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ORAL AND DENTAL HEALTH STATUS AMONG THIRD GRADE ELEMENTARY SCHOOLCHILDREN

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ABSTRACT

BACKGROUND AND AIMS: *Being healthy, depends on consideration and planning of all its influencing factors. Being one of the PHC parts, Mouth and Tooth Health has been recognized as one of the eleven 21st century slogans. DMFT is a simple, fast-reaching and reliable index in determining Mouth and Tooth Health situation. Third - grade elementary school students' age is a period between deciduous and permanent teeth existence during which mixed teeth can be seen and DMFT determination is possible. This study was done to find students' oral and dental health status by using DMFT index in Iranian Gonabad city in 2008.*

METHODOLOGY: *All third grade elementary school students (N=529) living in Gonabad were examined and interviewed under the supervision of dentists in this descriptive, cross-sectional study to find their Tooth and Mouth Health situation. Various data gathering techniques were used in the study such as DMFT index checklist, questionnaire, disposable mirror and special catather. The data were analyzed by SPSS software using T-Test, correlation coefficient and ANOVA.*

RESULTS: *The findings showed that 51.2 percent of students were boys and 48.8 percent were girls. 77.3 percent and 77.3 percent of them used tooth brush and dental floss, respectively. Their dmft was 3.86±1.11 and DMFT 1.04±0.22 showing significant differences between two sexes. Moreover, 8.3 percent of students did not have any decayed tooth. One-Way ANOVA showed a significant relation between brushing times and the related index. It was also found that parents' educational level and family size had significant relation with DMFT results.*

CONCLUSION: *The results showed that third class elementary school students living in Gonabad followed nationwide patterns and their mouth and tooth health situation was rather suitable. CF did not have any significant relation with nationwide range but this is at the average level in accordance with WHO goals. It seems necessary to conduct planned measures to promote KAP and prepare essential resources and also review the administration method and cost -effectiveness of some measurements such as Fluoride therapy.*

KEY WORDS: Tooth and Mouth Health, DMFT Index, CF Index, ANOVA.

INTRODUCTION

Tooth decay is the bacterial disease of calcificated tissues identified by demineralization of different non-organic parts and ruining of tooth organic material. Tooth-decaying factors can be classified like those of other infectious diseases. These include host-related factors (salivary combination, tooth dexterity) environmental factors (nutrition, fluoride) and micro organisms [(1)].

Research shows that tooth decay is a multi-factor disease affected severely by numerous factors such as parents' education, economical status of the family, family size and oral and dental hygiene [(2)]. This is the most widespread disease among people; 99% of the world population catch it and few persons are not affected by it during their lives [(3)]. Tooth-related decay is still one of the main problems in dentistry and special attention must be paid to it in current remedies. Both repairing procedures and preventive measures will have to be planned so that tooth decay might be decreased [(4)].

The most important index to demonstrate tooth decay rate in people is DMFT average. The number of decayed, filled and extracted teeth of all people in the society should be counted and their averages be calculated in order to find the community DMFT. DMFT Average is a simple, easily-reachable and measurable index in dentistry which has been used for some decades. If one wishes to illustrate deciduous teeth situation, the index is

represented by "DMFT" although calculated in the same way as mentioned above. Other significant indices consist of DMFS, OHI, and the percentage of people without any decay (especially for children) (CF) [5].

Oral and dental hygiene are considered so important in fulfilling and promotion of health that it has been one of the outstanding slogans in 21st century [6]. On the other hand, complete recognition of teeth situation and therapeutical needs of different age groups is one of the most considerable matters in health-theraputical planning. The necessity to have correct data on the basis of international standards comparable to other ones has been taken into consideration by researchers and planners.

In other words, determining various indices related to Oral and dental hygiene status in different age and social groups and at some time periods is so essential that a rather perfect view of the present condition must be developed to construct the foundation of comparing the planned aims of Federation Dentistry International (FDI) until the year 2010 [7].

Knowing DMFT and other indices allows the communities to develop their programs to improve prevention and treatment. For instance, school programs promoting non-decayed tooth index in children focus on Fluoride consumption in Greece [8]. The same task is carried out in Sweden. WHO research committee was organized in 1993 in Geneva to monitor oral health status which emphasizes fluoride consumption. This organization also stresses controlling regularly the tooth and mouth health every five years in all countries [9].

Measuring DMFT index is conducted by Iranian Oral and Dental Hygiene Office every four to five years in Iran along with Iranian Health and Treatment Ministry and WHO policies from 1998 in 3, 6, 9, 12 year-old age groups. Lebanon has the highest DMFT level (5.7), Pakistan owns the lowest one (0.9) and Iran gets the average level among countries of EMRO region [10]. The results of nationwide studies showed that DMFT average level in Iranian 9 year-old children is 3.35 and DMFT is 0.97 most of which is related to tooth decay index [10]. In accordance with WHO report, in the year 2000 the mean of DMFT and DMFT in Iran was about average so that they were in the lowest level in Bushehr and Yazd cities and at the highest in Zanjan and Sahrekord cities [1].

