Original Article

Dental Health Status in 3-5 Year Old Kindergarten Children in Tehran-Iran in 2003

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Abstract:

Statement of Problem: Assessing oral hygiene in children plays an important role in determining the health status of communities and evaluating national health promotion programs. In 1997 in Geneva, international organizations agreed on the global goal of achieving a minimum of 90% caries free teeth in 5 year old children.

Purpose: This study was aimed to assess the oral health status in Iranian children.

Materials and Methods: Among kindergarten children residing in the capital of Iran, Tehran, 400 children between the ages of three and five years were randomly selected and participated in this study. Their deciduous teeth were examined and the health index of dmft was determined for each child. The collected data were analyzed using the one-way ANOVA (with Tukey–Kramer multiple comparisons test for Post Hoc test), t test, and chi square test.

Results: In this age group, only 48.3% of the children had no tooth decay. This information shows how far we are from accomplishing the aforementioned goal. A significant increase in tooth decay in these children was correlated with neglecting oral and dental hygiene, and also failing to brush the teeth regularly and wash the mouth after consuming sweets ($P<0.001$). Unfortunately, visits to dentists for regular check-ups are not frequent enough, and dental caries was seen more in children who did not have regular visits than those who did ($P<0.001$).

Conclusion: More accurate planning seems necessary to achieve 90% caries free teeth in 5 year old children. More emphasis must be placed on prevention programs and educating public to observe dental hygiene by brushing the teeth regularly, washing the mouth after consuming sweets, and paying their dentists regular visits.

Key Words: Deciduous teeth; dmft; Caries free; 3-5 years old children

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INTRODUCTION

Dental caries is a chronic infectious disease which unlike other infectious diseases, can not be stopped with antibiotics. The World Health Organization (WHO) and the FDI World Dental Federation have recommended that all countries emphasize on oral and dental hygiene education programs [1].

In 1961, the dental and oral hygiene experts of WHO set certain standards according to which reports concerning oral and dental diseases can be compared. In 1969, "the mean number of lost, filled, or decayed teeth" was assigned as an important measure of health, and since then, it has been used to evaluate the dental and oral health status in different communities [1]. In 1981 at the Rio de Janeiro convention, achieving a minimum of 50% caries free 5

year old children by year 2000 was decided on, and in 1997 in Geneva, this percentage was determined 90% for 2010[1].

Every year, many studies are executed around the world to assess the accomplishment of these goals. This study was designed for the similar purpose; to evaluate the oral and dental hygiene in 3 to 5 year old children in Tehran.

MATERIALS AND METHODS

In a cross-sectional study, four hundred children, aged between 3 to 5 years old, were selected randomly (stratified Random Sampling) from public kindergartens in Tehran. Their deciduous teeth were surveyed by an examiner with a mouth mirror and explorer, and results were recorded in especially designed forms. Other information about each child was provided by their parents or kindergarten authorities. Parents were also interviewed to determine the economic status of families.

The different indices determined in this study include:

dmft: the total number of decayed (d), extracted (m), and filled (f) teeth among the 20 deciduous teeth. The mean of dmft is usually calculated as a health index. If the dmft in a person is zero, he or she is considered caries free.

In this study, the collected data were analyzed using the One-Way ANOVA (with Tukey – Kramer multiple comparisons test for Post Hoc test), t test, and chi-square test.

RESULTS

In the 400 children whom were participated in this study, 779 decayed teeth (d=1.94), 175 filled teeth (f=0.44), and 27 extracted teeth (m=0.07) have been found. The mean dmft in this population was 2.45. Only 48.3% of these children were caries free. Although the mean of dmft was higher for girls (2.51±.48 in contrast with 2.41±.53), the difference was not statistically significant.

The mean dmft was 2.05±.35 for children who paid their dentists regular visits, 2.25±.37 for those who did not have regular visits, and 2.55±.42 for those who visited their dentists only when they had complaints (Table I). The differences between these groups were statistically significant (P<0.001).

Table I: Dental health status in research population regarding their visits to the dentist.

Check-ups with the dentist	number	dmft	
		Mean	S.D.
never	304	2.55	0.42
regularly	50	2.05	0.35
not regularly	46	2.25	0.37
F=38.96		P<0.001	

Post Hoc test: differences between all groups were significant (P<0.05)

Brushing the teeth was significantly correlated with dmft (P<0.001); the mean dmft of 2.39±.39 and 3.53±.51 was obtained for children who brushed regularly, and those who did not brush at all, respectively (Table II).

