

A Survey on the Awareness of Periodontal diseases and their Impact on Systemic Health among Ayurvedic Doctors

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Abstract

Background

Periodontitis is a chronic inflammatory disease of the periodontium, characterized by the progressive destruction of supporting periodontal structures. However, periodontal infection can enter into the systemic circulation and lead to systemic implications resulting in aggravation of the current systemic condition.

Aim

This study aims to evaluate the awareness of periodontal diseases and their correlation with systemic health in allied medical professionals.

Materials and Methods

68 subjects were taken for the current study. Data was collected based on a specially designed Google proforma that included questions used to assess the knowledge about periodontal diseases and their systemic implications.

Results

Out of the total 68 participants: 100% of the respondents knew the existence of a correlation between systemic and oral health; Following is the percentage of the respondents who were aware of the relationship between periodontal diseases and cardiovascular diseases (45.6%), diabetes mellitus (70.6%), hormonal imbalance (55.9%), and preterm labor and low birth-weight infants (38.2%), thus depicting a good level of awareness regarding the systemic effects of periodontal disease.

Conclusion

Knowledge about periodontal disease and its association with systemic conditions is satisfactory among Ayurveda health professionals. Allied healthcare practitioners need to be aware of the systemic implications of periodontal diseases and apply the knowledge in their practice. They should conduct oral health examinations for their patients and make referrals to dentists when necessary.

Keywords: Periodontal medicine, Ayurvedic doctors, Allied medical professionals, Systemic implications of periodontal diseases.

Introduction:

Periodontal conditions encompass a set of inflammatory states affecting the supporting structures of teeth due to bacterial activity. Periodontitis is defined as an inflammatory ailment of the supporting tooth structures resulting from distinct microorganisms or clusters thereof. This leads to progressive deterioration of the ligament securing the tooth and the bony socket, resulting in the formation of pockets within the gingiva, along with receding gingiva, or both.⁽¹⁾

The term periodontal medicine denotes the examination of how inflammation in the gingiva might influence overall health beyond the mouth.⁽²⁾ Recent findings propose a

significant connection between periodontal infection and an increased susceptibility to certain systemic ailments, potentially modifying the course of existing systemic conditions.⁽³⁾ Studies have pointed out that individuals dealing with periodontitis may also face cardiovascular issues. It has been concluded that there exists a modest association between periodontitis and arterial diseases. Patients and healthcare practitioners should be aware that taking steps to address periodontal concerns could potentially impede the onset or progression of atherosclerosis-linked diseases.^(4,5)

Inflammation is regarded as the bridge connecting periodontitis to cerebral conditions like Alzheimer's disease.

A notable feature of Alzheimer's disease is the presence of activated glial cells producing substantial amounts of inflammatory cytokines.⁽⁶⁾ Research has identified elevated levels of pro-inflammatory cytokines in older Alzheimer's patients with concurrent periodontitis.⁽⁷⁾ Insufficient oral hygiene contributes to chronic periodontitis and might indirectly elevate the risk of Alzheimer's disease. Conversely, Alzheimer's patients often struggle with maintaining proper oral care or seeking professional dental treatment, which in turn heightens the risk of periodontitis.⁽⁸⁾

Initial investigations have outlined the existence of oral ailments among individuals with respiratory conditions. Microbes from the mouth can infiltrate the lower respiratory tract through inhalation, potentially leading to pneumonia. The accumulation of dental plaque might serve as a reservoir for pathogens related to the respiratory system.⁽⁹⁾ Smoking, known to have immunosuppressive effects, can compromise the body's natural defenses by reducing the mobility, chemotaxis, and phagocytosis capabilities of white blood cells (polymorphonuclear leukocytes or PMN-L) present in the bloodstream.⁽¹⁰⁾ This chain reaction set in motion by smoking includes a weakened immune response, colonization of bacteria beneath the gingival line, and damage to the connective tissue cells. Collectively, these factors contribute to an increased manifestation of periodontal diseases and a diminished response of the gingival tissue during treatment.⁽⁹⁾

