

Knowledge and Awareness about Interrelationship of Periodontal Diseases and Systemic Health among Population of Gandhinagar: A Questionnaire-based Survey

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Abstract

Aim: The aim of the study was to evaluate the awareness among the general public about periodontal diseases and its impact on systemic health. **Materials and Methods:** A questionnaire with 15 questions along with general awareness about periodontitis and its effect on systemic health has been given and requested to select their preferred options. The awareness of the people regarding systemic health was categorized primarily based on their age and academic qualification. **Results:** The results obtained showed increased awareness among 3–45 years group of individuals and postgraduates according to their category of age group and education, respectively. **Conclusion:** Oral health upholds the overall well-being of the patient. Further studies and camps need to be conducted to increase the awareness among the general population.

Keywords: Awareness, Interrelationship, Periodontal health and diseases, Systemic health and diseases.

INTRODUCTION

Health is a state of complete physical, mental, and social well-being and not simply the absence of disease or infirmity. General health cannot be attained or maintained without oral health. The mouth seems as a mirrored image and the gateway to health. Integration is wanted many of the dental practitioner and the patient, if good dental health is to be attained.^[1] Periodontal disease is one of the maximum normal diseases affecting human dentition and one of the principle reasons of tooth loss. Gingivitis, a milder form of periodontal disease, is normally found among humans of all age groups. Periodontitis is an infectious disease characterized with the aid of using inflammatory changes in the tissues surrounding to tooth leading to periodontal attachment loss and alveolar bone destruction. As dental caries has declined, periodontitis has grown to be the most usual reason for tooth loss in adults.^[2] A high prevalence of gingivitis and periodontitis had been found in population belonging to the lower socioeconomic status group compared with the higher socioeconomic groups, which many of were associated with poor oral hygiene habits.^[3] Literary search on numerous epidemiological research has discovered the global prevalence and occurrence of periodontitis.^[4] It is alarming to see the massive rise within side the incidence of periodontal diseases in the current times. Severe form of periodontitis is the 6th maximum prevalent disease with

better prevalence worldwide.^[5] The prevention is constantly better than cure. To prevent any disease, recognition approximately the concerned disease is mandatory. This awareness needs to be greater with the aid of using patient education. The information approximately periodontitis and its systemic effect wishes to be made conscious to the overall public to aid them in preserving their oral in addition to systemic fitness.^[6] There are diverse steps that may be taken to useful resource in this. For example, periodic visits to dental health-care provider for oral prophylaxis, oral health maintenance, and life-style amendment like abstaining from smoking. The function of a periodontist is important in creating awareness to the patients regarding his/her periodontal health and systemic health interrelationship. As a primary step toward educating the patient, we have conducted a questionnaire-based study among the overall public population attending the outpatient department (OPD) of Department of Periodontics, to evaluate their awareness at the periodontal-systemic interrelationship.

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MATERIALS AND METHODS

The study comprised 525 participants from general population attending the OPD of the department of periodontology. According to age group, 288 candidates are between 3 and 45, 237 candidates are between 19 and 29 based on educational qualification, 252 are postgraduate candidates, 183 graduate candidates, and 9 undergraduate candidates were enrolled for our study.

Inclusion criteria

A total of 525 outpatients with minimal education qualification of high school education, above the age of 18, attending the OPD of department of periodontology were included in the study.

Exclusion criteria

The following criteria were excluded from the study:

- a. Patients without schooling
- b. Postgraduate college students of periodontology

A questionnaire containing 15 questions concerning the link among periodontal health and general health, together with demographic details, became given to the patients included in the study. The questions had been grouped primarily based totally on general awareness toward periodontitis, interrelation among periodontitis, and different factors which include nutrition deficiency, diabetes, cardiovascular disease, and pregnancy. The individuals had been allowed to pick out from three options: Yes, no, and do not know. The questionnaires had been then evaluated for his or her responses. The individuals had been assessed primarily based totally on their age and qualification.

