Scholars Journal of Dental Sciences
Abbreviated Key Title: Sch J Dent Sci
ISSN 2394-4951 (Print) | ISSN 2394-496X (Online)
Journal homepage: https://saspublishers.com/journal/sjds/home

OPEN ACCESS

To Assess Awareness of the Dakshina Kannada Population towards the Oral-Systemic Disease Link

Dr. Arvind Nagaraj[1], Dr. Mamatha Shetty[2*], Dr. Rakshith Hegde[3]

[1]Post Graduate Student, Department of Periodontics A. B. Shetty Memorial Institute of Dental Sciences, Mangalore, India
[2]Reader, Department of Periodontics A. B. Shetty Memorial Institute of Dental Sciences, Mangalore, India
[3]Professor, Department of Prosthodontics A. B. Shetty Memorial Institute of Dental Sciences, Mangalore, India

***Corresponding author:** Dr. Mamatha Shetty
| **Received:** 05.02.2019 | **Accepted:** 15.02.2019 | **Published:** 28.02.2019
DOI: 10.36347/sjds.2019.v06i02.005

Abstract **Original Research Article**

Introduction The mouth is regarded as a mirror and a gateway to systemic health. Periodontal disease is one of the most prevalent diseases affecting human dentition. There is a lack of population based data on the attitude of individuals towards periodontal therapy in the Dakshina Kannada region. It is essential that the dental practitioners help the patients understand periodontal disease and the oral-systemic link. ***AIM:*** The aim of this study was to explore and gain an understanding of patients' views on their periodontal status, their attitudes towards periodontal treatment, as well as their knowledge of the oral-systemic disease link with the help of a structured questionnaire. ***Methodology:*** A total of 300 patients that reported to the Department of Periodontics, A.B.Shetty Memorial Institute of Dental Sciences, Mangalore, were included in the study. The study was conducted by the means of a structured questionnaire. The first part dealt with basic information and oral hygiene practices. The second part consisted of questions that helped understand the attitude and understanding of the patients towards periodontal therapy and the oral-systemic disease link. ***Results and Conclusion:*** Only 12% of the study group was aware of the bi-directional association between oral health and systemic well-being. This showed us that the level of awareness in this regard is at a bare minimum. Hence, as dental healthcare professionals, it is our duty to not only provide healthcare but also increase the awareness and knowledge that people have about their oral hygiene status and the possible effects it may have on their overall well-being.

Keywords: Periodontal disease, Diabetes, Pre-term labour, Coronary Heart Disease, Bi-Directional.

INTRODUCTION

General health cannot be attained or maintained without oral health. The mouth is regarded as a mirror and the gateway to health. Integration is required between the dental practitioner and the patient; if good dental health is to be attained [1]. Periodontal disease is one of the most prevalent diseases affecting the human dentition and is one of the principle causes of tooth loss. Periodontal disease is predominantly a Gram-negative infection resulting in severe inflammation, with potential in vascular dissemination (via the sulcular epithelium) of microorganisms and their products such as lipopolysaccharides (LPS) throughout the body [2]. It is the most common oral infection in India, with a prevalence rate of 66.2% among individuals of age 15 years and about 89.2% among adults in the age group of 35-44 years. The potential impact of many systemic disorders on the periodontium is documented, though recent evidence suggests that periodontal infection may significantly enhance the risk for certain systemic diseases or alter the natural course of systemic conditions[3]. Conditions in which the influences of periodontal infections are documented include coronary heart disease, stroke, diabetes mellitus, and preterm labour and respiratory conditions such as Chronic Obstructive Pulmonary Disease (COPD) [4].

There is a lack of population-based data in the Dakshina Kannada region on the understanding of individuals towards the oral-systemic link; as well as their attitude towards periodontal therapy. Therefore, this survey was undertaken to better understand the level of knowledge and information about the association between oral health and systemic well-being.

AIM

The aim of this study was to explore and gain an understanding of patients' views on their periodontal status, their attitudes towards periodontal treatment, as

well as their knowledge of the oral-systemic disease link with the help of a structured questionnaire.

METHODOLOGY

The study included 300 patients aged 25-60 years reporting to the out-patient, Department of Periodontics from 15 January 2017 to 15 June 2017. The study was conducted by the means of a structured questionnaire. Ethical clearance was obtained from the University Ethics Committee. An informed consent was obtained from all participants. The purpose of the study and all the terms used in the study were explained to the respondents and were ensured maintaining total confidentiality. Each participant was given a self-administered, pre-tested, Multiple Choice Questions type questionnaire to solve on the spot. The questionnaire was divided into two parts. The first part consisted of questions related to age, sex, and demographic area along with the oral hygiene practices of the patients. The second part of the questionnaire consisted of questions that will help understand and evaluate the attitude and understanding of the patients towards periodontal therapy and the oral-systemic disease link.