Since children are the most susceptible groups against tooth decay and have the highest rate of incidence, determining DMFT and its influencing factors is one of the foremost aims of various researches in different countries. The same studies have been done in Iran. Unfortunately few of dmft studies have dealt with 9-year old children, whereas the rate of DMFT studies on 12-year old children has been reported to be higher. Therefore, this study was carried out to determine oral and dental health status especially DMFT and DMFT indices of 9 year-old children living in Iranian Gonabad city in the year 2008.

TABLE 1:
DMFT & dmft INDEX IN ACCORDANCE WITH DAILY BRUSHING TIMES IN STUDIED GROUP

Brushing Times	Number	Percentage	dmft	P- value	DMFT	P-value
No use	120	22.7	5.88	P=0.015	2.47	P=0.031
One time	199	48.65	4.12		1.02	
Two times	135	33.01	3.23		0.55	
Three times	75	18.34	2.09		0.21	

TABLE 2:
AVERAGE OF DMFT AND dmft INDEX IN STUDIED GROUP.

	Decayed Tooth		Missed Tooth		Filled Tooth	
	D	d	M	m	F	f
Average	0.78	2.62	0.17	0.77	0.09	0.47
Standard Deviation	38.0	1.65	0.18	0.96	0.12	0.84

TABLE 3:
COMPARISON OF DMFT AND dmft INDEX AVERAGE IN ACCORDANCE WITH SEX IN STUDIED GROUP.

Index	Sex	Average	Standardized deviation….	T independent Test Results
dmft	Boy	3.74	1.07	P= 0.12
	Girl	3.99	1.16	
DMFT	Boy	1.02	0.17	P= 0.18
	Girl	1.07	0.28	

TABLE 4:
CORRELATION OF DMFT & dmft IN STUDIED GROUP

	DMFT	
	r=0.537 P<0.001	dmft

MATERIAL & METHOD:

This was a descriptive and cross-sectional study which was carried out on third-grade elementary school students living in Gonabad city. All of the students at this level (529 ones) were selected. The reason to choose this level was that 9 year-old age period is the last period of deciduous teeth existence and is a suitable time to assess decay severity of permanent teeth and also monitor oral and dental hygiene status after conducting interventional measures for students. In Iran oral and dental hygiene status monitoring for children is done in 3, 6, 9 and 12 year-old age groups.

DMFT and dmft indices must be measured in 9 year-old children due to mixed tooth period (DMFT and dmft). DMFT and dmft include D(d) representing decayed teeth whose color is changed or special catather inserted into them and caught. M(m) represents missed teeth which are extracted due to being decayed. F(f) represents filled teeth which are repaired because of decay. The data-gathering method included observation (examination), interview, registration of data and also DMFT index

checklist. The researchers referred to schools after having authorization from the authorities. Then the students were informed of the aims of the research and their teeth were examined by dentists in a suitable place; questionnaire were filled in and collected through organized interviews. Various tools were used in this study including: absolang, disposable mirror, torch, and special catather. The data were then analyzed by SPSS software using statistical central value, Independent T-test, correlation coefficient and One-Way Analysis of Variance.

RESULTS:

Of the 529 participants in this study, 48.8% were girls and 51.2% were boys. 77.3% of these students brushed their teeth while 22.7% did not. Only 8.32% of students used dental floss as a useful technique to keep their teeth healthy. The percentage of brushing teeth by the students' parents was as follows: 11.53% fathers, 30.81% mothers and 13.99 both parents brushed their teeth on a regular basis. On the other hand, 43.67% of the parents did not brush their teeth at all.

The results showed that the average of dmft and DMFT were 3.86±1.11 and 1.04±0.22, respectively which are shown in table two. There was not any significant difference between DMFT and dmft average with their nationwide average.

The results showed that index percentage of children without any decay (Caries Free) was 8.3%. T-test did not illustrated any significant relation between two sexes (Table no.3).

The results of the study showed that dmft index decreased significantly as parents education level increased (P=0.04) so that it was 4.3 in children whose parents' educational level was at elementary level and reached 2.2 for children whose parents had high educational level. On the other hand, dmft index increased as family size increased (P=0.031).

In addition, correlation coefficient showed a significant relation between dmft and DMFT indices in children' group (Table No.4).

On the basis of conducted examination, 28.92 percent of children need to have their decayed teeth extracted, 66.35 percent of them should have them filled. Moreover 6.6 percent had unhealthy gums.