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. SPSS version 22. SPSS version 22. (IBM Corp, Armonk, New York) was used.

DISCUSSION

Accumulation of plaque and calculus causes sequelae of reactions leading to gingivitis and if not treated, periodontitis.^[7,8] Poor oral health not only causes gingivitis and periodontitis but also impacts the systemic health. Periodontitis is known to have various systemic relationships with endocrine system, cardiovascular system, etc.^[9] These all systemic interrelationships if understood correctly will enhance both oral and systemic health.^[10,11] Individuals with higher awareness were found to have good glycemic control than the unaware population. The significant associations had been found between some of the self-care behaviors and oral hygiene levels stated the important role of patient-centered oral health assessment in periodontal care.^[12] Poor oral hygiene is directly associated with the lack of knowledge in the population who were using brush and toothpaste once a day and replaced their toothbrush for more than 3 months.^[13]

Postgraduates had higher awareness than the other two study groups. This increased awareness could be attributed to their higher education level. This result was in contrary to the results of other study, where the individuals with least educational qualification had higher knowledge on awareness.^[14]

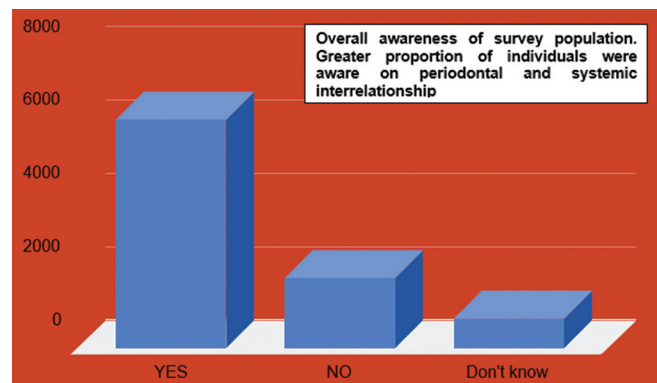
In our study, the awareness of 3–45 years age group was higher than other ages. This result was found to be in contrast to the study done among Gujarat population, where the age group of 18–24 years had higher awareness.^[14]

However, this study reveals a low consciousness about the adverse effects of periodontal disease on pregnancy and chorionic villus sampling. Increased levels of Prostaglandin E2 are massive marker of chronic inflammation like periodontitis. Periodontopathic microorganism and excessive levels of Prostaglandin E2 had been diagnosed within side the amniotic fluid of women who had preterm birth.^[15,16] This can result in numerous pregnancy-associated complications which include low birth weight, preterm delivery, and pre-eclampsia.^[17] Interdisciplinary method with regard to oral health care during pregnancy can enhance the quality of maternal and fetal health. Pregnant women should be enrolled under a strict oral hygiene maintenance program from their first trimester.

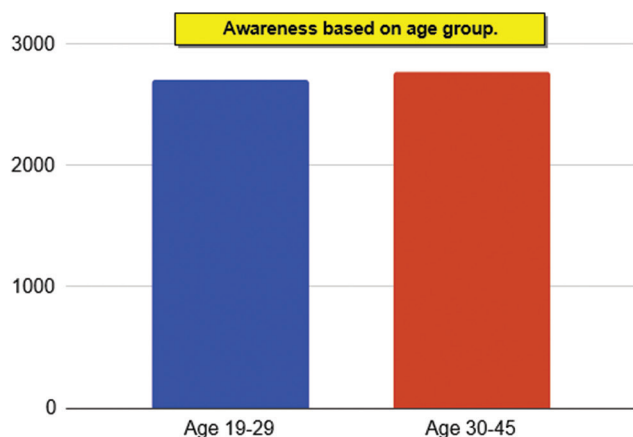
Number of patients consuming antihypertensive drugs for high blood pressure is alarming, and there are far flung probabilities for patients to be conscious that a number of the antihypertensive drugs have the potential to cause gingival hyperplasia or gingival enlargement. Awareness has to be created among cardiac patients for the potential risk for cardiac accidents due to periodontitis. From the results obtained in our study, it became obvious that the general public had a general focus about the link among periodontal disease and systemic health. Hence, with due motivation of the patients, periodontal maintenance and attaining healthy oral hygiene could be without difficulty achievable. Patients with systemic diseases have to be distinguished from different patients and endorsed to have a strict recall visit in dental OPD.

