"Assessment of Knowledge and Awareness Among Medical Students About Relationship Between Periodontal Disease and Systemic Health- A Survey Study"

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ABSTRACT: **Background:** To determine medical students' awareness about periodontal disease and how it is correlated with systemic illness. **Methods:** A Cross-sectional survey was conducted among 188 medical students from Rama Medical College and Hospital , Mandhana (Kanpur). Statistical analysis: Descriptive statistical analysis and chi-square test were used. **Results:**

Ninety percent of the participants said that dental health was very important, and seventy-seven percent knew about periodontal disease. However, only eight percent knew about the reciprocal association between systemic illness and periodontal disease.

The inclusion of specific dental courses on oral examination and diagnosis in medical curriculum was supported by 94% of participants. **Conclusion:** We come to the conclusion that some dental concepts, such as oral examination and diagnosis, must be included in medical curriculum**.**

Keywords: Knowledge; Medical curriculum; Periodontal disease; Systemic disease

INTRODUCTION:

An infectious condition called periodontitis is linked to a few, primarily gram-negative microbes that live in a sub gingival biofilm.[1] The World Health Organization (WHO) estimates that between 10% and 15% of people worldwide have severe periodontitis.
With a prevalence incidence of 55.4% in children aged 12 to 14, 89.2% in those aged 35 to 44, and 79.4% in those aged 65 to 74, it is the most prevalent oral infection in India.[2]

From relatively treated gingivitis to irreversible severe periodontitis, there are several phases of periodontal disease.
When periodontal pathogens and their toxins, such as cytolytic enzymes and lipopolysacchari des, enter the bloodstream during the pathogenesis of the disease, several inflammatory mediators are produced, such as interleukin (IL)β, tumor necrosis factor alpha, prostaglandin E2, and interferon-ϒ.
These inflammatory mediators trigger the body's chronic inflammatory response, which break s down connective tissue attachment and causes periodontal pocket formation, gingival recess ion, alveolar bone resorption, tooth mobility, and tooth loss.[3,4]

While pathogenic microorganisms are essential for periodontal disease, a vulnerable host is also necessary for the illness to be caused.Numerous systemic disorders serve as risk factors or modifiers for periodontitis.There is a reciprocal association between periodontitis and systemic conditions such diabetes mellitus, heart disease, stroke, premature labor, pre clampsia, and respiratory condition such as chronic obstructive periodontal disease (COPD) and pneumonia has been established.[1-5]

There are several potential biochemical routes that connect systemic illness with periodontal infection. For example, (a) oral

hematogenous dissemination of periodontal infections and direct organ effects(b) Direct effects on target organs and the transtracheal spread of periodontal diseases.

(c) Hematogenous oral dissemination of antibodies and cytokines that affect distant organs.[3] Throughout history, there has been documentation of the connection between dentistry and medicine.

Oral health was far from a priority and perhaps highly dangerous in the past, when people had to survive infectious illness epidemics and had very little knowledge of health science.

MATERIALS AND METHODS:

The present study was carried out in Rama Medical College and Hospital, Mandhana, Kanpur. Consent for conducting the study was obtained from the concerned authority of the institution, after appraising them regarding the purpose and significance of the study. This cross-sectional survey was conducted among medical student to assess the awareness on periodontal disease and its bidirectional relationship with systemic disease. The study consisted of total 158 medical students' participants. A verbal consent was obtained from all the participants. The data was collected using a self-structured, pretested questionnaire. The questionnaire included the demographic details and 15 questions with multiple choice answers. The questions were framed to assess the awareness among study group regarding the importance of oral health in having good systemic health, on the cause and consequences of periodontal disease regarding the bidirectional relationship between periodontal disease and systemic diseases, about the attitude related to referral of their patient to periodontist or dentist and finally on their opinion on the inclusion of certain dental topics related to oral examination and diagnosis in the medical curriculum. The study participants were instructed not to discuss any answer with any of the study participants. The purpose of the study and all the terms used in the study were explained to participants and were ensured maintaining total confidentiality.