Significantly, there exists a reciprocal association between diabetes mellitus and periodontitis, each influencing the other. Persistent infection from periodontitis can exacerbate and disrupt the body's inflammatory reactions, potentially leading to poor control over blood sugar levels and heightened insulin demands.⁽¹¹⁾

In both males and females, intrinsic sex steroid hormones play crucial roles in regulating the responses of gingival tissues. These hormones might modulate the way periodontal tissues react to bacterial plaque, thereby potentially affecting the development of periodontal diseases directly.⁽¹²⁾

Alterations in hormonal balance in females are linked to changes in periodontal well-being. Gingival inflammation intensifies during puberty, pregnancy, and postmenopausal stages. Instances suggest that a single hormone, when encountered at specific life phases, triggers an amplified inflammatory response to dental plaque.⁽¹³⁾ Pregnant individuals grappling with periodontitis might confront an elevated risk of premature labor and deliveries. Additionally, a systematic review in 2003 indicated that procedures like scaling and root planing could substantially reduce the likelihood of preterm births among women.^(4, 14)

Given the established interconnection between systemic health and oral well-being, comprehensive familiarity with

dental knowledge is imperative for all healthcare practitioners. This study assesses the comprehension of dental aspects among allied medical professionals and its connection with overall systemic health.

Method

A cross-sectional descriptive study based on a questionnaire survey was carried out among doctors at CSMSS Ayurveda Mahavidyalaya and Rugnalaya, Kanchanwadi, Aurangabad, in order to assess the extent of awareness among Ayurvedic doctors regarding the systemic impacts of periodontal disease. Ethical clearance was obtained from the Institutional Ethics Committee. Written consent was obtained from each participant, clarifying the study's purpose and the terms employed.

The study included all of the faculty who were present and willing to participate. On Google Forms, a self-administered, closed-ended questionnaire with 18 questions was meticulously designed and circulated around the campus. The results were recorded. The questionnaires covered a wide range of periodontal disease-related topics, including basic knowledge regarding periodontal diseases, etiology, systemic effects, dental hygiene practices, different treatment modalities, an understanding of periodontal medicine, and dental referrals. Upon collection, the data underwent compilation and subsequent interpretation. The findings were then expressed in terms of proportions and percentages.

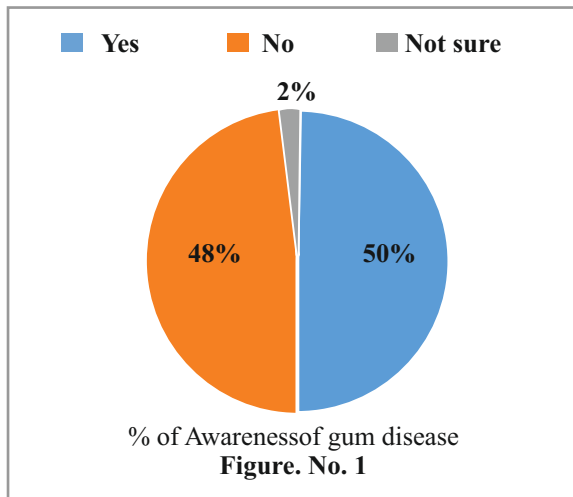
Results

Preliminary results from the survey suggest varying levels of awareness among Ayurvedic doctors regarding periodontal medicine. While some respondents demonstrated a good understanding of the interplay between oral health and systemic well-being, others displayed limited knowledge. Factors such as years of practice, exposure to interdisciplinary medical seminars, and personal interest in modern medical advancements appeared to influence participants' awareness levels. Additionally, perceived barriers to incorporating periodontal medicine into Ayurvedic practice included the lack of formal training in dentistry.

