

# Dentists Knowledge about Association of Systemic Health with Periodontal Disease

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## ABSTRACT

**Purpose:** This study designed to evaluate the necessity for interdisciplinary dental and medical education by assessing clinicians' awareness of the relation between systemic health and periodontal disease.

**Study design:** A Cross-sectional and Descriptive study.

**Place and Duration:** In the Dental department of Hamdard University Dental Hospital, Karachi for six-months duration from July 2021 to December 2021.

**Methods:** A sample of 200 dentists and physicians was designated using convenient technique of sampling. A self-validated and pre-validated questionnaire consisting of questions about the knowledge of the relationship between systemic health and periodontal disease among dentist was used. Data was analyzed using SPSS 24.0.

**Results:** While 184 out of 200 dentists agreed that there was a link between periodontal disease and systemic health, 16 disagreed. Most (194) participants were aware of the periodontal disease and its associated signs and symptoms, and (6) were unaware of these symptoms. While most dentists (172) considered bleeding from the gingiva to be the major symptom clinically of periodontal disease, 102 dentists reported gingival pain as the primary symptom. In addition, most dentists (185) have stated that they have awareness about the relation between periodontal disease and diabetes, while 172 dentists have stated that cardiovascular disease and obesity are associated with periodontal disease

**Conclusion:** The information on the association between systemic health with periodontal disease among practitioners was satisfactory.

**Keywords:** Diabetes, cardiovascular diseases, obesity, gingival bleeding, systemic health and periodontal disease

## INTRODUCTION

Periodontal disease (PD) is supposed to be a multifaceted disease of multifactorial source. It is undoubtedly originated by microbes, mainly gram-negative, and is considered by the destruction of tissues of periodontal origin, including the appendages of alveolar bone and connective tissue<sup>1-2</sup>. In spite of its bacterial aetiology, it is the host's inflammatory response and other predisposing and modifying factors that determine the clinical picture of many different forms of periodontal disease<sup>3-4</sup>. In particular, progression of disease seems to be controlled by individual environmental and genetic factors<sup>5</sup>. It is proposed that periodontitis in chronic form may upsurge the systemic load of bacterial pathogens, bacterial antigens, inflammatory cytokines and endotoxins which initiate the inflammatory response<sup>6</sup>. The potential for oral health to affect systemic healthiness was suggested once in 1891 by Walter Miller. Then Offenbacher in 1996 coined the term "periodontal medicine" to indicate the association between systemic health periodontal disease<sup>7</sup>. Current evidence-grounded research has shown that PDs are cardiovascular diseases risk factors such as myocardial infarction and angina, cerebrovascular diseases such as coronary artery disease, atherosclerosis, stroke, diabetes, pre-eclampsia, low birth weight and many other systemic diseases<sup>8-9</sup>. Whether these relationships are causal, however, remains to be determined in further research. A similar study was conducted using self-filled questionnaires by dentists working in various public and private hospitals in various provinces of Turkey, and it was instituting that 57.1% of doctors who referred their cases to periodontists at universities for various explanations were sick<sup>10-11</sup>. The communal referral symptom was bleeding from the gingiva (43.8%), and family doctors made these referrals more often than doctors in other fields of medicine<sup>12</sup>. Another study in Chennai, India found that 82% of dentists knew PD could be the diabetes mellitus risk factor, and on the other hand, only 41% of dentists knew that PD could be a diabetes mellitus risk factor. Periodontitis can cause stroke. Therefore, it is important to use a multidisciplinary approach in the treatment of this disease, with the cooperation of doctors and dentists (general practitioners or specialists)<sup>13</sup>. The WHO stated that oral diseases, counting PD,

are an important part of a person's overall health. Therefore, dentists should know and use this information as it may influence the progression of systemic diseases and accurately describe its prognosis and treatment<sup>14-15</sup>. There are no available facts on dentists' information of periodontal disease and its relationship to systemic disease in Pakistan.

This study designed to evaluate the necessity for interdisciplinary dental and medical education by assessing clinicians' awareness of the relation between systemic health and periodontal disease.

## METHODOLOGY

This Cross-sectional and Descriptive study was held in the Dental department of Hamdard University Dental Hospital, Karachi for six-months duration from July 2021 to December 2021 after Ethics Review Committee approval. A total of 375 people were selected using the appropriate sampling technique. A sample of 200 dentists and physicians was designated using convenient technique of sampling. A self-validated and pre-validated questionnaire consisting of questions about the knowledge of the relationship between systemic health and periodontal disease among dentist was used. All dentists and physicians including consultants, post-graduate residents of the hospital answer the related questions. The feedback form was circulated to participants in paper form. All graduate and undergraduate students who rejected to contribute in the study were not included in the study. The data was analyzed using SPSS 24.0. A descriptive analysis was accomplished to determine the percentages and frequencies. Data are accessible in descriptive form and in tables.

