

Original Research

Dental caries prevalence among inhabitants of Ramapuram - A house to house survey

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Abstract

Aims & Objectives: To assess the dental caries prevalence among the inhabitants of Ramapuram a house to house survey

Methodology: This study comprised of 286 inhabitants of Ramapuram selected from eight different areas. The selection was done by random sampling. The dental caries status was assessed by the Klein, Plamer and Knutson criteria.

Results: Mean DMFT among 5-15 years is 1.8, among 16-35 are 2.6, among 35-44 are 3.1 and above 44 are 4. Among males and females the mean DMFT status is 2.6 and 3.1 respectively. The difference across various age groups and with respect to gender was found to be statistically significant $p > 0.05$.

Conclusion: Despite the presence of a dental college within 5 kilometre radius still a lot of dental caries is unmet this has to be translated as felt need by means of frequent dental health education programmes with a positive reinforcement to change the attitude of the people.

Keywords: Prevalence, Dental caries, Ramapuram, house

Introduction

During the past 50 years of independence Medical Sciences have made tremendous progress in combating most of communicable and non-communicable diseases, however Oral Health Care has been neglected. This is evident from the increased prevalence of dental diseases in recent years and from the meager funds being allotted for Oral Health Care¹.

Dental Caries has been consistently increasing both in prevalence and severity for the last five decades². In the year 1941, its prevalence was reported between 40 - 50 % with an average DMFT of 1.5². In 1980 the point prevalence increased to about 80% with an average DMFT of 2-6 at the age of 16 years in different regions of the country². While according to Global Oral Data Bank (WHO website) in 1996 the point prevalence was 89% and DMFT ranging from 1.2 - 3.8 in different regions of India².

Dental caries is consistently increasing in its prevalence and

severity and today according to a number of investigators 80 to 85 % of the population suffer from this disease and the average number of decayed, missing and filled teeth per person is about 4 in rural areas and 5 in urban areas of India with almost no dental restorative help available particularly in the rural & deprived areas¹.

Dental caries is among the most common dental diseases with high prevalence in humans. It is crucial to control the disease process by assessing and rendering the treatment required along with spreading awareness regarding prevention. Several prevalence studies have been conducted and reported on different occasions on the dental caries and the treatment needs in developing countries such as India.

However not much of data are available on the prevalence of dental caries and its treatment needs, in Chennai. As there are no studies done on the prevalence of dental caries in Ramapuram, and with the intention of providing a baseline value the present study aims at assessing the prevalence of

dental caries among the inhabitants of Ramapuram.

Aims & Objectives

To assess the dental caries prevalence among the inhabitants of Ramapuram.

Materials and Methods

Study area

Chennai is the capital of the Indian state of Tamil Nadu. Located on the Coromandel Coast of the Bay of Bengal. Chennai has an estimated population of 7.5 million (2007)³, making it the fourth largest metropolitan city in India. Ramapuram is a small area located within the city limits of Chennai providing housing to nearly 60,000 inhabitants. The hospital and dental services are being provided by SRM Dental College and Hospitals, the largest and leading health sector in that area. As a part of the community reach programme a house to house survey was started to understand the felt and the unmet needs of the population. Hence as a preliminary step the prevalence of dental caries among the inhabitants of Ramapuram was estimated.

Study population and sampling

All the subjects present in the selected households were included in the study. Houses locked were visited once a week for three consecutive weeks after which it was recorded as no response. The areas were divided into eight regions and were selected at random. A total of 97 houses were enrolled out of which 5 were recorded as no response and 4 households did not give the consent hence they were excluded. The total sample size constituted to 286 subjects.

Clinical criteria and calibration

Training of the examiner was done in the Department of Public Health Dentistry, College of Dental Surgery, SRM Dental College, Ramapuram, Chennai. Two examiners were calibrated and standardized through a series of training exercise. This procedure included theoretical overview, discussing issues and questions that might be encountered during the study period and repeated examinations on different subjects with periodic repetitions on few already examined subjects, the fact which was not aware by the examiner, was done and the results were obtained. The kappa statistic computed for inter observer agreement was 0.8 (good agreement).

Informed consent

Verbal informed consent was obtained from the head of the households. The subjects who refused to participate in the

study were excluded.

Methodology

This study was done using a mouth mirror, explorer and available natural light. The instruments were sterilized using autoclave for 15 minutes pressure at 121°C. The dental caries status was assessed using the DMFT index by Klein, Plamer and Knutson criteria⁴ and recorded on a predesigned Performa.

Statistical analysis

All the statistical computations were done using Statistical Package for Social Sciences (SPSS version 16). The arithmetic mean was used. The data computed was subjected to t-test to evaluate the difference between the gender and age groups. The significance level was set at 0.05 with a confidence interval of 95%.

Results

This descriptive cross-sectional study included 286 inhabitants of which 46 subjects belonged to 5-15 years, 116 belonged to 16-35 years, 47 subjects belonged to 36 to 44 years, 77 subjects belonged to 45 and above age group. A major proportion of the study subjects belonged to the 16 to 35 age group (Chart 1). The study population had 126 males and 160 females (Graph 1).

The mean DMFT status in the 5-15 year old age groups is 1.5, among 16-35 the mean DMFT status is 2.8. the mean DMFT status among 36 to 44 year olds is 3.1 and above 45 years is 4. The DMFT status increased with increase in age. The difference across the gender was found to be statistically highly significant ($p=0.000$, $p<0.05$) (Graph 2).