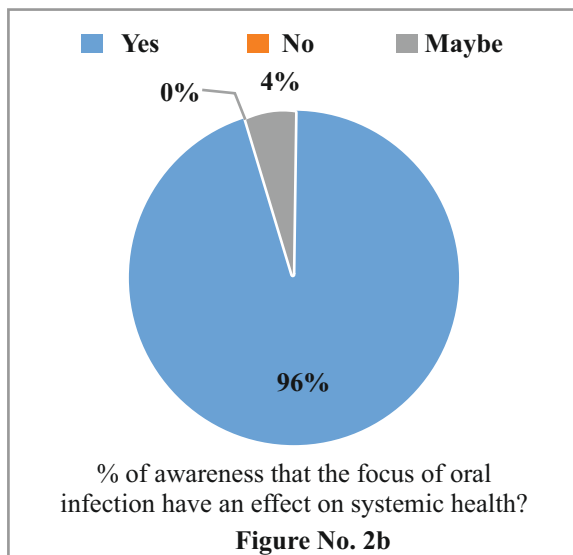
A total of 68 Ayurvedic doctors from the institution were included in the study. The Ayurveda doctors who were contacted for the purpose of the study participated in the study. All participants answered all questions.

All of the respondents were aware of the relationship between systemic and dental diseases and that it is a two-way process.

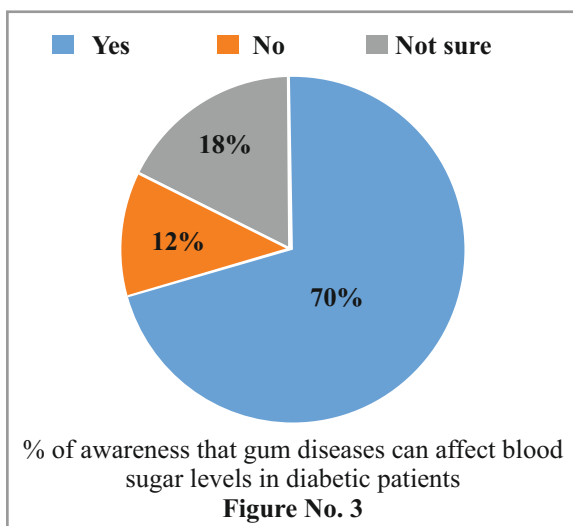
Only 50% of the participants were aware of gingivitis and periodontitis as gum diseases. Surprisingly, 48.5% were not sure about them. 1.5% of respondents were unaware of such entities. Figure. No. 1



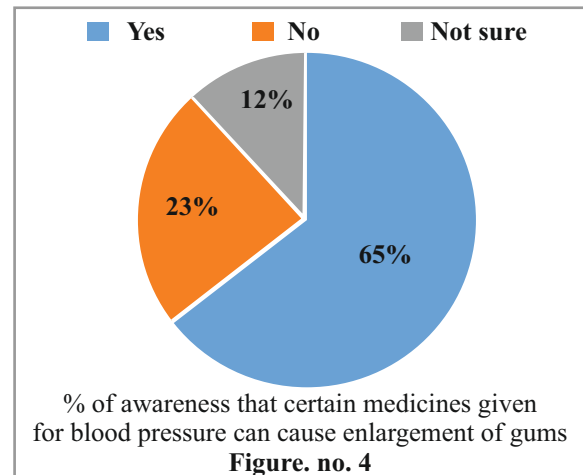
A staggering 95.6% of those surveyed demonstrated recognition of the impact oral infections can wield on overall systemic well-being. Figure No. 2a, 2b



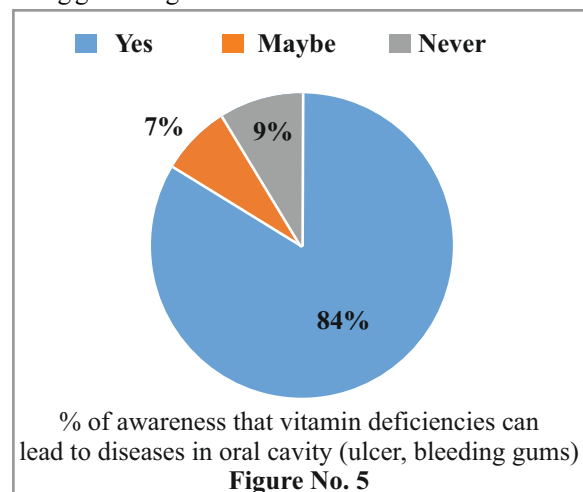
An impressive 70.6% of the participants exhibited a keen awareness of the connection between blood glucose levels in diabetic patients and the occurrence of gum diseases. Figure No. 3