Statistical Analysis: The responses were complied, computed and statistically analyzed by descriptive statistical analysis and chi-square test. The results were expressed in terms of percentage.

RESULT:

Every participant responded to every question.

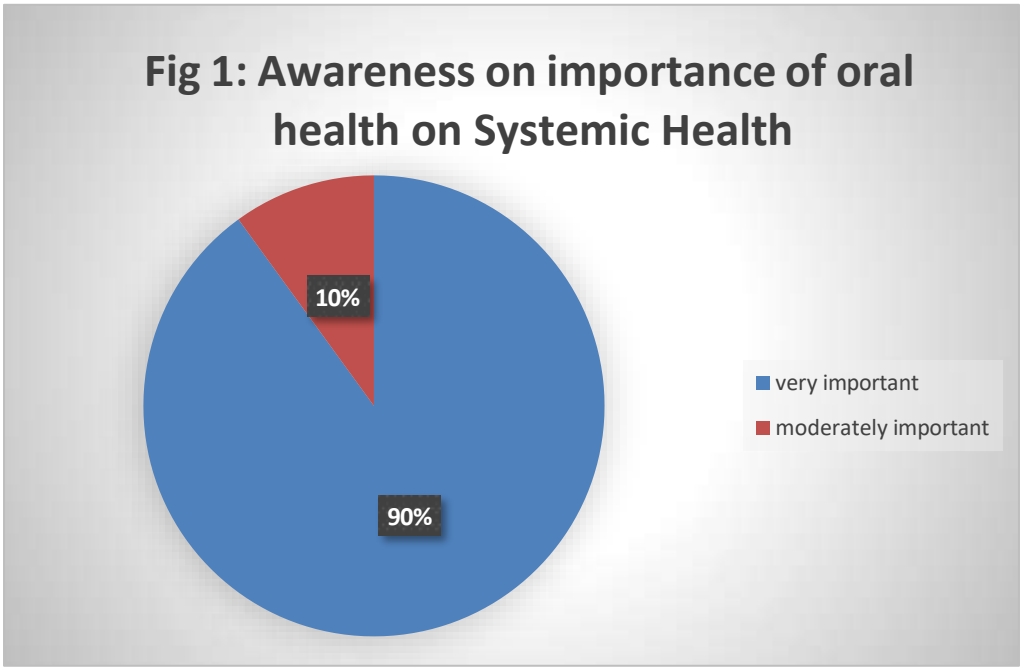
Regarding the significance of oral health for maintaining excellent systemic health, 90% of

participants rated it as very important, and 10% rated it as somewhat important. This finding is statistically significant [Figure 1].

Of the subjects, 77.6% knew what periodontal disease was, 16.4% said they were not aware of it, and 5.8% said they were not sure. Of those, 41.4% said they were aware of the etiology of periodontal disease, while 28.7% said they were not.

Just 11.7% of them indicated that they were aware of the negative effects of periodontal disea se, while 74.4% and 13.8% said they were not sure and no, respectively [Table 1].

