

PREVALENCE OF DENTAL CARIES IN 6-10YR OLD CHILDREN IN A SUBURBAN AREA OF LAHORE

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ABSTRACT

An investigation was carried out to determine the level of caries in 6-10 year old children in a suburban area of Lahore, Pakistan.

The study used data that was routinely collected for a period of six months (Nov 2008-April 2009). The final sample of 400 children was aged between 6-10 years. These children were selected from the OPD of Pediatric Dentistry Department of Lahore Medical and Dental College and Hospital, Lahore. One dentist carried out all dental examinations for the whole sample to avoid bias and recorded the level of caries in the dentition including the missing teeth due to caries and filled teeth due to caries. Clinical examination was followed by the completion of a questionnaire by all patients that included information such as names, ages, gender and addresses.

Data analysis was done using SPSS version 16.0 and included descriptive statistics such as frequency distribution and cross tabulation.

Males (62.5 %) and females (37.5 %) had no significant association with dmft whereas age was found to be a statistically significant ($p=0.04$) factor for dmft. The mean dmft was 5.8, 4.9, 4.9, 3.6, 3.2 for the ages of 6, 7, 8, 9 and 10 years respectively whereas the mean dmft of the whole sample was 4.94. The distribution curve for dmft showed a standard deviation of 3.37 which depicts a slight shift to the left.

Distribution curve of the sample, shows improvement in the trend of caries.

Key words: Dental Caries, dmft, DMFT, frequency

INTRODUCTION

Oral health is an essential component of general health throughout life. According to Horowitz and coworkers, oral cavity is associated with the development of healthy personality, perceptions, and the overall experiences of pleasure. The ability to chew and swallow is a critical function required to obtain essential nutrients for the body - the building blocks of general health as stated by American Dietetic Association in 1986. However, millions of individuals suffer from dental caries and periodontal disease, resulting in

unnecessary pain, difficulty in chewing, swallowing and speaking, and increased medical costs. Untreated oral diseases in children frequently lead to serious general health problems, significant pain, interference with eating, and lost school time.^[1] One of the factors to be considered when planning for the required growth in dental care facilities is the prevalence of dental diseases and their treatment need in the population.

Dental caries is the major oral health condition in developing countries, affecting 60-90% of the school

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children and the vast majority of adults.⁽²⁾ In India, the prevalence of dental caries is reported to be 50-60%.⁽³⁾ Poor oral health can have a detrimental effect on children's performance in school and their success in later life. It significantly impacts on quality of life, causing pain and embarrassment, limiting function and being costly to treat⁽⁴⁾. Children who suffer from poor oral health are 12 times more likely to have more restricted-activity days including missing school than those who do not⁽⁵⁾. Worldwide, more than 50 million hours annually are lost from school due to oral diseases⁽⁶⁾. It was therefore necessary to assess the current prevalence of dental caries in a suburban area of Lahore so that further improvements could be made in the health sector if required.

METHODOLOGY

A cross sectional study design was adopted to assess the prevalence of dmft in a suburban area of Lahore. The data was routinely collected for a period of six months (Nov 2008-April 2009). The final sample size was 400 with children aged from six to ten years. These children were selected from the OPD of Pediatric Dentistry Department of Lahore Medical and Dental College and Hospital, Lahore. One dentist carried out all dental examinations for the whole sample to avoid bias and recorded the level of caries in the dentition. Children aged between 6 and 10 years only were included and the level of caries was identified by clinical examination only. No radiographs were taken for diagnostic purposes. Missing teeth due to caries and filled teeth due to caries were also included. Clinical examination was followed by the completion of a questionnaire by all patients that included information such as names, ages, gender and addresses.

The data collection sheets were checked for errors and omissions and corrected as necessary. Data was entered into a computer and only the codes were included in the files. Analysis was done using the SPSS package (version 16.0). Data analysis included descriptive statistics such as frequency distribution and cross-tabulation.

RESULTS

The final sample size was 400 with males (62.5%) having a much larger percentage than females (37.5%).

The largest group was the 8 year old group (32.5%) whereas the smallest was the 10 year old group (2%) (Table 1, 2) Mean dmft was seen to decrease with increasing age and the mean dmft of the whole sample was calculated to 4.94. The mean dmft was 5.8, 4.9, 4.9, 3.6, 3.2 for the ages of 6, 7, 8, 9 and 10 years respectively.