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.

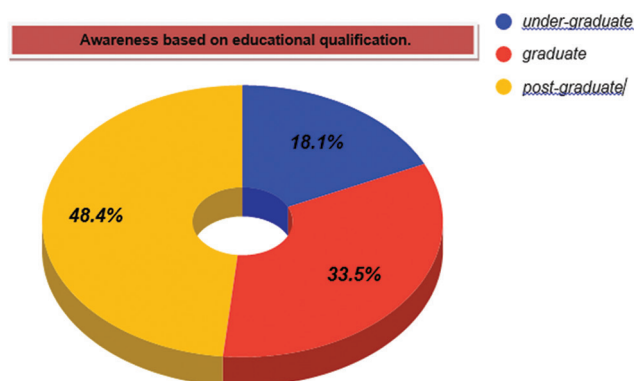
1. Enhance public awareness
2. Improve access to periodontal care
3. Upgrade awareness on standard of professional care for periodontitis
4. Enhance public awareness of the potential of undergoing timely periodontal treatment in saving medical care.



Overall awareness of survey population. Greater proportion of individuals was aware on periodontal and systemic interrelationship.



Awareness based on age group. 3–45 year age group has higher awareness level in all question categories.



Awareness based on educational qualification. Increased awareness level with increase in education qualification.

RESULTS

The results obtained showed increased awareness among 3–45 years group of individuals and postgraduates according to their category of age group and education, respectively.

CONCLUSION

General public needs to be knowledgeable at the benefits of keeping proper oral hygiene. Treating periodontitis is known to decrease the chance of cardiovascular injuries like atherosclerosis in cardiac patients and additionally discovered to influence the premature childbirth and decreased birth weight of the babies.^[18,19] The effect of nutritious food on gingival health additionally needs to be emphasized to the patient.^[20] Periodontal health care must additionally be integrated into primary and community health services. Dental awareness ought to be intensified through awareness programs, camps, and through social media. Further, research want to be performed on large sample size and with individualized questionnaire for particular systemic complications to assess the results of our study. Patients with systemic complications that have effect on oral care ought to be penned right all the way down to a recall visit protocol for his or her overall well-being and health.

Limitations of the study

Spacing of population based on education qualification should have been equal.

Questionnaire

Name: Age: M/F

Education: Occupation:

Serial number	Questionnaire	Yes	No	Do not know
1	Are you aware of gum disease (also known as periodontitis), a disease that affects the gums?			
2	Are you familiar with gum disease symptoms such as bleeding gums, loose teeth, increased size of gums and pus discharge?			
3	Do you believe gum disease can be avoided?			
4	Do you believe gum disease is inherited?			
5	Did you know that one of the leading causes of bad breath is gum disease?			
6	Are you aware that proper periodontal (oral) health can help you in maintain overall general health?			
7	Are you aware that dietary deficiencies (vitamins) in the diet can result in redness of gums and bleeding gums?			
8	Did you know vitamin supplements can improve periodontal (oral) health?			
9	Did you recognize patients with excessive sugar levels have higher incidence of teeth loss?			
10	Did you recognize that excessive blood sugar levels can increase the risk of infection within the oral cavity?			
11	Do you think gum disorders can have an effect on blood glucose levels in a diabetic patient?			
12	Were you aware that microbes inflicting gum disorder can cause the narrowing of the blood vessels, leading to diverse coronary heart diseases?			
13	Did you know certain medicines given for blood pressure can increase the size of the gums?			
14	Do you know that there is an increased tendency for bleeding gums and swelling of gums during pregnancy?			
15	Are you aware that gum disease can cause premature delivery or low birth weight babies?			

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