

Effect Of Socioeconomic Status On Periodontal Health Of a Population in Mangalore

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Abstracts:
Background: The presence of plaque microorganisms, along with immunological and genetic factors plays a major role in the etiology of periodontal disease. Studies have shown that tobacco smoking, alcohol consumption, and physical activity are possible risk factors for periodontal disease. Improved lifestyle is gaining tremendous importance with reference to maintenance of periodontal health.
Objective: The aim of the present study was to investigate the effect of socioeconomic status on the periodontal health.
Method: 606 subjects were randomly selected. The socioeconomic status of the selected was obtained by using a questionnaire followed by clinical recordings of bleeding on probing, calculus and periodontal pockets using CPI. Results were calculated using Pearson's chi-square test.
Conclusion: A strong association of occupation, education level, income and smoking with periodontal diseases was found from the results of the present study. [Kamath D et al NJIRM 2012; 3(4) : 121-123]

Key Words: socioeconomic status, periodontal health, epidemiology

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Introduction: Numerous epidemiological studies^{1,2} have shown that the diseases of periodontium are among the most common human afflictions. It is well known that plaque microorganisms, immunological and genetic factors play a major role in the etiology of periodontal disease. More emphasis is now directed toward combined influence of socioeconomic factors along with standard risk factors.

Previous studies^{3,4} have associated dental health with tobacco smoking, alcohol consumption and physical activity. Of late the concept of improved lifestyle is gaining tremendous importance with reference to maintenance of periodontal health. Presently very few studies exist showing the effect of education, occupation and socioeconomic position on the prevalence of periodontal disease. Hence in the present study an attempt was made to investigate the effect of education, occupation smoking and socioeconomic position on the periodontal health status of a randomly selected adult population around Mangalore, India

Materials And Methods: A total of 700 subjects were examined from Mangalore and 606 subjects were randomly selected randomly depending on following criteria:

- Patients aged 15 to 65 years
- Presence of more than 15 teeth.

Consent was obtained from all the subjects to participate in the study. Later the information about their occupation, education, income and smoking status were assessed by using a questionnaire followed by clinical recordings of bleeding on probing, calculus and periodontal pockets using CPI.

Since the information recorded was to be computerized appropriate codes were assigned to each of the factors evaluated.

Occupation

Code 1: Professionals, Officers, Managers

Code 2: Factory workers

Code 3: Students

Code 4: unemployed

Education

Code 1: Postgraduate/ graduate/ PUC

Code 2: High school (VIII to X)/ Secondary (V to VIII)

Code 3: Primary school (I to IV)

Code 4: Illiterate/ No formal education

Income

Code 1: Rs 3000/month and above

Code 2: Rs 1000 to 3000

Code 3: Rs 1000 and below

Smoking

Code 1: Non smokers

Code 2: Light smokers (<10 cigarettes/ beedies per day)

Code 3: Heavy smokers (>10 cigarettes/ beedies per day)

Results: The results were calculated by using Pearson's chi-square test to calculate the P-value. When the association between occupation and periodontal status was investigated it was found that the Group I (Managers and Semiprofessionals) and group IV (Students) had better periodontal status than group II (Factory workers) and Group III (Unemployed) and this relationship was found to be statistically significant. ($p < 0.001$) {Table I}. It was also found that Group I (PUC to PG) had better periodontal health than Group II (V to X std), Group III (I to IV std) and group IV (illiterate) and it was found to be statistically significant. ($p < 0.001$) {Table II}.

When the association between income and periodontal status was assessed it was seen that there is a relationship between income and periodontal disease was statistically significant ($p < 0.001$) {Table III}. When the relationship between smoking and periodontal status was assessed it was seen that periodontal destruction increased with smoking and was found to be statistically significant ($p < 0.001$) {Table IV}.

Discussion: CPI was developed as a method for assessment of periodontal conditions in both epidemiologic studies and general practice. The use of this index is simple, quick and highly reproducible. Many risk factors have been recently identified which can alter the progression of periodontal disease. The industrialized parts of the world has entered a "post medical" era, in which physical well-being is undermined by certain types of individual behaviors (e.g., smoking) and factors like occupation, education and income⁵

This study demonstrated a relationship between level of education and periodontal health of the subject. It was seen that postgraduate to PUC holders had healthy periodontium and none had deep pockets compared to the other groups. This is in accordance with studies done by Gamonal et al⁶ where they have shown that people who had University Education were more

healthy compared to other individuals. This is in accordance with Richard et al⁷ who identified education level also a strong indicator of periodontal status. Reason for such results could be due to increase in dental awareness and periodic dental visits which are seen more in the educated groups

When the socioeconomic status was compared to the periodontal status, our study showed a positive association between higher socioeconomic groups and better periodontal status. This is in accordance with Neuman et al⁸ who identified a lower occupational status limiting the use of dental services. Smoking was another risk factor found in cases of severe periodontal disease.⁹ Non-smokers in general had less periodontal destruction as compared to heavy smokers (Table IV). This must have contributed to increased periodontal destruction seen in population. It has been seen that smoking exerts effect on periodontal health in several ways. Smoking suppresses IgG2 in periodontitis patients. Smoking can also alter the T cell subset ratio. It is also seen that cytotoxic substances such as nicotine can penetrate epithelium and exert effects on fibroblasts. Smoking can also alter the short term oxidation reduction potential on plaque and increase the proportion of Gram negative bacteria¹⁰. Studies conducted by Imaki et al¹¹ have also shown that smoking increases the prevalence of periodontal disease significantly.

People with an unhealthy lifestyle have a poor periodontal status because of their detrimental effects of smoking. According to Thompson et al¹², smokers tend to have a more negative lifestyle in general. It means that the association of tobacco with periodontal health was linked not only to poor oral hygiene but also to poor general lifestyle.

With regard to self-awareness we found better awareness in three groups: in those with higher occupation, education and in those of a higher socioeconomic status. The term "lifestyle" is taken to mean a general way of living based on the interplay between living conditions in the wide sense and individual patterns of behavior as

determined by sociocultural factors and personal characteristics. The range of behavioral patterns may open limited or may extend by means of environmental factors. The way in which an individual lives may produce behavioral patterns that are either beneficial or detrimental to periodontal health. If periodontal health is to be improved, actions must be directed at both the individual and environmental factors affecting lifestyle.

Conclusion: The concept of lifestyle is something more than behavior; it is a way of life and studied as broadly as possible. From this study we concluded that there is a strong association of occupation, education level, income and smoking with periodontal diseases. Exposure to these factors might have contributed to deterioration of periodontal health in population. This clearly indicates the need for educating and motivating the population in maintaining good periodontal health and people should be made aware of the harmful effects of smoking.

India is a country with a population having diverse culture, life style and religious beliefs which might influence the health status of the individuals significantly. Hence it is necessary to conduct such surveys in different parts of the country and develop a strategy to improve the periodontal status of the population as a whole.

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