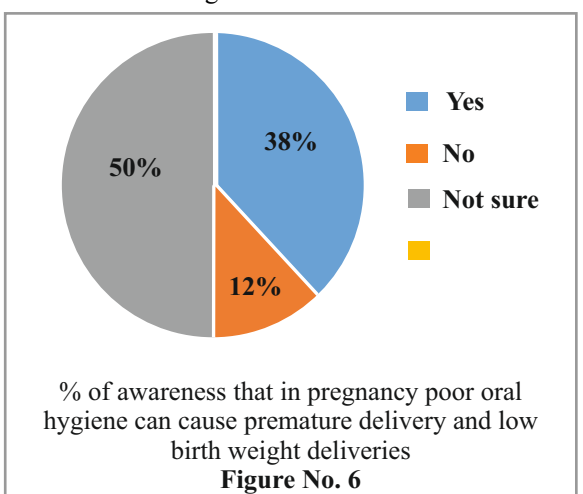
Among the medical professionals, precisely 64.7% were well-informed about the potential of certain blood pressure medications to induce gum enlargement. Figure No. 4



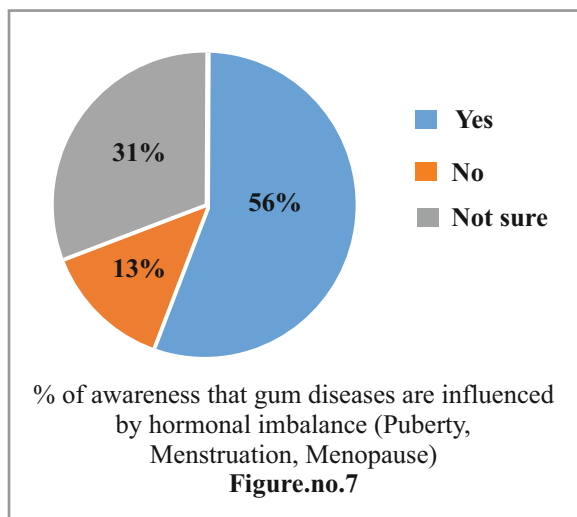
Furthermore, an overwhelming 83.8% of the respondents displayed understanding in regard to the role of vitamin deficiencies in giving rise to conditions like oral ulcers and bleeding gums. Figure. No 5.



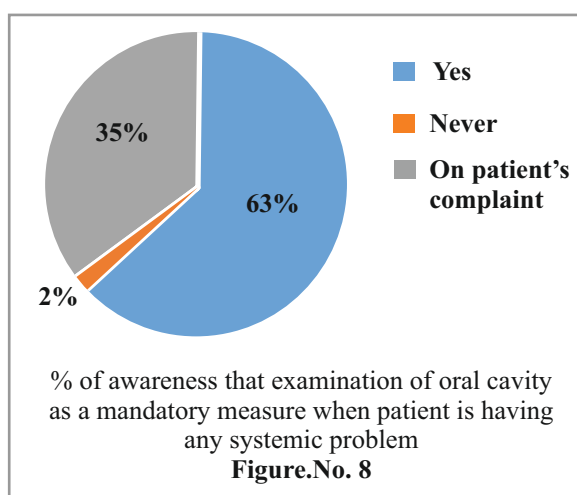
In the realm of pregnancy, a noteworthy 38.2% of the participants possessed the knowledge that inadequate oral hygiene can be a catalyst for premature deliveries and low birth weight, while an equal 50% remained unaware of this crucial correlation. Figure No. 6



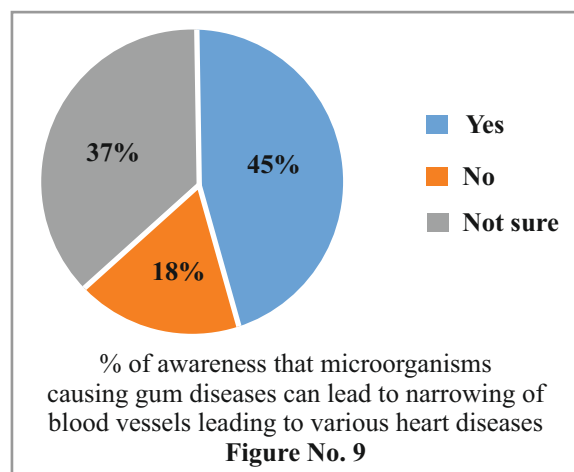
Delving into the sphere of hormonal influences on oral health, a substantial 55.9% of the participants acknowledged the role of hormonal imbalances (pertaining to puberty, menstruation, and menopause) in the onset and progression of gum diseases. Figure No. 7