DISCUSSION:

The present study showed that dmft index average among the participants of this study is 3.86±1.11. This grade does not show any significant difference in comparison with nationwide dmft average which is 3.35±0.01 (P=0.08). DMFT average (1.04±0.22) does not illustrate significant difference with nationwide DMFT average (0.97±0.05) as well (P= 0.071). DMFT and dmft averages in this study were the same as those achieved in, D. Safavi [10] and H. Nurelahian [11].

On the other hand, the Independent T-Test did not show any significant difference in dmft and DMFT indices in two sexes. So that dmft and DMFT averages in boys were 3.74 and 1.02, respectively and in girls were 3.99 and 1.07. These results are the same as those found in L. Basir [12], N. Memar [13], S.S. Ashrafizadeh [14] and L. Tumarian [15]. DMFT and dmft means in the girls were a little higher than those of boys in this study and the above-mentioned ones, but this difference was not significant.

22.7% of children did not brush at all. 17.5% of children in. M. M. Fanis' study did not brush either [16]. In their studies, S.S Ashrafzadeh and L. Tumarin report this figure to be 21% and 32.7%, respectively [14, 15]. According to N. Memar, if the quality and method of correct brushing had been considered, this number might have exceeded the present one [13].

The result of One-Way Analysis of Variance showed that there was a significant relation between dmft and DMFT rates and brushing times so that when brushing times increased, the rates of these indices decreased too. These results are in line with N. Memar' results [13]. Despite a decrease in DMFT rate, there was not any significant relation between this index and an increase in brushing times in M. Ghandeharimotlagh study [17].

The percentage of children without any decayed tooth (CF) was 8.3%. In this study, there was not any significant difference between this index and nationwide one (11.5%) (P=0.21). CF index was 10.7% in L. Tumarian's study [15]. Boys and girls' CF index were 8.1% and 8.5%, respectively which did not show any significant difference between two sexes despite its being higher in the girls (P=0.12). The same results in this index were verified in B. Ajami [18] and H. Nurelahian [11]. CF index in 9 year-old children is very low due to mixed dental period because both deciduous and permanent teeth may be decayed leading to CF decrease in 9 year-old children.

In spite of rather acceptable indices of using brush, the percentage of dental floss usage was considerably low in this study (8.32%). These results are the same as those in S.Ashrafizadeh (7.5%) and L. Tumarian (11%). It seems that using dental floss is not widespread among Iranian families and that nationwide training should be conducted to promote this useful technique and those members of the society should have access to it in order to improve their oral and dental health.

The present research shows that dmft of students whose parents' educational level is higher (2.2) is considerably lower than students whose parents' educational level is elementary (4.3) (P=0.04). This result was similar to those of N. Memar [13], A. Davari [19], K. Salem [20] in that DMFT and dmft rates decreased as parents' educational level went up. It seems that this variable affects dmft from two aspects, in which increasing parents' knowledge level is the more important of the two. This fact is also proved in Downer [21], WK. Seow and A. Amaratungo [22], D. Ajabi and MA. Hamdan [23] which have been conducted in Poland, Australia, Jordan, respectively. The other influence of parents' educational level in Iran is that families with higher education usually enjoy suitable economical situation which in turn leads to the promotion of their children's' oral and dental health status. Moreover, it has been proved that there is a significant relation between referring to dentistry and parents' educational level in other similar studies. In contrast, an increase in family size leads to a decrease in knowledge which makes the economical situation even worse with the consequence that less attention is paid to taking care of children. In the present study, like those of M. Ghandeharimotlegh [17] and M.M. Fani [16], dmft increased as family size increased, showing a significant difference between the two variables (P=0.031)

Pierson correlation coefficient demonstrated that dmft and DMFT increase simultaneously (direct significant relation). Therefore, it is of paramount importance to consider the issue that taking care of deciduous teeth leads to the improvement of the health of permanent teeth, which is against the public opinion that deciduous teeth health does not deserve much attention due to their permanent nature.

CONCLUSION:

Based on the findings of this study, mouth and teeth health situation among 9 year-old children in Gonabad city is rather acceptable in comparison with nationwide situation, but it lies in the average level with regard to WHO criteria. Therefore, it is necessary to consider fundamental alternatives and rapid planning to prevent tooth and mouth diseases due to the high population of students in Iran. It is, therefore, hoped that fundamental measures be conducted in future through the efforts of Iranian high ranking officials in Health and Treatment sector, and dedicated and experts

and researches.

In conclusion, it is suggested that remedial health courses be held in elementary schools for both students and health trainers and teachers. Regarding the society, it is suggested that oral and dental health education be done for the families while emphasizing fissur sealant treatment, proper distribution of health and preventive devices like brush, toothpaste, dental floss and so on. It is also considered vital to not overlook cost-effectiveness of activities regarding oral and dental hygiene.

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