

Original Article

Estimation of Oral Hygiene Status amongst Population of Village Kaliyan using DMFT, OHI-S & Russell's index

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ABSTRACT:

Background: Dental caries and periodontal diseases are prominent among general population. Dental caries, as a result of a disturbance of the ecological balance on the dental hard tissue caused by plaque microorganisms is one of the most prevalent diseases. The present study was conducted to estimate dmft score, oral hygiene simplified score (OHI- S) and Russell's periodontal index in village Kaliyan population. **Materials & Methods:** The present study was conducted among 2438 villagers age range from 20- 86 years of age of both gender. For assessment of dental caries, DMFT index was used. For assessment of oral hygiene, oral hygiene simplified score (OHI- S) was used and for periodontal status, Russell's periodontal index was used. **Results:** Age group 20-40 years had 446 males and 360 females, 40-60 years had 412 males and 312 females, 60-80 years had 350 males and 235 females and >80 years had 112 males and 211 females. In males, 42% had decayed, 17% had missing and 22% had filled teeth. In females, 55% had decayed, 14% had missing and 18% had filled teeth. The difference was non- significant ($P > 0.05$). 41%, 27% and 32% males had good, fair and poor OHI-S score respectively. 37%, 9% and 58% females had good, fair and poor OHI-S score respectively. Russell's periodontal score showed significant difference among both males and females ($P < 0.05$). **Conclusion:** It was found that most of the villagers had poor oral hygiene, gingivitis, periodontitis and high dmft score. Large scale awareness programmes are required to be organized for the villagers to promote oral health care.

Key words: Dental caries, Oral hygiene, Villager.

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INTRODUCTION

Oral health has been defined as "the standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort and embarrassment and which contributes to general well being."^[1]

Dental caries and periodontal diseases are prominent among general population. Dental caries, as a result of a disturbance of the ecological balance on the dental hard tissue caused by plaque microorganisms is one of the most prevalent diseases in children. Among 5 to 17 year old Americans, it is more than 5 times as common as reported asthma and 7 times as common as hay fever. In 1981, one of the global goals of the World Health Organization and World Dental Federation was to reach a 50 % caries free dentition in 5 and 6 year old children until the year 2000.^[2]

Gingivitis, a common oral disease starts in childhood and its severity increases with age. Accumulation of microbial biofilm is the main cause of gingivitis and predisposing factors include advanced carious lesions, smoking, decreased manual dexterity, use of orthodontic bands etc. Gingivitis, if left untreated, can eventually progress to a severe form of periodontal disease. Periodontal disease shows an increase during adolescence because of the increased level of sex hormones, which in turn affects the inflammatory response of the body.^[3]

Various index have been postulated for caries assessment such as dmft score, oral hygiene simplified score for oral hygiene estimation and Russell's periodontal index for periodontal status. The present study was conducted to estimate dmft score, oral hygiene simplified score (OHI- S)

and Russell’s periodontal index among village Kaliyan population.

MATERIALS & METHODS

The present study was conducted among population of village Kaliyan. It comprised of 2438 villagers, age ranged from 20- 86 years of age of both gender. All were informed regarding the study and written consent was obtained.

General information such as name, age, gender etc. was recorded. Careful oral examination was done to detect dental caries using WHO modification of DMFT Index (1987). Dental caries was recorded when a lesion in a pit or fissure, on smooth tooth surface had a detectable softened floor undermined enamel or softened wall. The use of mouth mirror and WHO probe was done.

DMFT indicates very low prevalence when the DMFT is between 0 and 1.1; low prevalence between 1.2 and 2.6; moderate prevalence between 2.7 and 4.4; high prevalence between 4.5 and 6.5; and very high prevalence when the

DMFT is greater than or equal to 6.6. For the assessment of oral hygiene, Simplified oral hygiene index (OHI- S) was used. The use of mouth mirror and No. 23 explorer (Shepherd’s Hook) was done. Tooth number 16, 11, 26, 36, 31 and 46 were used. The interpretation of OHI- S index was as follows: good—0 to 1.2, fair—1.3 to 3.0, and poor—3.1 to 6.0. Both Debris index and calculus index were done to calculate OHI- S value. And for periodontal status, Russell’s periodontal index was used. All teeth present were examined and all of the gingival tissue circumscribing each tooth was assessed for gingival inflammation and periodontal involvement. The use of mouth mirror and plain probe was done. The interpretation of Russell’s periodontal index was as follow: Clinically normal supportive tissue – 0 to 0.2, Simple gingivitis – 0.3 to 0.9, Beginning destructive periodontal disease – 1.0 to 1.9, Established destructive periodontal disease – 2.0 to 4.9, Terminal disease – 5.0 to 8.0. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was significant.

