. Chi square test and Fisher’s exact test were used to compare the proportions of categorical variables. On the other hand, ANOVA (analysis of variance) and Kruskal-Wallis test were used to compare mean values of numerical variables between disability groups.
3. RESULTS

Ninety-four percent (94%) or 599 of 638 subjects responded to the call for screening. The mean age of population is 12.00(6.00) years old (Table 1). According of type of disability 84 (1.8%) subject had autism specter disorder, 217 (36.2%) are mental retarded, 26 (4.3%) had cerebral palsy, 147 (24.5%) are deaf-mute, 34 (5.7%) have Down syndrome, 91 (15.2%) are blind (Table 1). Seventy-two (72%) had caries at primary dentition (Tab 2). Down syndrome group has the lowest caries prevalence (54.5%) and cerebral palsy group the highest (83.3%) at primary dentition (Table 2). The mean def(t) of total sample was 3.4±3.5 and children with Down syndrome def(t) = 1.9±2.7 the lowest value (Table 3).

| Disability type    | Primary dentition caries prevalence (%) | Permanent dentition caries prevalence (%) |
|-------------------|----------------------------------------|------------------------------------------|
| Autism            | 73.8 (26.2)                            | 60 (40)                                  |
| Mentally retarded | 74.2 (25.8)                            | 89.8 (10.2)                              |
| Cerebral Palsy    | 85.3 (16.7)                            | 72.7 (28.3)                              |
| Deaf Mute         | 65.9 (34.3)                            | 88.4 (11.6)                              |
| Down Syndrome     | 54.5 (44.5)                            | 75 (25)                                  |
| Blind             | 81.9 (18.1)                            | 91 (9)                                   |
| Total             | 72 (28)                                | 85.3 (14.7)                              |

Table 1. Number and percentage of participants by disability type and age group

| Disability type    | Number | Column percentage | Median age (IQR) in years |
|-------------------|--------|-------------------|--------------------------|
| Autism            | 84     | 14.0              | 8.0 (4.0)                |
| Mentally retarded | 217    | 36.2              | 13.0 (5.0)               |
| Cerebral palsy    | 26     | 4.3               | 5.75 (6.00)              |
| Deaf-mute         | 147    | 24.5              | 13.00 (6.00)             |
| Down syndrome     | 34     | 5.7               | 12.50 (7.00)             |
| Blind             | 91     | 15.2              | 12.00 (4.00)             |
| Total             | 599    | 100.0             | 12.00 (6.00)             |

Table 2. Caries prevalence at primary and permanent dentition by type of disability

Table 3. Mean values of DMF(T), DMF(S), def(t) and def(s) by disability type

There is statistical significance difference among types of disability (p<0.001, Chi square test) for OHI-S index (Tab 4). Forty-three (43.2%) of total sample has good oral hygiene, 49.4% fair and 7.4% bad oral hygiene (Table 4).

4. DISCUSSION

According to recent literature, individuals with disability have poor oral health and high treatment need in comparison with people without disability. In our study dental caries prevalence at permanent dentition is 85.3 % (Tab 2), children with autism specter disorder has the lowest caries prevalence (60.0%) and blind children has the highest (91.0%) (Table 2). The mean DMFT for the total sample is 4.9±4.6 while the mean DMFS is 9.6±12.9 (Tab 3). Mentally retarded children has the highest DMFT/ DMFS index (DMFT=5.8±5.2, DMFS=13.2±17.3) and children with autism specter disorder the lowest DMF/DMFS index (DMFT=2.6±3.2, DMFS=4.5±7.8) (Tab 3). There is significant statistical difference between disability types for both DMFT/DMFS index (p<0.001, Kruskal-Wallis test) (Table 3). The mean OHI-S index of total population is 1.9 (Table 4), children with cerebral palsy has the best oral hygiene with mean OHI-S index and deaf-mute children the worst oral hygiene with mean OHI-S index 2.25 (Table 4).
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We found that children with disabilities have high caries prevalence and poor oral hygiene. Our mean OHIS index is 1.91, which is lower than that found by (19, 22). According to the type of disability, oral hygiene status is not always consistent, and there is a significant difference between types of disability.

| Disability type | OHIS plaque (mean value) | OHIS calculus (mean value) | Sum of OHIS (mean value) | P-value (column) |
|----------------|--------------------------|----------------------------|--------------------------|------------------|
| Autism         | 1.12                     | 0.14                        | 1.27                     | <0.001           |
| Mental Retarded| 1.61                     | 0.34                        | 1.96                     | <0.001           |
| Cerebral Palsy | 0.92                     | 0.05                        | 1.05                     |                  |
| Deaf-Mute      | 2.25                     | 0.17                        | 2.42                     |                  |
| Down Syndrome  | 1.75                     | 0.24                        | 1.99                     |                  |
| Blind          | 1.49                     | 0.13                        | 1.62                     |                  |
| Total (N=)     | 1.68                     | 0.22                        | 1.91                     |                  |

CONFLICT OF INTEREST: NONE DECLARED.

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