Chi square analysis showed a statistically significant association between age and dmft ($p=0.04$) (Table 3) whereas the association with gender was not significant ($p=0.46$) (Table 4). The normal distribution curve when plotted for the dmft variable showed a standard deviation of 3.377 which is a slight shift to the left. (Fig 1)

TABLE 1: DISTRIBUTION OF AGE AND GENDER (n=400)

Age of student	Sex of Student		Total
	Male	Female	
6	44	26	70
7	62	32	94
8	78	52	130
9	58	40	98
10	8	0	8
Total	250	150	400

TABLE 2: FREQUENCY DISTRIBUTION OF GENDER AND AGE (n=400)

Variable	Frequency (n)	Valid Frequency (%)
GENDER		
Male	250	62.5
Female	150	37.5
Total	400	100
AGE		
6 y	70	17.5
7 y	94	23.5
8 y	130	32.5
9 y	98	24.5
10 y	8	2.0
Total	400	100

TABLE 3: FREQUENCY DISTRIBUTION OF DMFT AND MEAN DMFT TO AGE OF THE CHILD (n=400)

DMFT	AGE OF CHILD					TOTAL
	6	7	8	9	10	
Less than 3	18	38	48	48	6	158
More than 3	52	56	81	50	2	241
22	0	0	1	0	0	1
Total	70	94	130	98	8	400
Mean dmft	5.8	4.9	4.9	3.6	3.2	4.94 [^]

p-value for Chi-square test=0.04 (P<0.05)

[^] Mean dmft of whole sample

TABLE 4: FREQUENCY DISTRIBUTION OF DMFT TO GENDER OF THE CHILD (n=400)

DMFT	Gender of Child		Total
	Male	Female	
Less than 3	94	64	158
More than 3	155	86	241
22	1	0	1
Total	250	150	400

p-value for Chi-square test= 0.46

well being⁽⁸⁾. A lot of studies have focused on school children for the very same reason so that the children can lead a good quality of life and it would mean less school hours to miss!^(9, 10, 11, 12, 13, 14)

The present study demonstrated the mean dmft to be higher than the mean dmft recorded in countries like Uganda⁽¹⁵⁾, Trinidad and Tobago⁽¹⁶⁾, Portugal, Scotland, Scandinavian countries and UK⁽¹⁷⁾ even though the slight shift in the distribution curve leads us to the conclusion that there is improvement in the decline of caries.

Despite great successes in improving the oral health of populations globally, problems still remain in many communities around the world, particularly amongst the underprivileged groups in developing countries. Dental caries and periodontal diseases have historically been considered an important component of the global disease burden. Both can be effectively prevented and controlled through a combination of community, professional, and individual actions. Early detection of disease is, in most cases, crucial to the control of the oral condition. A thorough naked-eye oral examination with adequate light can identify many oral conditions in the early stages. This would ensure a bigger shift to the left in a normal distribution of cases and would mean better oral health for all.

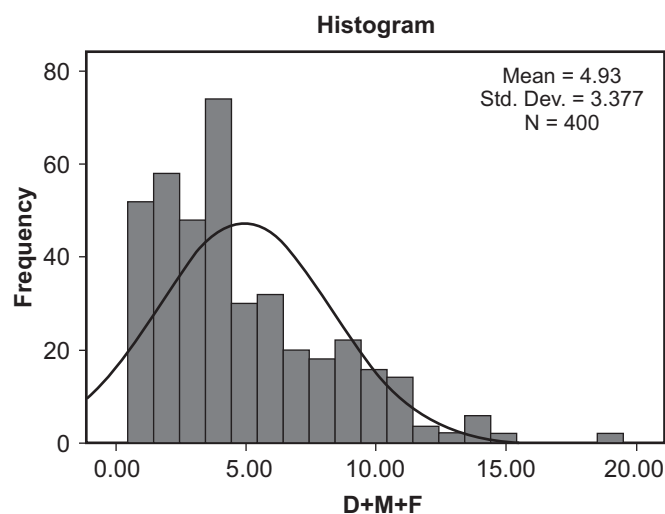


Fig 1: Frequency Distribution curve of dmft

DISCUSSION

Oral health is fundamental to general health and wellbeing⁽⁷⁾. It is defined as the standard of oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general

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