

KNOWLEDGE AND AWARENESS ABOUT THE INFLUENCE OF PERIODONTITIS ON SYSTEMIC CONDITIONS AMONG MEDICAL PRACTITIONERS: A QUESTIONNAIRE STUDY

Running Title: Knowledge and awareness about influence of periodontitis on systemic conditions

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ABSTRACT:

AIM AND OBJECTIVE: The study's goal was to measure medical practitioners' knowledge and understanding of the impact of periodontitis on systemic diseases.

MATERIALS AND METHODS: A web-based questionnaire of 10 questions were formulated regarding the periodontal diseases affecting the systemic conditions and circulated among 200 medical practitioners.

RESULTS: Most practitioners had acceptable awareness of the idea of focal theory of infection (81 %), signs and symptoms of periodontitis (82 %), and systemic disorders as a risk factor for periodontal disease, according to the findings of this study (86 %). 54% of the study subjects were aware that periodontal disease is a risk factor for systemic diseases. 84% of them were unaware that periodontal therapy will improve blood glucose level and the subjects who were not aware about the association between adverse pregnancy outcomes, pulmonary diseases, and atherosclerotic coronary heart disease were 67%, 54%, and 59%, respectively

CONCLUSION: The knowledge and understanding of periodontitis impacting systemic diseases was good in the current study, but much more awareness is needed because they must understand the importance of dental health since it can lead to a variety of systemic health difficulties.

KEYWORDS: Oral health, Systemic diseases, Periodontitis, Cardiac diseases, Medical practitioners.

INTRODUCTION :

Periodontitis, often known as gum disease, is a dangerous gum infection that affects the soft tissue and can ruin the bone that supports your teeth if left untreated. [1]. Periodontitis can cause teeth to loosen or even fall off. [2].

Brushing your teeth at least twice a day, flossing daily, and seeing a dentist on a regular basis can all help you get better outcomes with periodontitis treatment and reduce your chance of having it.^[3] Periodontitis aetiology is largely determined by the presence of certain risk factors. Periodontal pathogens include *Aggregatibacter actinomycetemcomitans*, *Fusobacterium nucleatum*, *Peptostreptococcus micros*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Treponema denticola*, *Treponema forsythia*, and potential periodontal pathogens such as *Filifactor alocis* and *Parvimonas micra*.^[4] Furthermore, different variables like as social and behavioural factors, environmental factors, systemic and genetic factors all impact the onset and development of periodontitis.^[5]

Plaque accumulation, calculus development, gingival redness and swelling, gingival bleeding and suppuration, halitosis (poor breath), and alveolar bone loss are some of the indications and symptoms.^[6] Tooth migration, reduced aesthetics, altered castigatory function, and tooth loss are all possible outcomes of severe types of the disease ^[7]. Periodontitis is a worldwide infection that affects people of all ages, however the condition is more prevalent in the elderly.^[8]

Miller's "FOCAL INFECTION THEORY" is used to explain the incidence of numerous illnesses related with periodontitis. Dental pulp disorders and monthly infections have traditionally been blamed for the development of focused diseases ^[10]. Nonetheless, as greater attention has been paid to the possible linkages between periodontal infection and systemic disorders in recent years, their importance has been questioned ^[11]. Periodontal infections and their products, as well as inflammatory mediators produced in periodontal tissues, can enter the bloodstream and cause systemic effects and/or contribute to systemic illnesses.^[12,13] Atherosclerosis and diseases such as Alzheimer's disease have all been linked to chronic periodontitis based on this mechanism.^[14,15]

Despite the fact that numerous research studies have been conducted in this subject, many medical practitioners are unaware of the fundamental relevance of excellent oral health in the prevention of different systemic diseases ^[16]. The major goal of this study is to use a questionnaire-based technique to examine medical practitioners' knowledge and awareness of the impact of periodontitis on systemic disorders.

MATERIALS AND METHODS:

The questionnaire-based study was done among medical professionals from all fields of specialisation. There were around ten questions, the majority of which focused on knowledge and awareness of the impact of periodontitis on systemic disorders. A total of 200 medical professionals were tasked with answering the questions. The data was collected and statistically examined. Software (SPSS version 16) was used for data processing and analysis in the statistical analysis. Medical experts with more than 15 years of experience are eligible to participate. The study did not include undergraduate medical students, interns, or postgraduate medical students. The Saveetha Dental College and Hospitals' Institutional Ethical Committee examined and approved the study protocol.

RESULTS:

The survey was mainly done to analyze the knowledge and awareness about influence of periodontitis affecting the systemic conditions among the medical practitioners of various fields. The medical practitioners exhibited different opinion about the influence of periodontitis in the systemic conditions.