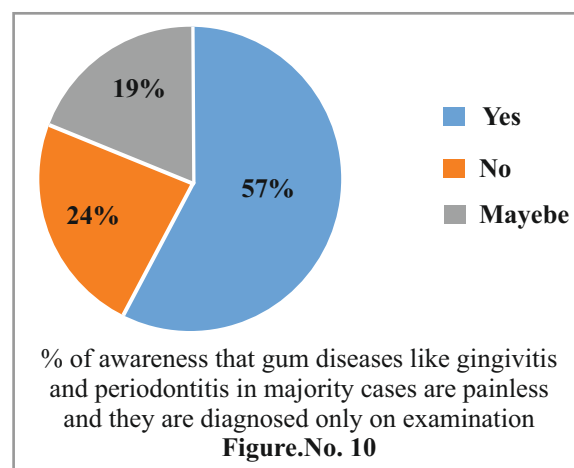
When it comes to clinical practice, an encouraging 63.2% of the respondents embraced the practice of examining the oral cavity as a mandatory diagnostic procedure for patients presenting with systemic issues. In contrast, 35.3% limited their oral examinations solely to the patient's complaints, revealing a diverse approach in medical practice. Figure No. 8



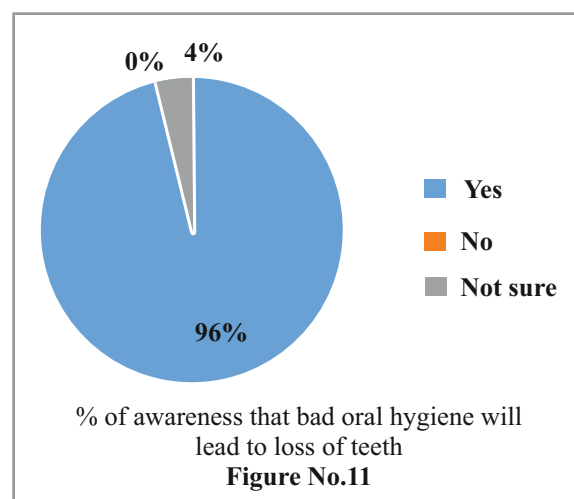
Highlighting the intricate connection between gum diseases and cardiovascular health, an informed 45.6% of the medical practitioners recognized that microorganisms contributing to gum diseases can precipitate the narrowing of blood vessels, potentially leading to a spectrum of heart-related conditions. However, a more tentative 36.8% held reservations about this association Figure No.9



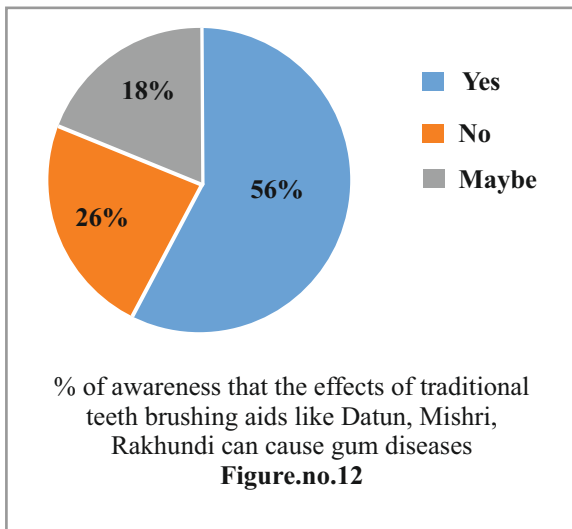
Shifting focus to diagnosis, a notable 57.4% of the respondents comprehended that gum ailments such as gingivitis and periodontitis often develop silently, devoid of noticeable pain, underscoring the criticality of thorough examinations. Contrarily, 23.5% were not privy to this fact, and 19.1% remained unsure. Figure.No. 10