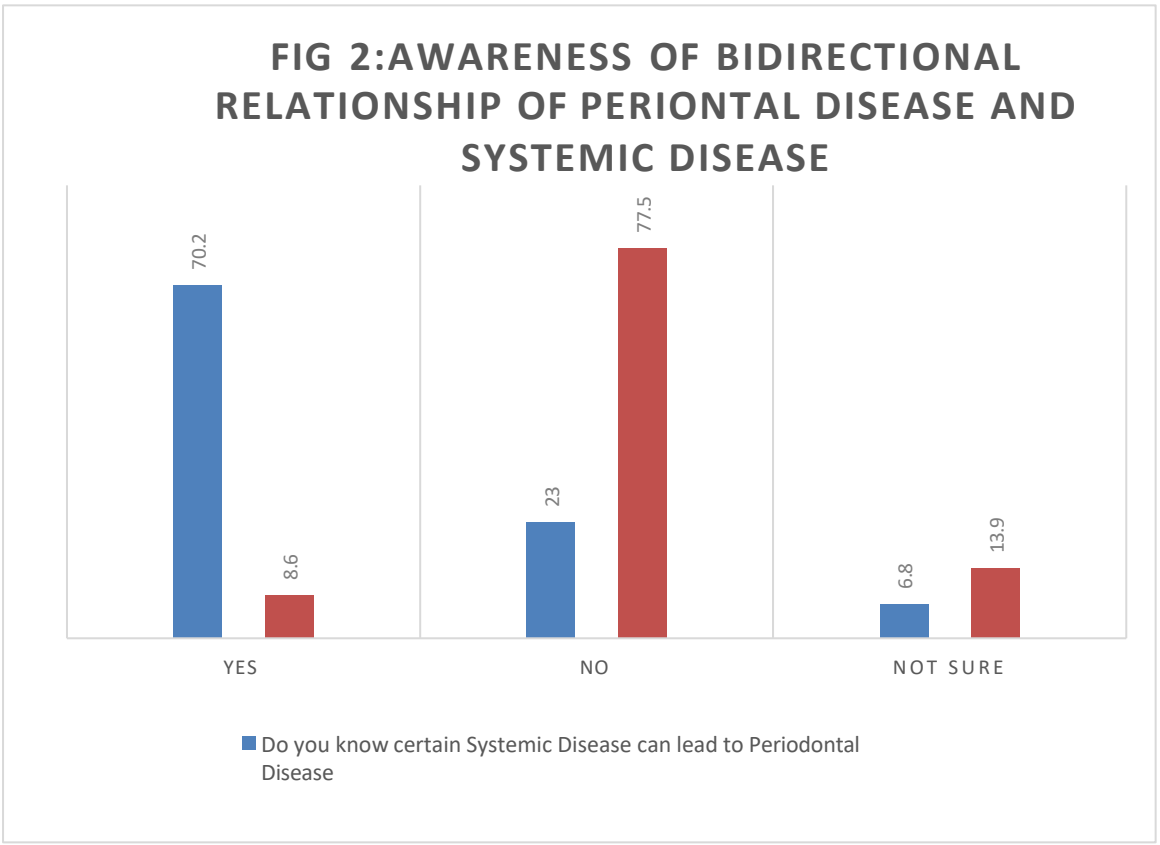
Concerning the reciprocal link between systemic disorders and periodontal disease 78% of participants knew that periodontal disease can result from certain systemic disorders. Of those surveyed, 17% said "no," and 5% said "not sure." When asked if they were aware that periodontal disease can cause certain systemic diseases, only 8.6% of survey participants said "yes," while 77.5% and 13.9% said "no" and "not sure," respectively [Figure 2]. Eighty-two percent of them never recommended their patients to a periodontist or dentist, whereas only 18 percent did so occasionally [Figure 3]. Just 1% and 4% of them stated that they disagreed or were not sure, while 94.6% of them completely agreed that oral examination and diagnosis should be covered in medical curriculum [Table 2].



Variable	Number	Percentage

Table 1: Awareness on periodontal disease, cause and consequences

Are you aware of the effects that periodontal disease can have?	Not sure	26	13.8
	Yes	22	11.7
	No	140	74.4
Are you aware of which microbiological deposits on teeth lead to periodontal disease?	Not sure	56	29.7%
	Yes	78	41.4%
	No	54	28.7%
Are you aware of what periodontal disease is?	Not sure	11	5.8%
	Yes	146	77.6%
	No	31	16.4%