In the current study [TABLE 1], 81 % of the 200 participants were familiar with the focal theory of infection, whereas 19 % were unfamiliar with the notion. They were aware of the numerous indications and symptoms of periodontal disease in 82 % of cases. Only 54% of the survey participants were aware that periodontal disease is also a risk factor for systemic diseases, despite the fact that 86 % of the practitioners were aware that systemic disorders can contribute to periodontal disease. Furthermore, only 9% of them correctly identified periodontitis as the sixth consequence of diabetes mellitus, while 91% provided a negative response. Only 16 % of them were aware that periodontal treatment lowers blood glucose levels in the body, while the remaining 84 % were unaware. There were 54 % and 59 % favorable replies, respectively, to the link between periodontal disease and pulmonary illnesses and atherosclerotic coronary heart diseases. Only 33% of the survey participants were aware that periodontal disease can impair pregnancy outcomes, and only 72% were aware that pregnant women are more likely to have bleeding and swollen gums. The findings were statistically significant (p=0.001).

	RESPONSES
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	YES [%]	NO [%]
Do you know about the concept of focal theory of infection?	81	19
Do you know the various signs and symptoms of periodontal diseases?	82	18
Are you aware that the periodontal diseases that might lead to systemic diseases?	86	14
Are you aware that periodontal diseases are one of the risk factor for the systemic diseases?	54	46
Do you know that the 6 th complication of diabetes mellitus is periodontitis?	9	91
Are you aware that proper periodontal therapy will improve the blood glucose level?	16	84
Do you know that periodontal disease can aggravate the complication for pulmonary diseases?	54	46
Do you know that periodontal disease could affect the outcomes of pregnant patients?	33	67
Are you aware that there will be more tendencies to bleeding and swollen gums in case of pregnant women?	72	28
Are you aware that periodontal disease could increase the risk of atherosclerotic coronary heart disease?	59	41

TABLE 1: Table showing the questionnaire to assess the knowledge and awareness on the influence of periodontitis on systemic diseases among medical practitioners

DISCUSSION:

Traditionally, oral problems have been treated separately from those that affect the rest of the body [17,18]. However, in recent years, researchers have attempted to recognise that oral infections could be a risk factor for systemic disease [19]. Because severe periodontal disease affects such a small percentage of the population, efforts are being made to identify the systemic and other risk factors associated with severe periodontal disease in this subpopulation so that cost-effective public health measures can be taken to prevent periodontal disease.[20,21].

Finally, focusing on the involvement of systemic components in periodontal disease will aid researchers in better understanding which variables are relevant in the regulation of periodontal disease..[22]. According to a study [23,24], many persons with periodontal disease symptoms looked to be uninformed of their illness, and they also did not appear to have been informed or treated for it. Gum disease awareness differs across medical and related professionals [25]. A study of nursing home personnel [26, 27] found that they had a good understanding of periodontal disease and denture maintenance. [28,29]. The majority of the practitioners had appropriate understanding of the focal theory of infection (81 percent), periodontitis signs and symptoms (82 percent), and systemic disorders as a risk factor for periodontal disease (86 percent) [30], which was similar with the previous study's findings. Only 54% of those who took part in this study were aware that periodontal disease is a risk factor for systemic diseases.[31].

A similar research was undertaken by Anandakumar and Sankari [32,33] among medical practitioners to examine awareness of periodontal disease and its association to systemic disorders, finding that 73 % were unaware that periodontal therapy will improve blood glucose levels, and that 76 %, 68 %, and 58 % of the study subjects were unaware of the link between adverse pregnancy outcomes, pulmonary diseases, and atherosclerotic coronary artery disease, respectively. In our study, 84 percent of the participants were unaware that periodontal therapy improves blood glucose levels, and 67 %, 54 %, and 59 % of the participants were unaware of the link between adverse pregnancy outcomes, pulmonary diseases, and atherosclerotic coronary heart disease, respectively.

Trinaina Somas Kandan and Arvina Rajasekar [34,35] did a similar research on periodontal disease knowledge among pregnant women. According to the findings of this study, over 68.6% of women were uninformed that pregnancy may cause periodontal disease, and nearly 74.4 percent were unaware of the dangers of pregnant periodontitis. Similarly, just 33% of medical practitioners in our survey were aware that periodontal disease might have an impact on the outcomes of pregnant women.

However, the research's key weaknesses were that it was a single-centered study with a geographical restriction and a smaller sample size. The study can yield better findings if it is conducted with a larger sample size and people of varied races.

CONCLUSION:

Even if medical practitioners had a thorough grasp of periodontal disease, the findings of this study suggest that they did not. Periodontal disease, its signs and symptoms, treatment options, and the impact of periodontal disease on overall health were all absent.

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