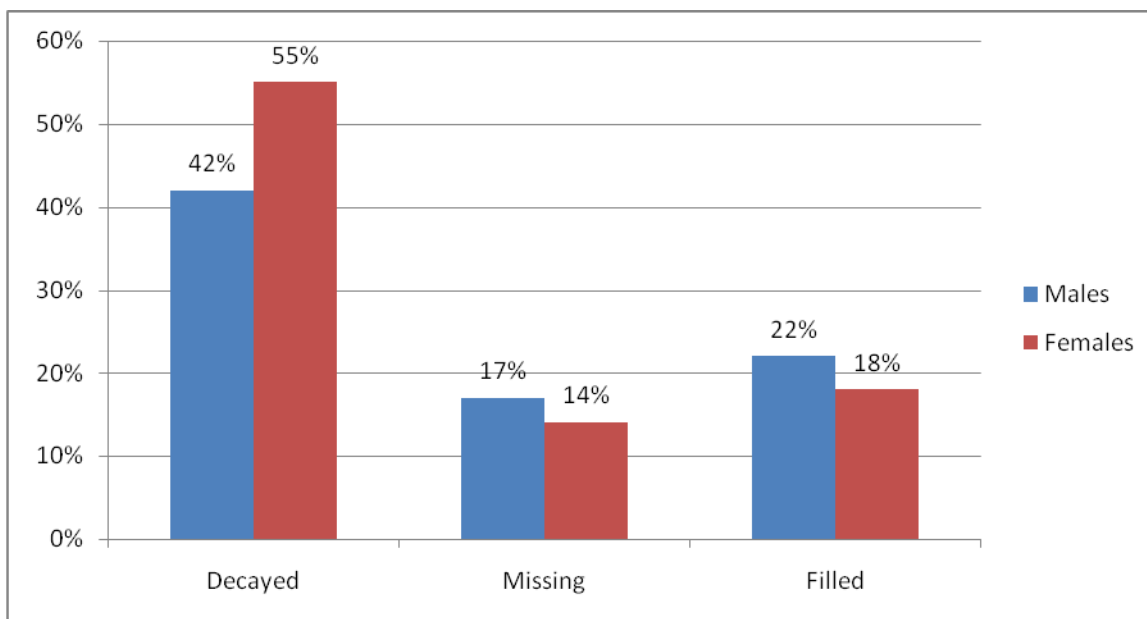
RESULTS

Table I Distribution of subjects

Gender	Male	Female
20-40	446	360
40-60	412	312
60-80	350	235
>80	112	211
Total	1320	1118

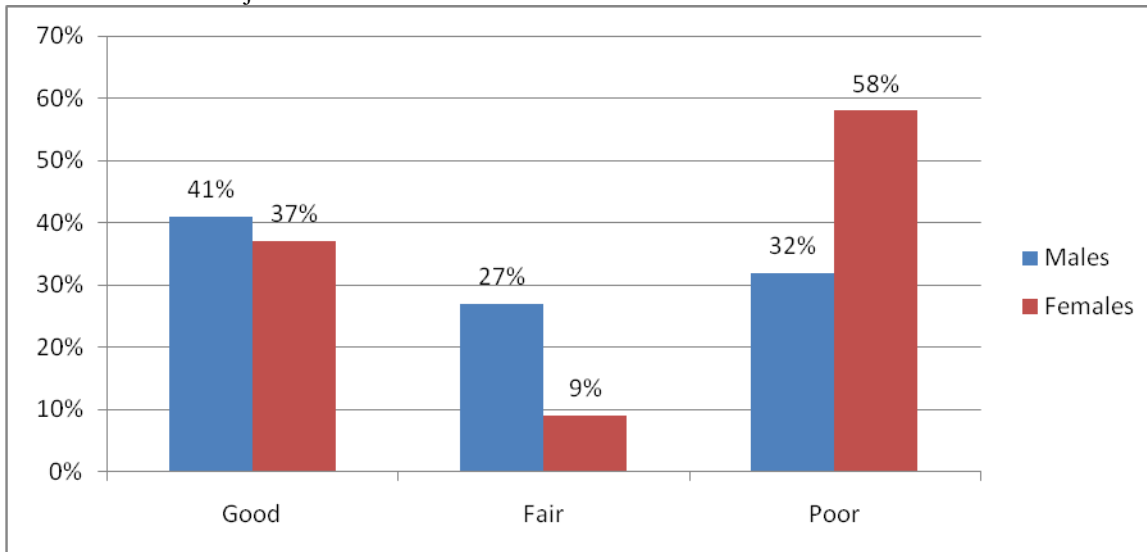
Age group 20-40 years had 446 males and 360 females, 40-60 years had 412 males and 312 females, 60-80 years had 350 males and 235 females and >80 years had 112 males and 211 females.

