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To Evaluate and Compare the Knowledge and Awareness of Periodontal Health Among Medical Practitioners: A Cross-Sectional Study

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Abstract

Background: Periodontal disease is a chronic inflammatory condition with well-established associations with systemic diseases such as diabetes mellitus, cardiovascular disorders, adverse pregnancy outcomes, and respiratory diseases. Medical practitioners often serve as the first point of contact for patients; therefore, their knowledge and awareness regarding periodontal health play a crucial role in early detection, referral, and interdisciplinary care.

Aim: To evaluate and contrast medical professionals' understanding of periodontal health and its systemic implications.

Materials and Methods: A cross-sectional survey using a questionnaire was carried out among medical professionals. A self-administered, structured survey made up of sections on demographic details, basic knowledge of periodontal disease, awareness of systemic associations, and referral practices was distributed. Data were analyzed using descriptive and inferential statistics.

Results: A total of **120 medical practitioners** participated in the study. While **78.3%** were aware that periodontal disease is an inflammatory condition, only **46.7%** recognized its association with adverse pregnancy outcomes. Regular referral to a dentist/periodontist was reported by **38.3%** of participants. Knowledge scores were significantly higher among practitioners with more than 10 years of clinical experience ($p < 0.05$).

Conclusion: Although general awareness regarding periodontal disease among medical practitioners was satisfactory, detailed knowledge about its systemic implications and appropriate referral practices was limited. Incorporation of oral health education in medical curricula and continuing medical education (CME) programs is recommended to enhance interdisciplinary patient care.

Keywords: Periodontal health, medical practitioners, Knowledge, Awareness, Cross-sectional study

Introduction

Periodontal disease encompasses a group of inflammatory conditions affecting the supporting structures of teeth, primarily caused by microbial plaque and modified by host response. It remains one of the most prevalent oral health problems worldwide and is a leading cause of tooth loss in adults. In recent decades, substantial evidence has highlighted the bidirectional relationship between periodontal disease and systemic conditions such as diabetes mellitus, cardiovascular diseases, adverse pregnancy outcomes, and respiratory infections. The concept of "oral-systemic health" underscores the need for collaboration between dental and medical professionals. Medical practitioners frequently encounter patients with chronic systemic diseases and are well positioned to identify early signs of periodontal disease and refer patients for appropriate dental care. However, lack of awareness or insufficient knowledge regarding periodontal health may hinder effective interdisciplinary management. Therefore, the present study was designed to compare and evaluate the knowledge and awareness of periodontal health among medical practitioners and to assess their attitudes and referral practices toward periodontal care.

Materials and Methods

Study Design

A descriptive cross-sectional questionnaire-based study.

Study Population

Medical practitioners (MBBS and above) actively involved in clinical practice.

Sample Size

The survey comprised 120 medical professionals in all.

Inclusion Criteria

- Registered medical practitioners
- Actively involved in patient care
- Willing to participate in the study

Exclusion Criteria

- Interns and undergraduate medical students
- Practitioners not involved in clinical practice

Study Tool

A pre-validated, structured questionnaire consisting of **20 questions** divided into four sections:

1. Demographic details
2. Knowledge regarding periodontal disease
3. Awareness of systemic associations
4. Attitude and referral practices

Data Collection

The questionnaire was distributed in printed/online form. Informed consent was obtained from all participants. Confidentiality of responses was maintained.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using **SPSS software (version XX)**. Descriptive statistics (frequency and percentage) were used to summarize the data. Inferential statistics were performed evaluating relationships between knowledge levels and demographic factors using the Chi-square test. Statistical significance was defined as a p-value of less than 0.05.

Results

The outcomes of the present cross-sectional study provide insight into the level of knowledge, awareness, and clinical practices related to periodontal health among medical practitioners.

Demographic Distribution of Participants

The study involved 120 medical professionals in all. Among them, **60% were male** and **40% were female**. With respect to clinical experience, **37.5%** of practitioners had more than 10 years of practice, followed by **34.2%** with 5–10 years and **28.3%** with less than 5 years of experience (Table 1). This distribution ensured representation across different levels of clinical exposure.

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	72	60.0
	Female	48	40.0
Years of Practice	<5 years	34	28.3
	5–10 years	41	34.2
	>10 years	45	37.5

Knowledge Regarding Periodontal Disease The majority of medical practitioners (**78.3%**) correctly identified periodontal disease as an inflammatory condition, and **71.7%** recognized dental plaque as the primary etiological factor. However, only **65%** associated bleeding gums as a clinical sign of periodontal disease. This indicates that while basic theoretical knowledge exists, recognition of clinical manifestations remains suboptimal.

