



A Survey on the General Awareness of Inter-Relationship between Periodontal Disease and Systemic Health among Jammu Population

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ABSTRACT

Background: Recent findings have strongly suggested that oral health may be indicative of systemic health. The gap between allopathic medicine and dental medicine is quickly closing, due to significant findings supporting the association between periodontal disease and systemic conditions such as cardiovascular disease, type 2 diabetes mellitus, adverse pregnancy outcomes, and osteoporosis. The aim of this study was to assess the awareness among the general public about the inter-relationship between periodontal diseases and systemic health.

Materials and methods: A questionnaire with questions including general awareness about periodontal diseases and their effects on systemic health were given to patients and were asked to select their preferred option of yes, no, and don't know.

Results: The results obtained showed increased awareness among 35-50 years age group, females and postgraduates according to their category of age group, gender and education respectively.

Conclusion: There is surely a strong influence of oral health on systemic well-being of a person. Hence, researchers must continue not only to uncover more information about the correlations between periodontal and systemic diseases but also to focus on positive associations that may result from treating periodontal disease as a means of ameliorating systemic diseases.

Keywords: awareness, inter-relationship, periodontal diseases, systemic diseases.

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I. INTRODUCTION

Periodontal disease refers to the inflammatory processes that occur in the tissues surrounding the teeth in response to bacterial accumulations or dental plaque on the teeth. The bacterial accumulations result in an inflammatory response from the body. Periodontal disease is increased by several risk factors: cigarette smoking; systemic diseases; medications such as steroids, anti-epilepsy drugs and cancer therapy drugs; ill-fitting bridges; crooked teeth and loose fillings; pregnancy; and oral contraceptive use. In addition to these variables, any medical condition that triggers host antibacterial defense mechanisms, such as human immunodeficiency virus (HIV) infection, diabetes, and neutrophil disorders, will likely promote periodontal disease [1].

Oral health is an inevitable and essential requisite for the systemic well-being of an individual. The systemic health of an individual depends on the degree of oral hygiene maintenance [2]. To prevent any disease, awareness about the concerned disease is mandatory. This awareness needs to be enhanced by patient education. The knowledge about periodontitis and its systemic impact needs to be made aware to the general public to aid them in maintaining their oral as well as systemic health [3].

Thus a questionnaire based study was conducted to assess the awareness among the general public about the inter-relationship between periodontal diseases and systemic health.

II. MATERIALS AND METHODS

A total of 500 outpatients above the age of 20 who attended the OPD of department of Periodontology, Indira Gandhi Govt. Dental College were included in the study. In the case of postgraduate individuals, individuals with postgraduation in any subjects other than medical, dental, and paramedical courses were

included in the study. Patients without schooling were excluded and medical, dental, and paramedical individuals were also excluded from the study.

A questionnaire containing 18 questions pertaining to the association between periodontal health and general health, along with demographic and their personal details was given to the patients. The questions were grouped based on general awareness towards periodontitis, interrelation between periodontitis, and various factors such as smoking, nutrition, diabetes, cardiovascular disease, and pregnancy. The individuals were allowed to select from three options: YES, NO, and DON'T KNOW.

The questions were categorized into six groups: A, B, C, D, E, and F. Group A included questions based on the general awareness on periodontitis, Group B questions were related to assess awareness regarding interrelationship between smoking and periodontitis, Group C – Effects of nutrition on periodontium, Group D – Influence of diabetes on periodontium, Group E – Cardiovascular system effects on periodontium and Group F – Effects of pregnancy on periodontium. The individuals were assessed based on their age, gender, and qualification.

SPSS version 22.0 SPSS version 22.0, (IBM Corp, Armonk, NewYork) was used for statistical analysis.

Chi-square test was used to find the association between the variables, to determine the significant differences between the frequencies in one or more categories.

III. RESULTS

The study comprised of total 500 subjects attending the OPD of the department of Periodontology.

Out of 500 individuals, according to gender specification, 258 were females and 242 were males.

According to age group, 276 individuals were <35 years, 178 individuals were 35–50 years, and 46 individuals were >50 years.

Based on educational qualification, 264 who completed high school education, 208 graduates, and 28 postgraduates were enrolled for the study.

The responses of the 500 individuals were evaluated. Table 1 shows the general awareness level among the 500 individuals.

Table 1: General awareness of the survey population. Greater proportion of individuals were aware on periodontal and systemic interrelationship.

