



Effect of socioeconomic status on periodontal health: A Cross Sectional Study

¹Amit De, ²Rajashree Ganguly, ³Sohini Banerjee, ⁴Gopal Chandra Bera, ⁵Pooja Singh, ⁶Anwasha Adak

¹Reader, ²Professor, Department of Periodontics, Kusum Devi Sunderlal Dugar Jain Dental College & Hospital, Kolkata, West Bengal, India

³Assistant Professor, Department of Periodontics, Dr. R. Ahmed Dental College & Hospital, Kolkata, West Bengal, India

^{4,5}Reader, ⁶Senior Lecturer, Department of Pedodontics and Preventive Dentistry, Kusum Devi Sunderlal Dugar Jain Dental College & Hospital, Kolkata, West Bengal, India

Corresponding author: Amit De, Reader, Department of Periodontics, Kusum Devi Sunderlal Dugar Jain Dental College & Hospital, Kolkata, West Bengal, India

Email: dramitde88@gmail.com

ABSTRACT

Background: Dental plaque plays the most crucial role as the etiology of periodontal disease. It is found that multiple risk factors can be responsible though. Among those like socioeconomic status can influence the behavior, awareness for oral hygiene maintenance, lifestyle, ultimately which might lead to the change in periodontal status.

Material and Method: A cross sectional study was conducted and a total of 1568 patients (aged >35 years) were selected randomly. The periodontal status was evaluated by clinical recordings of inflammation, bleeding on probing, periodontal pockets, and clinical attachment loss. According to the findings, the patients were grouped into two category - chronic generalized gingivitis (CGG) and chronic generalized periodontitis (CGP). Informations regarding their socioeconomic status were collected based on a questionnaire.

Results: The data were statistically analyzed. A significant decrease in periodontitis was observed as the income level increased ($P = 0.0039$).

Conclusions: The present study concluded that individuals with higher socioeconomic status exhibits better periodontal health.

INTRODUCTION

Periodontitis is a multifactorial chronic disease clinically expressed as connective tissue loss and radiographically alveolar bone loss. The maintenance of periodontal health depends on multiple factors. Primary etiologic factor of periodontal diseases is dental plaque. The accumulation of dental plaque over tooth surfaces is governed by multiple factors including the awareness about oral hygiene maintenance. It is well established that plaque microorganisms, immunological and genetic factors play a vital role in the etiology of periodontal disease. In the modern era, researchers are focusing toward combined influence of lifestyle and psychosocial factors along with standard risk factors¹. The socioeconomic status plays an important role here. Awareness about oral hygiene maintenance differs among

public with different level of socioeconomic status. Socioeconomic status also influences the lifestyle of human being that might lead to influence the periodontal status as well.

MATERIALS AND METHODS

The study was done on 1568 randomly selected individuals at kolkata, West Bengal. A cross-sectional study was conducted. **The subjects were randomly selected depending on following criteria:**

- Age of the patient should be 35 years or above
- Patient should have more than 15 teeth in mouth

The patients were rejected based on the following exclusion criteria:

- Who were recent covid positive

The written consent was taken from all the subjects who participated in the study.

Data was collected about their socioeconomic status and were assessed by using a basic questionnaire. The periodontal status was assessed by clinical recordings of inflammation, bleeding on probing, periodontal pockets, and clinical attachment loss.

Based on these above parameters, the patients were grouped into chronic generalized gingivitis (CGG) and chronic generalized periodontitis (CGP).

Socioeconomic status was categorized by monthly family income. **Three groups were constituted and subjects were categorized into:**

- Lower class (<15000)
- Middle class (15000-50000) and
- Upper class (>50000).