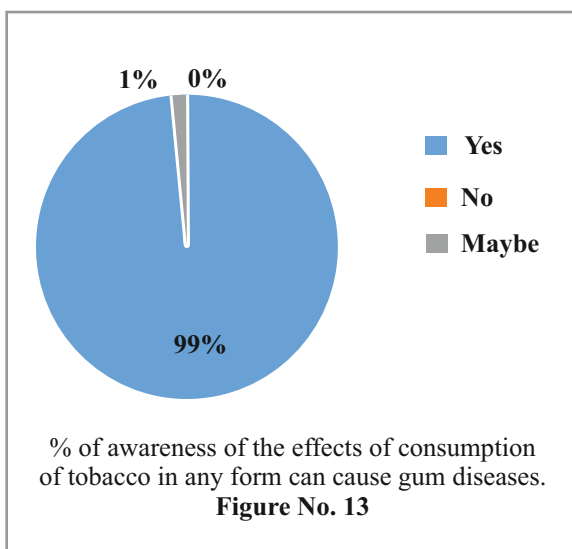
On the matter of tooth loss, an overwhelming 95.6% of the participants were cognizant of the dire consequences of poor oral hygiene, which can culminate in the loss of teeth, emphasizing the significance of maintaining oral health. Figure No. 11



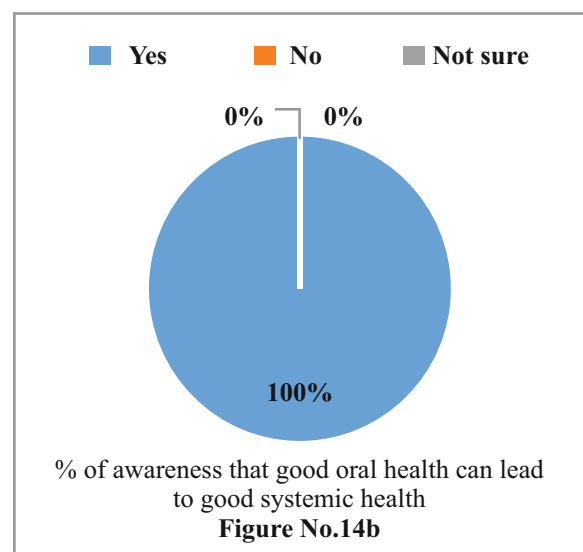
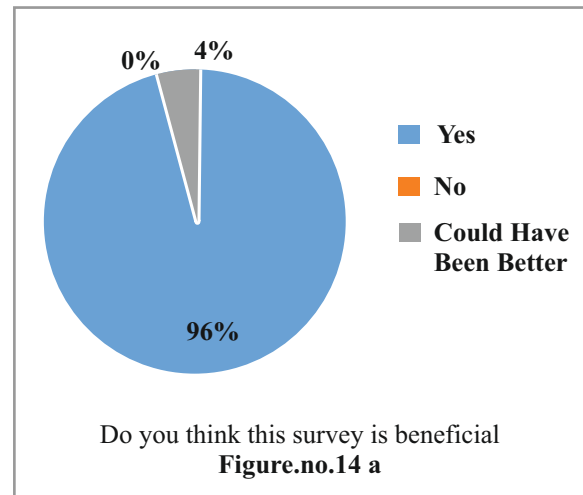
Exploring traditional oral care practices, 55.9% of the respondents demonstrated familiarity with the potential drawbacks of utilizing age-old methods such as Datun, Mishri, and Rakhundi, which can inadvertently contribute to the development of gum diseases. Figure No. 12



Lastly, the pernicious effects of tobacco consumption on oral health were widely recognized, as an impressive 97.1% of the participants acknowledged the connection between various forms of tobacco usage and the onset of gum diseases. Figure. No. 13



Lastly the medicos were asked for the feedback of the above survey for which they responded with a positive 96% response, While some responded with an opinion of some scope of improvement, Also there were convinced good oral hygiene will have good systemic Figure 14a, 14b