The mean DMFT status among the males and females is 2.6 and 3.1 respectively. The females exhibited more caries occurrence than the males. The DMFT status across the gender was not statistically significant (Graph 3).

Discussion

Oral health is a part of general health and hence affects the total well being of individuals. Assessment of oral health is important in deciding a treatment plan or dental public health programme⁵. The mean DMFT among the males was 2.6 and among females it was 3.1. The difference among the gender could be attributed to physiological and hormonal changes as suggested by John R. Lukacs⁶ or possibly due to the fact that with increase in age, the females become more conscious of

their physical appearance, which in turn have an effect on hormonal changes.

This study also highlights the fact that the DMFT status increased with increase in age of the individual. Similar observations were made by Crossner CG et al ⁷, S.L. Ekanayake et al ⁸, and Paul A Batchelor et al ⁹. This could be attributed to the fact the teeth are constantly exposed to the etiologic factors for a longer time. Hence caries experience is proportion with time with respect to cariogenic challenge. Also with increase in age other factors succeed the good oral hygiene attitude.

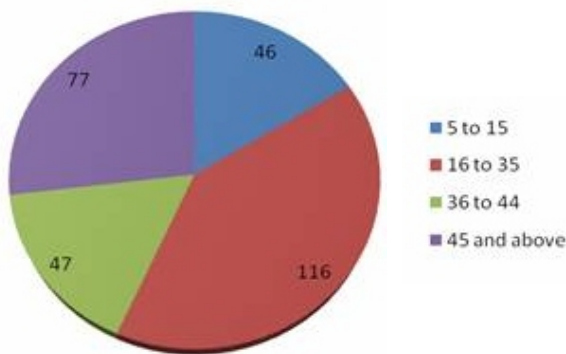
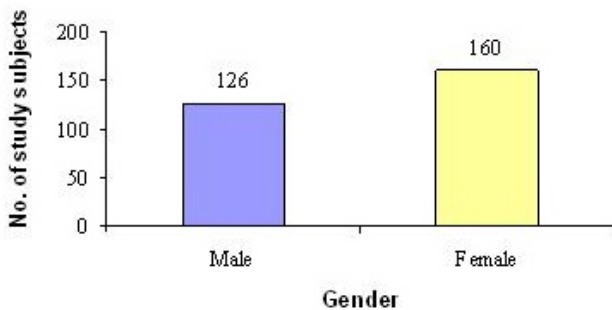


Chart 1 : Distribution of study population



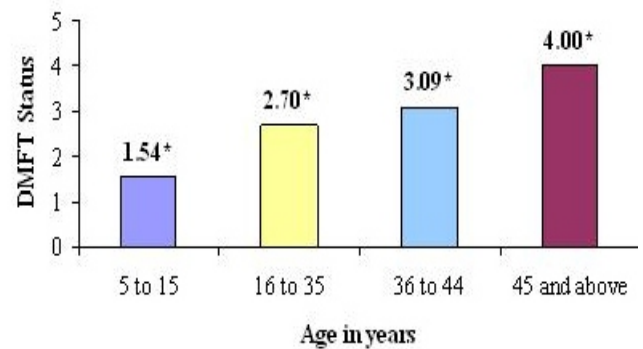
Graph 1: Gender wise distribution of the study population

Conclusion

Dental caries is the most common oral disease showing striking geographic variations, socio-economic patterns and severity of distribution all over the world. Dental caries experience and occurrence of untreated lesions in permanent teeth has increased with age and oral hygiene status worsened as age advanced. A number of factors have been put forward to explain the variation in prevalence and severity of dental caries in urban populations. In general, these factors can be divided into local intraoral factors associated with plaque accumulation ranging from behavioral factors, metabolism and fluoride exposure or general factors such as age, sex and

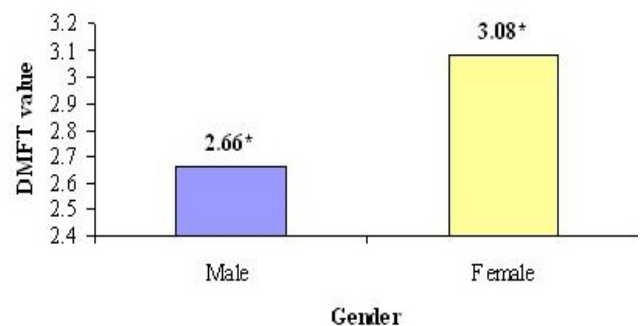
socio-cultural variables.

In the present study the prevalence of dental caries is high. It increases as the age increases and this difference was found to be statistically significant. There remains a need to prevent dental decay no matter what the causative factor. More than the provision of treatment, efforts should be completely diverted on the prevention of this ubiquitous disease. This could be made possible by involving certain sectors of health care administrators, administrators of the institution and the health care providers. Robert Miles has rightly said “we have miles to go before we sleep”.



*P=0.000, significant

Graph 2: DMFT status of the study subjects by age



*P=0.26, not significant

Graph 3: DMFT status of the study subjects by gender

Recommendations

Mandatory oral health care promotion should be implemented at all levels of for the benefit of the people around and this has to be taken up seriously. This could be achieved with the team work of all the coordination of various departments.

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