STATISTICAL ANALYSIS

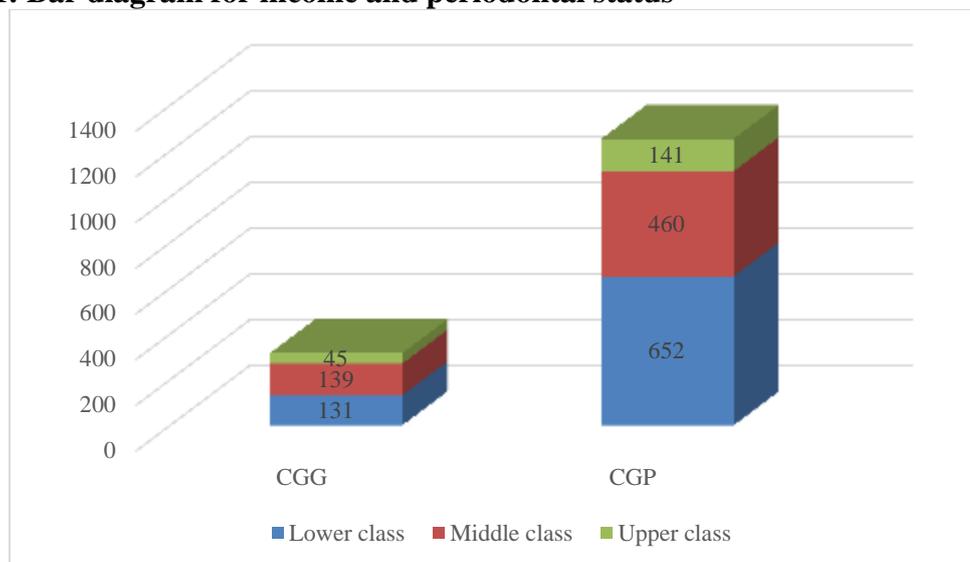
A total of 1568 patients were selected for this study. All the data were analyzed using the IBM SPSS Statistics version 22. The results were calculated by using Pearson's chi-square test. The value of $P < 0.05$ was considered statistically significant.

In comparison with socioeconomic status and periodontal status, a significant decrease in periodontitis was observed as the income level increased ($P = 0.0039$) as shown in Table 1.

Table 1: Association between income and periodontal status

| Income | CGG | Percentage | CGP | Percentage | P-value |
|--------------|-----|------------|------|------------|---------|
| Lower class | 131 | 41.59 | 652 | 52.04 | 0.0039* |
| Middle class | 139 | 44.13 | 460 | 36.71 | |
| Upper class | 45 | 14.28 | 141 | 11.25 | |
| Total | 315 | 100 | 1253 | 100 | |

*Statistically significant

Figure 1: Bar diagram for income and periodontal status**RESULTS**

The results were calculated by using Pearson's chi-square test to calculate the P -value: When the association between the income and periodontal status was compared, a significant decrease in periodontitis was observed as the income level increased ($P < 0.0001$) as shown in Table 1.

DISCUSSION

When the socioeconomic status was compared to the periodontal status, the present study showed a positive association between higher socioeconomic groups and better periodontal status. This is in accordance with Neuman *et al.* who identified lower occupational status limits the use of dental services². Borrell *et al.* 2006 found associations between individual socioeconomic indicators and prevalence of severe periodontitis. Low income was associated with presence of severe periodontitis among whites, and low education and income levels were associated with severe periodontitis among African Americans³. In 1998, World Health Organization in Europe listed the social gradient first among the ten factors identified as the key social determinants of health and a major contributor to unequal health outcomes in populations⁴. Unhealthy lifestyle has been shown to be worse among people with a lower socioeconomic status⁵. A lower occupational status clearly limits the use of dental services, which seemed to be a lesser extent related to general lifestyle. And also, by providing 'social support' it may well be possible to help people to cope with their problems, to remain in good mental and physical health despite crisis or everyday wear-and-tear on their systems, and to lead fuller and longer lives⁶.

CONCLUSION

The present study concluded that individuals with higher socioeconomic status exhibits better periodontal health. The socioeconomic status might not be directly associated with periodontal status but definitely indirectly influences the periodontal health. There are few shortcomings of this present study. We have evaluated a small group only which might not reflect the true picture of whole community. So the sample size should be increased to find out more direct correlations. Also the socioeconomic status of the patients could not been verified. The socioeconomic status was reported as informed by the patients themselves.

REFERENCE

1. Kickbusch I. Lifestyles and health. *SocSci Med* 1986;22:117-24.
2. Newman JF, Gift HC. Regular pattern of preventive dental services: A measure of access. *SocSci Med* 1992;35:997-1001.
3. Borrell L.N, Beck J.D, Heiss G. Socioeconomic disadvantages and periodontal disease: The dental atherosclerosis risk in communities study. *American Journal of public health* 2006; 96:2.
4. Wilkinson R, Marmot M, editors. *Social determinants of health: The solid facts*. Geneva: World Health Organization 1998;10–1.
5. Aro S, Rasanen L., Telema, R, Social class and changes in health related habits in Finland in 1973-1983. *Scan. J.Soc Med* 1986;14:39-47.
6. WHO health education unit. *Lifestyle and health*. *Soc. Sci.Med.* 1986; 22: 2:117-128.