Original Article

Dental status and DMFT index in 12 year old children of public care Centers in Tehran

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Objectives: Dental caries is a public health problem that affects pre-school and school children throughout the world. Poor oral health profoundly affects a person's quality of life. Information on caries prevalence and severity represents the basis for caries prevention programs and indicates treatment necessity in the population. The occurrence of permanent teeth caries particularly in non-industrial societies, seems to be high;The aim of this study was to present the prevalence of dental caries inunder supervision 12- years old children living in Tehran and to assess the influence of the factors which are related to their oral health.

Method and Materials: This cross-sectional study was carried out on 113 undersupervision children.The clinical examinations focused on dental status, expressed as DMFT (Decayed, Missed, Filled Permanent Teeth) index,following WHO standards methodologies. Clinical examinations and personal interviews to investigate the related factors to oral health were conducted by a single investigator.

Results: The level of DMFT was estimated at 1.32±0.86. Among the relevant factors, the reason for visiting the dentist ($p<0.0001$) and duration of stay in the center ($p<0.04$) had a meaningful relation to DMFT index of more than 2.

Conclusion: The community under the research has a good condition as compared with the WHO goal. Further studies are recommended due to meaningful relation between DMFT index and the reason for visiting dentists as well as the duration of stay in the center.

Keywords: DMFT index, Oral health, Governmental Round-The-Clock Centers, under-supervision children

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Introduction

Dental caries is a public health problem that affects pre-school and school children all around the world, leading to pain, chewing difficulties, general health disorders, speech and psychological problems, and poor quality of life (1-4). Insufficient oral health profoundly affects a person's quality of life (5, 6).Information on caries prevalence and severity, shows the basis of caries preventive programs and indicates treatment necessity in the population (7). Measures of caries prevalence are indexes of decayed (D), missed (M), and filled (F) permanent teeth (T) or surfaces (S), ie, DMFT or DMFSindex (8). For the first time at a national level in 1995, the mean DMFT of 12 year old Iranian children was 2.0, which indicated that the oral health status of this age group could be classified in the low range (mean DMFT 1.2-2.6) compared with other countries worldwide. In second national survey in 2004 the mean DMFT for 12 year old Iranian children was

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1.9 and this was consistent with the oral health goals set by the World Health Organization (WHO) for 2010, albeit far from the goals set for 2020 (9).Considering the condition of special groups (such as under supervision children) in every society is essential to estimate the real health situation. The risk of caries significantly increases among adolescents with a high consumption of cariogenic snack and low oral hygiene. It is also influenced by maternal socio-economic background and educational level (10), as well as dietary, hygienic, and other socio-economic factors indicating the importance of preventive educational programs and a comprehensive caries prevention scheme for children (11).

The aim of this study was to assess the caries prevalence in 12- years old under supervision healthychildren living in governmental round-the-clock centers in Tehran and to assess the influence of the factors which are related to their oral health by using the indexes for decayed, missed, and filled teeth (DMFT).

Method

This cross-sectional study was based on clinical data from clinical examinations and questionnaire. Study sample consisted of all the113 twelve year- old children (80 male,33 female) residing in the public round-the-clock centers of Social Welfare Organization because of having no headman, in Tehran province (consisting Tehran, Shahre-Ray, Shemiranat) in 2007-2008.By an interview with each child's caregiver and using medical information records these data were collected in a questionnaire: sex ratio (male/female),duration of staying in the center (less than3 years/3years and more), frequency of tooth brushing (once a day or more/ never or occasionally) and time of tooth brushing (after each mealtime/before bed time), frequency of dental visits (sometimes/never or when he or she had pain), date of last dental visit (during last year/more than a year ago or not at all),cause of dental visit (checkup/pain), frequency of snack consumption (never/less than 3 times a day/more than 3 times a day), time of snack consumption (after main course/between meals), occlusion related factors (crowding/ spacing), oral hygiene instructor (parents/dentist/center's caregivers).

Before starting the examination process, there was a 20-30 minute communication to motivate the children, then each subject was examined separately with a trained examiner, in a room with adequate light, using a disposable mirror (Atlas Co., Iran), a disposable explorer (Atlas Co., Iran),a torch (Philips co, Germany) and a sterile cloth (to remove material alba and debris from the teeth). The study protocols were approved by the Research Committee of Faculty Research Section. To determine the intra-examiner reliability, 10% of the total samples was reexamined during the data collection (Kappa=0.98). Then the level of DMFT measured among the subjects with 95% confidence interval. The effect of related factors on DMFT was studied with chi-square test, the significance level was considered as P Value <0.05.

Results

Of the 113 children examined, 35.4% were caries free and 16.8% had DMFT of 2 or more. Of total DMFT, 46.4% were due to decayed (D), 2.6% due to missed (M), and 51% due to filled (F). The mean level of DMFT was estimated at 1.32±0.86.Considering the normal variations, the studied community had normal distribution. Chart 1 shows the mean D,M,F and DMFT for each child.