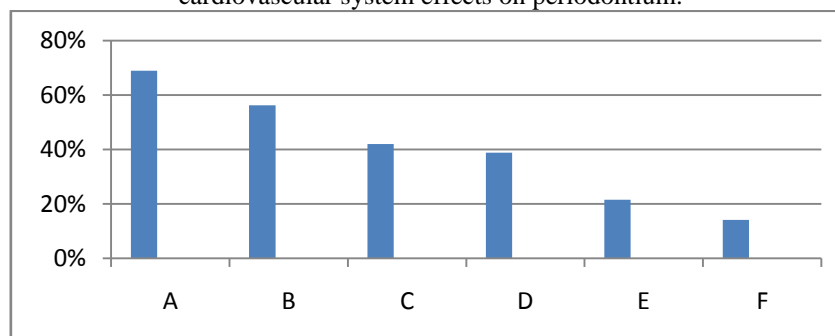
Response of the survey population	Percentage (%)
Yes	69%
No	31%

The individuals were most aware about the detrimental effects of smoking on the periodontium and least aware about the effects of periodontal disease on the cardiovascular system as well as pregnancy (table 2) and (Figure 1).

Table 2: Distribution of awareness among the question categories.

Question category	% of awareness
General awareness on periodontitis	69%
Smoking	56.23%
Nutrition	42.04%
Diabetes Mellitus	38.85%
CVS	21.56%
Pregnancy	14.13%

Figure 1: Graph comparing awareness level based on category. Awareness level was low for pregnancy and cardiovascular system effects on periodontium.



A-General awareness on periodontitis, B-Smoking, C-Nutrition, D- Diabetes, E-CVS, F- Pregnancy. Females were found to have higher level of awareness than males. Based on the level of education, postgraduates were found to be most aware of this interrelationship. Based on the age group, on an average, the group of individuals 35–50 years were found to have higher awareness level than the other two groups.

IV. DISCUSSION

Periodontal disease as a risk factor for the development of various systemic conditions, such as Cardiovascular diseases, diabetes, adverse pregnancy outcomes, and osteoporosis, is a highly researched and debated topic. Although most evidence in regard to the relationship between periodontal disease and those systemic conditions is consistently supportive of this notion, the need for more studies is greatly advocated by physicians and dentists.

The results of our study showed that the general awareness level of patients on periodontitis was good with a percentage of 69%. This result was found to be in agreement to the study conducted by Hemalatha DM et al.[4] and contradictory to the result seen in a study conducted by Bhatia *et al.* [5]. which showed a poor awareness among the study conducted among North Indian population. This higher level of awareness might be due to the higher literacy level of the survey population of Jammu region.

Awareness level of females was found to be higher than males in our study. These results were in accordance with the results of Hemalatha DM et al.[4] and Gupta *et al.*[6] where females were more aware than males. These results signify the increased level of awareness of females on periodontitis and its systemic interrelationship than males.

Postgraduates had higher awareness than the other two study groups. This increased awareness could be attributed to their higher education level. In our study, the awareness of 35–50 years age group was higher than other ages. This result was found to be in agreement with the study conducted by Hemalatha DM et al.⁴ and is in contrast to the study done among Andhra Pradesh population where the age group of 18–24 years had higher awareness [7].

This study reveals high awareness among the survey population regarding the ill effects of smoking on periodontium. Also a good percentage of the population is aware of the detrimental effects of nutritional deficiencies on periodontium. However, this study reveals a low awareness about the detrimental effects of periodontal disease on pregnancy and cardiovascular diseases. Interdisciplinary approach with regard to oral health care during pregnancy can enhance the quality of maternal and fetal health. Pregnant women must be enrolled under a strict oral hygiene maintenance program from their first trimester.

There are remote chances for patients to be aware that some of the antihypertensive drugs have the potential to cause gingival hyperplasia. Awareness must be created among cardiac patients for the potential risk for cardiac accidents due to periodontitis [4]. The general public must be made aware that self medication might mask a serious underlying periodontal and systemic problem. Timely professional advice should be pursued to ensure oral and systemic well-being.

V. CONCLUSION

There is surely a strong influence of oral health on systemic well-being of a person. Hence, researchers must continue not only to uncover more information about the correlations between periodontal and systemic diseases but also to focus on positive associations that may result from treating periodontal disease as a means of ameliorating systemic diseases. General public needs to be educated on the benefits of maintaining good oral hygiene. Periodontal health care should also be incorporated into primary and community health services. Dental awareness must be intensified by awareness programs, camps, and through social media. Further studies need to be conducted on larger sample size and with individualized questionnaire for specific systemic complications to evaluate the results of our study.

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