RESULTS

A total of 300 patients agreed to participate and responded to the questionnaire. The approximate time required for a participant to fill out the questionnaire ranged from 15 to 20 minutes. Out of the 300, 124 (41.33%) were males and 176 (58.67%) were females.

In this study, out of 300, 203 patients were aged between 31 and 60 years (67.67%). 53 (17.67%) were between 18 and 30 years followed by 37 (12.33%) above the age of 60. The study sample included patients with different occupations and different educational qualification. 55% (165) of the study sample reported a monthly income of Rs.3000-5000/-.

Close to two-thirds (61.67%) of the study sample reported that they brushed their teeth once a day with the main reasons for taking up oral hygiene practices being prevention of dental caries (45.33%) followed by the fear of halitosis (37.33%). 85% of the study population reported that they were not aware of the availability of auxiliary aids and hence, had never used them. 54% (162) of the sample mentioned that they had received some form of periodontal therapy in their lives. A small percentage of the sample (11.33%) reported that they had turned down periodontal treatment in the past for reasons such as possible pain, fear of needles, instruments and/or other armamentarium, unsuccessful treatment results etc.

With regard to from where the study participants received their information on periodontal health, systemic health, periodontal treatment and their relationships, 45% reported that they received their information from their friends and family. This was followed by knowledge gained from their own experiences (34.67%) and that gained from the various aspects of media, i.e. from newspapers, magazines, the radio and the television (19.33%).

When the results of the final section of the questionnaire were evaluated, it was observed that 62.33% of the study sample was absolutely certain that there was no relationship between an individual's oral health and systemic well-being.

These results concluded that as oral healthcare professionals, it is our duty to not only provide healthcare but also increase the awareness and knowledge that people have about their oral hygiene status and the possible effects it may have on their overall well-being.

Tabulation of various observations drawn from the study.

The pie charts discuss and give us a better understanding of the awareness of the study population with regard to the oral-systemic link.

Table-1: Distribution of sample size according occupation of the population

Occupation	Number of Patients (%)
Unemployed	34 (11.33%)
Labourer	74 (24.67%)
Employed	36 (12%)
Business	59 (19.67%)
Housewife	76 (25.33%)
Student	21 (7%)

Table-2: Distribution of sample size according to oral hygiene measures performed by population

A. Frequency of Tooth Brushing	Number of Patients (%)
Zero	0 (0%)
One	185 (61.67%)
Two	115 (38.33%)
B. Use of Auxiliary Aids	Number of Patients (%)
Yes	19 (6.33%)
No	255 (85%)
Unaware	26 (8.67%)
C. Reason for Tooth Brushing	Number of Patients (%)
Prevention of Decay	136 (45.33%)
Prevention of Bad Breath	112 (37.33%)
Removal of Deposits	18 (6%)
Esthetics	21 (7%)
Pain Relief	13 (4.33%)
D. Reason for Not Brushing	Number of Patients (%)
Lack of Time	11 (3.67%)
Carelessness	15 (5%)
Tiredness	18 (0.67%)
Pain	45 (15%)
Cost	3 (3%)

Table-3: Distribution of sample size according to source of information of the population

Source of Information	Number of Patients (%)
Media	58 (19.33%)
Family/Friends	135 (45%)
Experience	104 (34.67%)
Other	3 (1%)