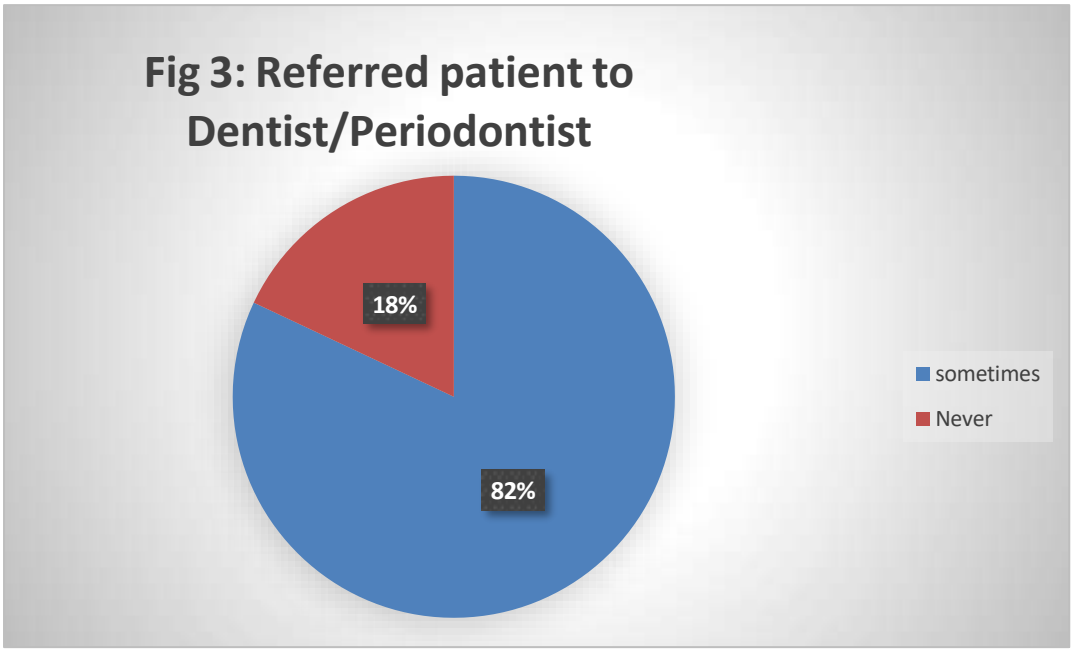


Table 2: Inclusion of topics on oral examination and diagnosis in medical curriculum

	Variable	Number	Percentage
	Not sure	8	4.2%
	Yes	178	94.6%
	No	2	1.06%

DISCUSSION:

According to the 1948 constitution of the World Health Organization (WHO), health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Since there is a wealth of literature on the reciprocal relationship between periodontal disease and systemic diseases, the present study was founded on the idea that doctors are a major group of primary health care providers and that their knowledge of the impact of periodontal disease on systemic health is crucial. This means that many systemic diseases were also thought to be risk factors for periodontal disease, and that periodontal disease may be one of the risk factors for many systemic diseases.[9] In our study 90% of the study participants were reported that it is very important to have a good oral health to have a good systemic health. In a previous study about 94% of medical and 80% of ayurveda students were aware that bad oral hygiene can cause adverse effects on general health, our finding on the awareness of the periodontal disease in the study population was

found to be 77%. In another study 80% of the study group were aware of the fact that plaque is the cause for periodontal disease.[11]Only 8.6% our study subjects were aware of the influence of periodontal disease on systemic diseases. In a similar study 11% of the participants were aware on the systemic effects of periodontal disease among medical interns.[5] As periodontal disease is quite widespread in India, it is critical to identify the condition early on in order to reduce the morbidity and mortality that are linked to it. The general people can benefit from the knowledge that medical healthcare professionals can supply. In addition to emergency care, doctors with training in oral health will be able to offer thorough counseling on the causes of dental diseases, prevention strategies, treatment options, and other health-related matters.

CONCLUSION:

The medical students understood that maintaining good dental health is crucial to achieving overall wellness. They lacked proper training in oral examination and diagnosis of periodontal and oral disorders, and they were not fully aware of the reciprocal association between systemic diseases and periodontal disease. It is now required to further integrate dental and medical research by incorporating oral examination, diagnostics, and periodontal medicine into medical curriculum in order to offer the general public comprehensive health care.

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