Discussion:

Periodontitis, classified under the umbrella of periodontal diseases, is a chronic inflammatory condition affecting the supporting structures of teeth. This condition manifests as the gradual destruction of the periodontal ligament, alveolar bone, and connective tissues that anchor teeth in their rightful positions. It is more than just a dental concern—it's a complex interplay between microbial assault, genetic susceptibility, and systemic factors that jeopardize both oral health and overall well-being.⁽¹⁵⁾

The general populace largely lacks awareness regarding the interconnection between oral hygiene and systemic conditions such as cardiovascular disease and diabetes. As a result, oral hygiene has often been disregarded and overlooked as a societal concern. The study underscores the importance of enhancing awareness regarding periodontal medicine among Ayurvedic doctors. By promoting interdisciplinary collaboration and education, the integration of periodontal medicine principles into Ayurvedic practice could contribute to improved patient care and overall health outcomes. This investigation delved into the awareness status

within a segment of society presumed to possess greater knowledge and consciousness compared to the general population. The survey was initiated with the primary objective of assessing the levels of oral health awareness among Ayurvedic doctors in the Aurangabad District.

An investigation conducted within the Dakshina Kannada District aimed to evaluate the level of oral health awareness and familiarity with periodontal diseases among students enrolled in medical, Ayurveda, and Engineering Colleges. The results of the study indicated a significant deficiency in comprehension regarding oral hygiene and a restricted acquaintance with oral care practices, even among those pursuing health-related professions and engineering disciplines.⁽¹⁶⁾

R Dhulipalla et al conducted a study where they found out that only 39.3% of the total participants were aware that periodontal disease is a risk factor for preterm low-birth-weight infants. This is comparable to our study where 38.2% of the respondents were aware of this information.⁽¹⁷⁾

In a distinct research endeavor, R Dhulipalla et al embarked on a study that revealed: a mere 39.3% of the total participants displayed an awareness of the correlation between periodontal disease and the heightened risk of preterm, low-birth-weight infants. Strikingly similar to our own investigation, where 38.2% of the respondents exhibited familiarity with this vital insight.⁽¹⁷⁾ Moreover, a compelling statistic surfaced—88.6% of the participants demonstrated cognizance of the intricate interplay between periodontal health and systemic well-being. This remarkable figure, highlighted repeatedly, underscores the widespread recognition of the association between periodontal and systemic diseases. Remarkably, Narendran et al delved into the perceptions of medical professionals through a questionnaire-based study, unearthing a matching proportion of awareness—88.6%—regarding this profound connection.⁽¹⁸⁾

Conclusion: Diverse levels of awareness exist among practitioners of Ayurvedic medicine concerning the broader impacts of periodontal ailments. Thus, it is suggested that greater emphasis be laid upon the amalgamated instruction of Ayurvedic practices and dental sciences. This approach aims to nurture comprehensive experts capable of serving humanity effectively. Additionally, expanding the dental sciences' footprint within the Ayurvedic curriculum holds the potential to augment physicians' contributions to oral well-being.

The revelations stemming from this investigation underscore the necessity for expanded enlightenment efforts and awareness initiatives targeting Ayurvedic practitioners. Fostering synergy between Ayurvedic doctors and

contemporary dental professionals could pave the way for a well-rounded healthcare system.

To heighten awareness and facilitate seamless integration, it is recommended to institute educational endeavors tailored for Ayurvedic practitioners. Such endeavors encompass workshops, seminars, and online modules designed to instill a foundational grasp of periodontal medicine principles. By bridging knowledge disparities and addressing pertinent concerns, a conducive environment for interdisciplinary collaboration can flourish, culminating in benefits for both patients and healthcare cohorts.

Allied health practitioners should thoroughly assess the oral health of their patients and subsequently make referrals to dentists when necessary. This proactive approach ensures comprehensive healthcare management and promotes timely intervention for any dental concerns.

It's crucial to understand that healthcare practitioners who possess an awareness of the systemic repercussions of periodontal diseases are the ones capable of making referrals to dentists for their patients.

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