Research Article

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A survey to assess the effect of Socioeconomic Status on Caries Prevalence in Madhya Pradesh Population

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ABSTRACT

Background: The aim of the present study is to evaluate the influence of socioeconomic status and social habits on the prevalence of dental caries in the Madhya Pradesh population.

Methodology: Cross-sectional study was conducted on 1000 patients by survey method using a questionnaire. Data was collected based on demographic details, information on income, educational qualification, occupation, social habits (tobacco and alcohol consumption) and caries exposure in terms of the presence or absence of dental caries or a restoration.

Results: The data were tabulated using Microsoft Excel and statistically analyzed using SPSS version 22. The caries prevalence according to SES, where 91.8% of subjects in the lower SES have a caries exposure, while only 82% and 73.4% of the medium and higher economic status respectively, had caries. Within the limitations of the present study, it can be concluded that there exists a connection between the individuals' socioeconomic condition and their oral health status that calls for the implementation of oral health programs.

Keywords: Caries prevalence, Socioeconomic status, Tobacco users and dental caries.

INTRODUCTION

Socioeconomic status is generally measured by indicators of human capital, such as social class, wealth, education and individual income, and educational and occupational prestige. Income, education, and occupation, the three mysterious determinants of health, are not likely to have a direct effect but serve as proxies for other determinants. Hence, what appears to be a direct impact of SES inequality may instead be operating through differential exposure to conditions that have more immediate effects on health. This includes health care, environmental exposure, behavior, and lifestyle. Oral health is a vital part of general well-being. Despite enormous efforts to enhance oral health on a global scale, dental caries and periodontal disease continue to plague many populations around the world.[1-5] Dental caries is a multifactorial disease. Gender, socioeconomic status (SES), oral hygiene, and social habits like alcohol consumption and use of tobacco products may be key determinants in disease progress. Socially disadvantaged individuals also experience disadvantages with regard to health in general. The greater frequencies of disease in small population groups are known as polarization . The association between the relative position each social group

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occupies and differences in the risk for various health conditions and in access to healthcare services makes social stratification a determinant of these conditions. There was a paucity in the literature regarding the association of SES on the prevalence of dental caries in Madhya Pradesh population.[2-10] Taking into consideration the public health significance of dental caries, this study was undertaken to estimate the magnitude of impact of SES and social factors on the disease prevalence. Thus, the aim of this study is to evaluate the influence of SES and social habits on the prevalence of dental caries in Madhya Pradesh population.

MATERIALS AND METHODS

The cross-sectional study was conducted in Madhya Pradesh population. After obtaining the ethical clearance from the Institution's Review Board, patients visiting the outpatient department were recruited. The nature of the survey and the objectives were explained to the patients. They were assured of the confidentiality regarding the information. Informed consent was obtained from the patients. Essential treatment was provided after the assessments were completed. The study population comprised 1000 patients who were attending the outpatient department of the hospital. A pilot study was done and the sample size was calculated based on the results of the pilot study. A survey form was prepared to record the demographic details, information on the income, educational qualification, occupation, social habits (tobacco and alcohol consumption), and the caries exposure in terms of presence or absence of dental caries or a restoration. The data were collected by a single operator. All examinations were done under illumination using a sterile mouth mirror and explorer. Only definite cavitations of the tooth surface were recorded as dental caries to reduce examiner confusion regarding diagnosis and exclusion of intact demineralized (white spot) lesions. The data were tabulated using Microsoft Excel and statistically analyzed using Statistical Package for the Social Sciences version 22.

RESULTS

The study population comprised 1000 patients in the age group of 18 to 75 years. Among the study participants, 500 were males and 500 were females. Table 1 shows the caries prevalence according to SES, where 91.8% of subjects in the lower SES have a caries exposure, while only 82 and 73.4% of the medium and higher economic status respectively, had caries. Study also showed comparison of proportion of caries affected subjects among the alcohol and tobacco users. A total of 200 subjects of alcohol users had a caries exposure. Among the tobacco users, 65% were affected, while 70% among the nontobacco consumers were affected. Chi-square analysis of the data collected showed that the difference in the caries prevalence among the various categories of SES was statistically significant.

Table 1: Caries prevalence according to SES.

SES	Percentage
Low	91.8%
Medium	82%
High	73.4%

DISCUSSION

Socioeconomic status is associated with a wide range of health-related issues. The gap between the health "haves" and the "have-nots" is exaggerated by the disparities in these components. Addressing the pathway by which the components of SES affect oral health is of primordial importance. Identification of this enables for better treatment options. Income, occupation, and education are traditionally regarded as the components of SES. Based on the results of the current study, there exists an inverse relationship between the prevalence of dental caries and SES. [10-20] Those with less education and less income are more likely to smoke. Smoking prevalence reflects, the likelihood of initiating smoking as well as of quitting. Winkleby et al.[14] found that neither education nor income was associated with smoking onset. Also, studies have claimed that there is fairly strong evidence for an inverse relationship between SES and the prevalence of caries among children less than twelve years of age. More studies directly aimed at analysing the relationship between SES and dental caries are needed to identify factors associated with SES that contribute to dental caries risk. [15-20]The results of the present study also show that the caries prevalence was higher among the nonalcohol and tobacco users. Alcohol has been thought to influence dental caries via the microbial oxidation of

ethanol in saliva in alcohol abusers, resulting in the formation of acetaldehyde that inhibits the cariogenic oral flora. It is still unclear how different use of psychoactive substances influences the overall dental caries experience in the Madhya Pradesh population.

CONCLUSION

Our study concluded that there exists a connection between the individuals' socioeconomic condition and the oral health status that calls for implementation of oral health programs. Individual's habits like tobacco and alcohol do have an influence on caries prevalence, though further studies are required to obtain a clear association.

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