Graph I DMFT score in subjects



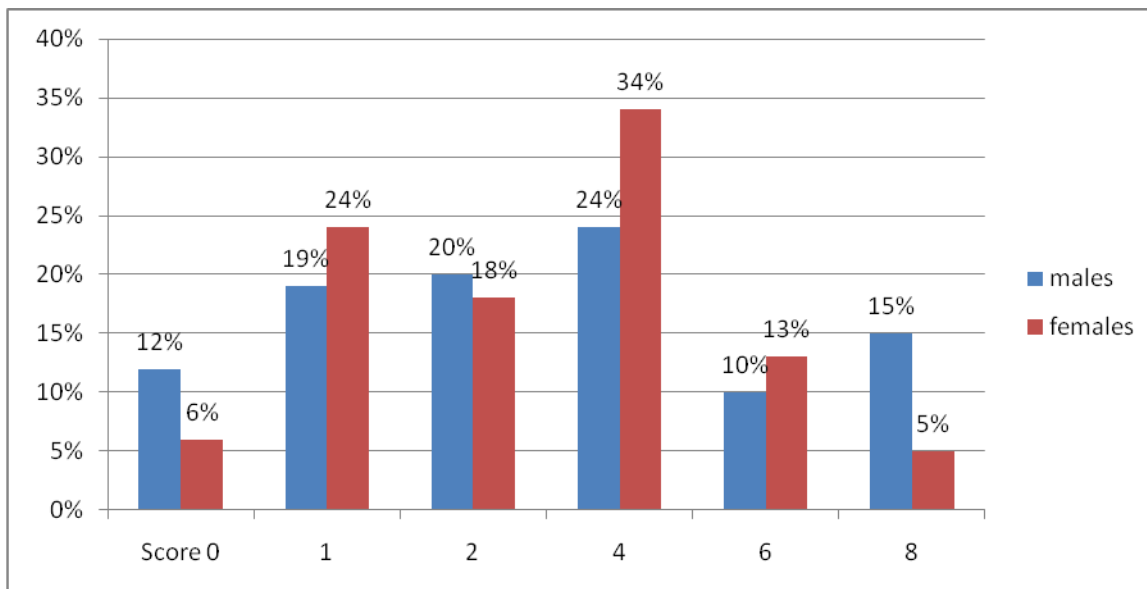
In males, 42% had decayed, 17% had missing and 22% had filled teeth. In females, 55% had decayed, 14% had missing and 18% had filled teeth. The difference was non- significant (P> 0.05).

Graph II OHI- S index in subjects



41%, 27% and 32% males had good, fair and poor OHI-S score respectively. 37%, 9% and 58% females had good, fair and poor OHI-S score respectively.

Graph III Russell’s periodontal index in subject



Russel’s periodontal score showed significant difference among both males and females (P< 0.05).

DISCUSSION

Dental caries, gingivitis and periodontitis are among various dental problems that people encounter. Patient experiences pain, discomfort, eating impairment and loss of tooth. Risk factors such as sex, age, dietary habits, socioeconomic and oral hygiene status are associated with increased prevalence and incidence of dental caries in a population.^[4]

Although in practice these indices were utilized in local epidemiological surveys, according to reports from dentists and the records of public oral health services, there are few descriptions in the literature of studies of the utilization of these simplified measurements. It was found in most locations where such measurements were utilized in a more routine manner that a high prevalence of caries was observed.^[5]

In present study, in males, 42% had decayed, 17% had missing and 22% had filled teeth. In females, 55% had decayed, 14% had missing and 18% had filled teeth. This is in agreement with Denloye et al.^[6]

Anders and Davis^[7] reviewed 27 studies of individuals with ID and reported that such individuals tend to have poor oral hygiene and higher prevalence and greater severity of PD. Two subgroups which are at high risk for oral health problems are the individuals with DS and the people unable to cooperate with routine dental care. Comparison between studies is difficult because of the lack of common indices. In general, oral cleanliness is less adequate and deteriorates more with age.

Jackson et al^[8] evaluated a total of 32,000 records from a population aged over 15 years. It was observed that caries attacks were asymmetrical in most of the individuals, but that the degree of asymmetry remained effectively constant after the age of 20-30 years, considering specific sites on the tooth (occlusal, mesial and distal surfaces). Hujoel et al^[9] also stated that the distribution of caries is nonrandom and is concentrated on one side of the mouth. These latter authors examined 12,776 adult individuals, of whom approximately 50% had two or more pairs of homologous teeth that were discordant.

In present study, 41%, 27% and 32% males had good, fair and poor OHI-S score respectively. 37%, 9% and 58% females had good, fair and poor OHI-S score respectively. Russell's periodontal score showed significant difference among both males and females ($P < 0.05$). This is in agreement with Rashim et al.^[10]

Svatun and Gjeramo^[11] observed average oral hygiene and poor periodontal health except for patients in few institutions where the nurses were trained to clean teeth regularly. Increased age, high degree of ID, seizure disorder, and DS were all elements that apparently contributed to impairment of periodontal status and to increased periodontal treatment needs. The preventive programs used in some institutions seemed to be effective as compared with non-institutionalized subjects. Tesini^[12] observed that institutional status was a major determinant in oral hygiene conditions of the study group, as institutionalized ID individuals had significantly higher OHI-S scores than non institutionalized ID individuals. SES was not found to be a significant factor in the oral hygiene status of individuals.

CONCLUSION

It was found that most of the villagers had poor oral hygiene, gingivitis, periodontitis and high DMFT score. Large scale awareness programmes are needed to be done among villagers to promote oral health care and awareness.

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