Table II: Dental health status in research population regarding their brushing habit

Brushing of teeth	number	dmft	
		Mean	S.D.
never	15	3.53	0.51
regularly	324	2.39	0.39
not regularly	61	2.52	0.49
F=56.05		P<0.001	

Post Hoc test: differences between "never" group with other groups are significant (P<0.01)

Table III: Dental health status in research population regarding the economic status

Economic status	number	dmft
low	15	4.69
medium	343	2.42
high	42	1.92
F=257.17		P<0.001

Post Hoc test: differences between all groups were significant (P<0.001)

The mean dmft was significantly lower in children who washed their mouths after consuming sweets (2.16±.40 in contrast with

2.87±.43). As it could be expected, the mean dmft increases with age. A dmft of 1.11 was found for the 3 year old children group which increased to 1.89 and 3.19 for 4 and 5 year old children, respectively.

The mean dmft was highest for children whose parents claimed to be "poor" (P<0.001) (Table III).

DISCUSSION

Results of this study show that 48.3% of the examined children were caries free. Unfortunately this is far from the goals of "a minimum of 50% by year 2000" and "90% by 2010". A similar condition has been observed in other developing countries. In Sri Lanka for instance, the 2-9 year old group were 33% caries free in 2002, and in Jordan, the 1-5 year old children were reported 52% caries free in 2001 [2,3]. The caries free rate is much higher in developed countries, for example 61% of 1-4 year old children were reported to be caries free in Australia in 1999 [4].

The mean dmft in our study population was 2.45. The decayed teeth (d=1.94) and extracted teeth (m=0.07) contributed more than filled teeth (f=0.44). This indicates a high rate of tooth decay and few numbers of intentions for treatment. The false notion about deciduous teeth exacerbates the situation. Many parents believe that decay and extraction of deciduous teeth is of no importance and permanent teeth will replace the lost teeth when necessary.

Unfortunately, only 81% of children brushed regularly. This has led to a high rate of tooth decay among them. Promoting public education is therefore of great importance. About 41% of these children did not wash their mouths after consuming sweets. Not only did a large number of children fail to brush, but a great number of them also failed to do it correctly at the appropriate time. This can explain the high dmft among them. Similar findings have also been shown in studies by Martin, Downer, and Spliet [5, 6, 7].

Another factor that affected the dmft was the economic status of the families. A greater mean dmft in poor families was obviously associated with less awareness of the importance of hygiene and failure to seek dental care in a well-timed manner.

CONCLUSION

Results of this study indicate that unfortunately, only less than half of 3-5 year old children in Tehran are caries free. We are far from the goals for 2010 discussed in Geneva in 1997. To improve oral and dental health in children, more precise planning is necessary. Public education programs on observing dental hygiene must emphasize the importance of regular brushing and washing the mouth after consuming sweets. Population-based prevention programs must be conducted to verify the significance of paying regular visits to the dentist.

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وضعیت سلامت دهان در کودکان ۳ تا ۵ ساله کودکستان شهر تهران در سال ۱۳۸۲

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چکیده

بیان مسأله: ارزیابی وضعیت بهداشت دهان کودکان نقش مهمی در بررسی سلامت جوامع و ارزیابی برنامه‌های پیشبرد سلامت دارد. در سال ۱۹۹۷ در ژنو، سازمان بهداشت جهانی اعلام نمود که دستیابی به حداقل ۹۰٪ کودکان ۵ ساله فاقد پوسیدگی از اهداف این سازمان است.

هدف: مطالعه حاضر به منظور ارزیابی وضعیت سلامت دهانی کودکان ایرانی طراحی شد.

روش تحقیق: تعداد ۴۰۰ کودک ۳ تا ۵ ساله به صورت تصادفی از بین کودکان ساکن شهر تهران انتخاب شدند. دندانهای شیری آنها معاینه و شاخص dmft برای هر کودک محاسبه شد. نتایج با استفاده از آزمونهای تجزیه واریانس یک راهه، مقایسه چندگانه Tukey-Kramer، t و Chi-Square بررسی شدند.

یافته‌ها: فقط ۴۸/۳٪ از کودکان مور مطالعه، عاری از پوسیدگی بودند. این مسأله نشانگر میزان دوری از هدف سازمان بهداشت جهانی است. از عوامل معنی‌دار در بالا بودن میزان dmft باید به غفلت از بهداشت دهان و دندان، مسواک‌زدن نامنظم و عدم شستشوی دهان پس از خوردن مواد شیرین اشاره کرد (P< ۰/۰۰۱). متأسفانه تعداد مراجعات به دندانپزشکان برای معاینات معمول کافی نبوده و پوسیدگی در کودکانی که تحت معاینه منظم قرار نداشتند، بیشتر بود (P< ۰/۰۰۱).

نتیجه‌گیری: برنامه‌های دقیق‌تر و منظم‌تری جهت دستیابی به هدف "۹۰٪ کودک ۵ ساله بدون پوسیدگی" مورد نیاز است. بیشترین تلاشها باید در زمینه رعایت بهداشت دهان از طریق مسواک زدن منظم، شستشوی دهان پس از مصرف مواد شیرین و معاینات منظم دندانپزشکی باشد.

واژه‌های کلیدی#دندان شیری؛ dmft؛ عاری از پوسیدگی؛ کودک ۳ تا ۵ ساله

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