Question on knowledge regarding periodontal disease	**Correct Response (%)**
Periodontal disease is an inflammatory condition	78.3
Dental plaque is the primary etiological factor	71.7
Bleeding gums indicate periodontal disease	65.0

Awareness of Systemic Association

Awareness regarding the relationship between periodontal disease and systemic conditions varied among participants. Approximately **69.2%** were aware of its association with diabetes mellitus, while awareness decreased for cardiovascular diseases (**54.2%**). Notably, less than half of the practitioners (**46.7%**) recognized the link between periodontal disease and adverse pregnancy outcomes, and only **32.5%** were aware of its association with respiratory diseases.

Questions on awareness of Systemic Condition	**Aware (%)**
Diabetes mellitus	69.2
Cardiovascular disease	54.2
Adverse pregnancy outcomes	46.7
Respiratory diseases	32.5

Attitude and Referral Practices

Although **82.5%** of practitioners agreed that oral health has an impact on systemic health, only **41.7%** reported routine examination of the oral cavity, and **38.3%** regularly referred patients to a dentist or periodontist. This discrepancy between awareness and clinical practice suggests insufficient integration of oral health assessment into routine medical care.

Questions on attitude and referral practices	Yes (%)	No (%)
Examine oral cavity routinely	41.7	58.3
Refer patients to dentist/periodontist	38.3	61.7
Believe oral health affects systemic health	82.5	17.5

Association Between Years of Practice and Knowledge Score

Medical practitioners with more than 10 years of clinical experience demonstrated significantly higher knowledge scores regarding periodontal health compared to those with fewer years of practice (**$p < 0.05$**).

Discussion

The present cross-sectional study was conducted to evaluate and compare the knowledge and awareness of periodontal health among medical practitioners, including MBBS graduates and postgraduate students, and to assess their attitudes and referral practices. The findings revealed a moderate level of overall knowledge, with postgraduate students demonstrating comparatively better awareness than MBBS graduates. However, noticeable gaps were observed in understanding the periodontal–systemic health relationship and its clinical implications.

Most participants demonstrated adequate basic knowledge regarding periodontal disease, particularly its inflammatory nature and association with dental plaque. Similar findings were reported by Al-Habashneh et al. (2008) and Gambhir et al. (2015), who observed that medical professionals generally possess satisfactory foundational knowledge of periodontal diseases. However, in the present study, limited recognition of bleeding gums as an early clinical sign of periodontal disease was observed, suggesting insufficient clinical exposure to oral health

conditions during undergraduate medical training. Comparable deficiencies were also reported by Pralhad et al. (2014), who found that many medical practitioners were unable to identify early periodontal symptoms.

Awareness regarding the association between periodontal disease and diabetes mellitus was relatively high among participants, particularly among postgraduate students. This finding is consistent with studies conducted by Saini et al. (2011) and Quijano and Shah (2011), which reported a relatively higher awareness among medical professionals regarding the bidirectional relationship between diabetes and periodontal disease. The increased awareness may be attributed to the extensive documentation of this relationship in medical literature and clinical practice.

In contrast, awareness regarding the association of periodontal disease with cardiovascular diseases and adverse pregnancy outcomes was comparatively lower. Similar observations were reported by Patil et al. (2017), who found that medical practitioners often have limited knowledge about the link between periodontal disease and systemic conditions other than diabetes. However, some studies, such as Al-Khalifa et al. (2016), reported better awareness among healthcare professionals regarding the periodontal–cardiovascular disease association, indicating variability in knowledge across different populations and settings.

Although a considerable proportion of participants acknowledged that oral health influences systemic health, routine oral cavity examination and referral practices were limited. This discrepancy between knowledge and practice has also been reported by Al-Habashneh et al. (2008) and Glick et al. (2012), who noted that positive attitudes toward oral health do not always translate into clinical practice among medical practitioners. Possible reasons for this gap include time constraints during patient consultations, lack of adequate training in oral examination, and absence of standardized referral protocols.

The study also demonstrated that practitioners with greater clinical experience showed higher knowledge scores, suggesting that continuous patient interaction and interdisciplinary exposure enhance awareness of periodontal health over time. Similar findings were reported by Baseer et al. (2012), who observed that clinical experience significantly improves awareness and referral practices among healthcare professionals.

Overall, the findings emphasize the need for integrating periodontal health education into undergraduate and postgraduate medical curricula and for promoting interdisciplinary collaboration between medical and dental professionals. Such integration can improve early detection of periodontal disease and facilitate timely referrals, thereby contributing to comprehensive patient care.

Conclusion

The present study concludes that medical practitioners possess a moderate level of knowledge and awareness regarding periodontal health. However, gaps exist in understanding the systemic associations of periodontal disease and in routine referral practices. Strengthening oral health education in medical training programs and promoting collaboration between medical and dental professionals can significantly improve holistic patient care.

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