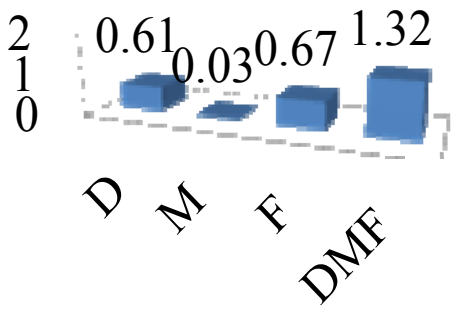

Chart 1.Mean D,M,F and DMFT in the children

In 3 sections of Tehran province: Shemiranat, Shahre-ray, and Tehran DMFTswere: 1.66±1/02;1.33±0/17, and0/90±0/27 respectively as is showed in Table 1.

Table 1. The mean DMFT in governmental round -the - clock centers children of social welfare organization in cities of Tehran province

Tehran Province	Tehran	Shemiranat	Rey	Place of Study
1.32	1.33	1.66	0.9	DMFT

The most common time of tooth brushing was before bedtime. Most subjects were learned oral hygiene instructions from a dentist.

Data analysis indicated that there was no statistically significant relation between the level of DMFT and

frequency/time of tooth brushing, frequency of dental visits, date of last dental visit, occlusion related factors (crowding/ spacing) and oral hygiene instructor. But there was a statistically significant relation between DMFT and the duration of stay in the center ($P< 0.001$) and the cause of dental visit ($p<0.04$).

Diet schedule in all centers were almost similar following three main course schedule. Snacks were not included in diet schedule in all centers, and the frequency of consuming snacks among the children was not exactly measurable. Because the children, may had snacks from the sources out of the centers as donations and also they were not reliable to talk about the frequency of use.

Discussion

In this study which was aimed to determine the DMFT status of 12 years old children, living in public round-the-clock centers of Social Welfare Organization of Tehran in 2008, the mean DMFT was estimated 1.32±0.86. In this study 35.4% of subjects were caries free and 16.8% had DMFT of 2 or more. So, according to goals of WHO in 2010 (that 12 Y/O children should have DMFT less than 2), it seems that the subjects were in desirable status. (12)

Many studies as Island 1998 (DMFT=1.5) (13), Portugal (DMFT=1.85)(14), Spain (DMF T=1.12)(15), Algeria (DMFT=1.63)(16) have reached the same results as this study. But there are also some studies that have shown lesser level of DMFT as England (DMFT=0.86), Bangladesh (DMFT=0.97) and South Africa (DMFT=0.25). These differences may be due to difference in race and geographical region, research methodology sample size, sampling method, examination instruments or applying preventive dentistry for under supervision children in some countries. In this study about 51%of mean DMFT score of the surveyed children, was contributed by restored teeth (Filling/F), however in some studies as in England (17), Jordan (18), two studies on12 year old children in Gorgan in 2006 and in Robat-karim in 2001in Iran, DMFT score was most contributed by Decayed teeth (D)(19). This shows that the surveyed community has better oral care which leads to repairing and filling the decayed teeth.

In this study there were no relations between DMFT and the variables of frequency and time of tooth brushing, frequency of dental visits, the date of last dental visit, occlusion related factors and oral hygiene instruction. Other factor as duration of stay in the center and the cause of dental visit showed significant relation with DMFT score. The children, who had DMFT score more than 2, have been lived in the centers for 3 years and more and this correlation was statistically significant; It must be mentioned that the researchers did not have any access to the pre-admission medical and hygiene history of participants, including dental health status. But it should be assumed that access to carbohydrates was limited due to low income. Although they have yet better DMFT in comparing with 12 years school children in Tehran. Results also show those children in whom pain was the cause of dental visit had 6.2more time chance of having DMFT score more than 2 that is expectable.

In a study on 13-18 year- old under supervision adolescents in Tehran in 1996, no relation was found between frequency and time of tooth brushing and the source of oral hygiene learning with DMFT. In another similar study in 1997-98 in Tehran, there was a significant relation between frequency of tooth brushing and frequency of dental visits and the DMFT score, but the oral hygiene instruction history and the time of living in the center had no significant relation with DMFT. V arasteh et al, showed the opposite finding in a research in 2003 (19).

Our result indicated that the mean DMFT score in Shahr-e-Rey is higher than Tehran and in Tehran DMFT score is lower than Shemiranat. This is also indicated in a same study in 1997 (19).

Because of a significant relationship between duration of living in the centers and DMFT scores, more surveys are recommended to investigate this correlation. Also, more attention to pay about oral health and care in these children is advisable.

Conclusion

As there was no relation between the variables of oral hygiene instructor, frequency and duration of tooth brushing, frequency of dental visits and DMFT, and according to high number of decayed teeth (D factor in DMFT) and also a positive relation between the duration of living in center and DMFT score more than 2 in surveyed children, we can conclude that the lower DMFT score of children living in Boarding Centers of Social Welfare Organization of Tehran in 2008 was due to their diet regimens and lack of snacks between meals in these centers, and not because of more preventive interventions.

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