## RESULTS

The doctor's demographic data participating in the study are presented in Table 1. 130 (61.3%) of the cases are men and 70 (38.7%) are women. The distribution with reference to age is <25 years = 36 (18%), 158 (79.0%) were 25-45 years of age and 6 (3%) were over 40 years. 60.5% of these doctors had > 10 years of practice, and the residual 39.5% had < 10 years of experience.

Table 1: Demographic Data Of The Doctors

	Characteristic	Number (%)
Age (years)	< 25	36 (18%)
	25-45	158 (79.0%)
	> 45	6 (3%)
Gender	Male	130 (65%)
	Female	70 (35%)
Years in Practice	< 10	79 (39.5%)
	>10	121 (60.5%)

Most (194) participants were aware of the periodontal disease and its associated signs and symptoms, and (6) were unaware of these symptoms. While most dentists (172) considered bleeding from the gingiva to be the major symptom clinically of periodontal disease, 102 dentists reported gingival pain as the primary symptom. In addition, most dentists (185) have stated that they have awareness about the relation between periodontal disease and diabetes, while 172 dentists have stated that cardiovascular disease and obesity are associated with periodontal disease (Table 2).

Table 2: Doctors Knowledge About Systemic Health And Periodontal Disease

Questions	Responses (%)
Referred Patient to a Dentist?	
Yes	154 (77%)
No	46 (23%)
Most Common Cause for Referral? Occurrence of Intraoral Lesion	60 (30.0%)
Malodour	41 (20.5%)
Gingival Bleeding	172 (86.0%)
Oral Findings of Systemic Disease	14 (7%)
Information of Association between Systemic Disease and Periodontal Disease	29 (14.5%)
Before any Medical Intervention to Minimalize Oral Microbial Burden	10 (5%)
Have Knowledge of the Periodontal Disease Symptoms?	
Yes	194 (97%)
No	6 (3%)
Any Association between Systemic Health and Periodontal Disease?	
Yes	184 (92%)
No	16 (8%)

## DISCUSSION

A possible reciprocal association between systemic health (SH) and periodontal disease (PD) has already been recognised in contemporary research. Understanding this relationship is essential for the appropriate treatment and diagnosis of both systemic and periodontal diseases. Some clinical assessments show that clinicians are less attentive in the association between SH and PD than periodontists<sup>17</sup>. Most (relatively fewer) studies examining dentists' understanding of the connection between SH and PD have engrossed on the connection between a particular specialty and a specific systemic disease. This study varies from the previous ones in those different specialties as well as different systemic diseases were discussed among the participating dentists<sup>18-19</sup>. In this study, 97% of dentists said they were aware of the periodontal disease signs and symptoms. In other comparable researches, it varies from 95% to 97%<sup>20</sup>. This slight difference may be because of the use of dissimilar question types and probable responses (yes / no vs true / false) in different surveys. Participants' knowledge of symptoms of PD was evaluated with a

precise question about primary symptoms of PD<sup>21</sup>. Additional probable cause for this deceptive discrepancy is that the two researches were directed in the Brazil and Saudi Arabia and can be accredited to an alteration in medical programs in undergraduate studies<sup>22</sup>. Few studies have assessed clinicians' awareness of the association between systemic health (SH) and periodontal disease (PD). In this context, respiratory disease, kidney disease, coronary heart disease, diabetes and pregnancy have been studied. In this research, 92% of dentists replied that there was a possible link between SH and PD<sup>23-24</sup>. The results of the existing research by Quijano et al, most participants denied any link between PD and SH. However, the studied populations were different, nearly the whole study inhabitants entailed of apprentices, and in the response to this question there was a stratification depending on the level of knowledge. On the other hand, no internal medicine dentists were enrolled in the study, only consultants and senior dentists. So, the change between our Quijano et al results and our study results may be from differences in the level of experience and education of the studied populace<sup>25</sup>.

Our conclusions emphasise the necessity to develop partnerships between dentists and physicians to advance the patients outcomes with various PDs and systemic conditions. Therefore, to attain this purpose, there is a great demand for a program that teaches the relationship between SH and PD at both undergraduate and postgraduate levels. Especially in the case of inflammatory diseases or systemic conditions, clinicians should not ignore this coexistence of SH and PD<sup>22</sup>. In this mode, these patients can have improved prognosis and treatment outcomes through dental consultation and multidisciplinary procedures. In comparison to other literature studies, the strengths of this study were the comparatively broad inclusion of dentists of numerous specialties and the relationship analysis between several different systemic conditions and periodontal disease (PD) rather than one specific systemic ailment. Though, the bias may be due to clinicians' responses to the self-reported questionnaire, which was a limitation in our study<sup>25</sup>. Attempts were made to broaden the scope of the survey and to prioritize questions to minimize this bias. Additional this study limitation is that the result could have been very dissimilar if it had been performed in rural Pakistan.

## CONCLUSION

The information on the association between systemic health with periodontal disease among practitioners was satisfactory.

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