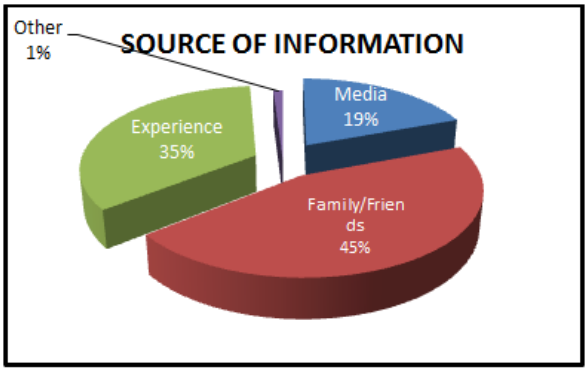

Fig-1

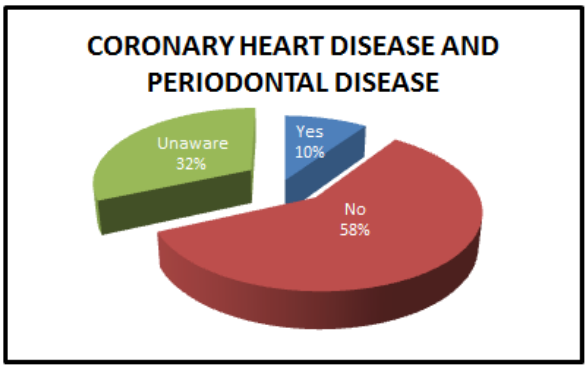

Fig-2

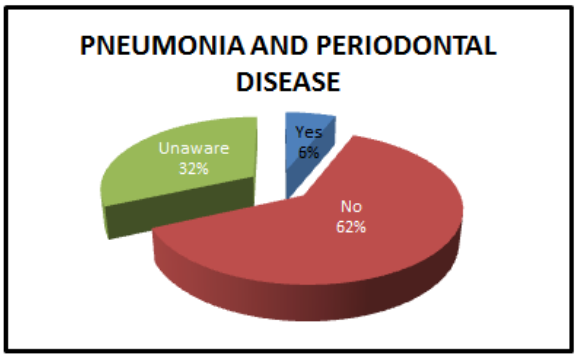

Fig-3

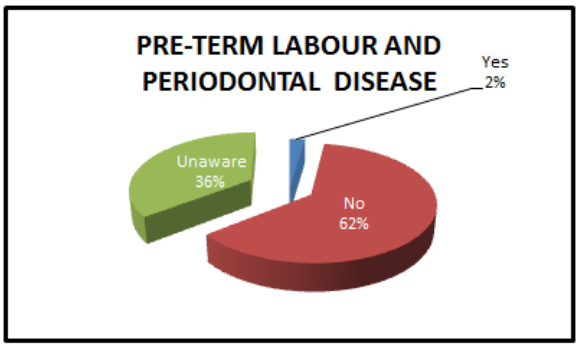

Fig-4

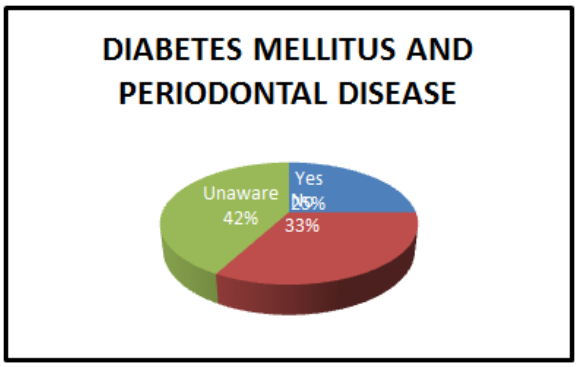

Fig-5

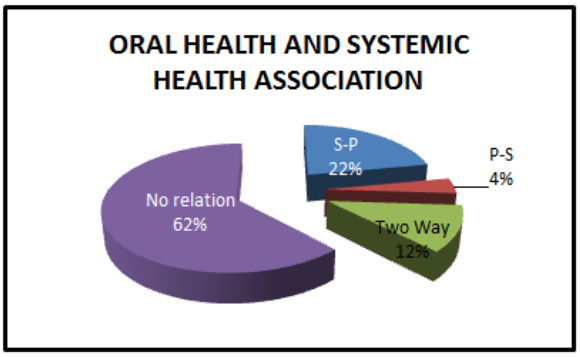

Fig-6

DISCUSSION

Periodontal disease is a complex infectious disease resulting from interplay of bacterial infections and host-response to bacterial challenges. It is estimated that more than 500 different bacterial species are capable of colonizing the mouth of an adult [5]. Systemic challenges with the potential vascular dissemination of microorganisms and their products

(via the sulcular epithelium) such as lipopolysaccharides (LPS) throughout the body induce a major vascular response [2].

Numerous studies have suggested evidence for a bidirectional adverse interrelationship between various systemic conditions and periodontal disease. The host-response may offer explanatory mechanism for the interaction between periodontal infection and a variety of systemic disorders like coronary heart disease, coronary heart disease related events such as angina, infarction and atherosclerosis, stroke, diabetes mellitus, preterm labour (low birth-weight infants), chronic obstructive pulmonary disease, and hospital-acquired pneumonia [4].

Although it may be desirable to use a complete instrument based on single or multiple health behavior models for a comprehensive assessment, clinicians often experience time constraints posed by active patient care. Therefore, a simple questionnaire was developed that could be completed quickly, yet provide information relevant to the planning of periodontal treatment.

Yamamoto *et al*. conducted a study that used a questionnaire for periodontitis screening of 250 people of age group 50-59 years males Japanese employees and suggested that the self-reported questions are useful for screening of periodontitis in this age group people [6].

Saito *et al*. conducted a study using a pre-tested 19-item questionnaire comprised 3 sections; (1) oral hygiene, (2) dietary habits and (3) perception of oral condition on 65 patients. Results of this study showed that the clinical utilization of the questionnaire facilitates the inclusion of multiple aspects of patient information, before initiation of periodontal treatment. The significant associations that were found between some of the self-care behaviors and oral hygiene levels document the important role of patient-centered oral health assessment in periodontal care [7].

Nagarajan and Pushpanjali conducted a study on a population that included 216 patients aged between 20 and 44 years who attended the outpatient department of the M.S. Ramaiah Dental College, Bangalore. The study population was subjected to a self-administered questionnaire (questions regarding bleeding gums, deposits on teeth, receding gums, swelling of gums, loose teeth), which was followed by a periodontal examination. Results of the study showed that the awareness of the periodontal problems has been reported to increase with increasing severity of the disease due to the destructive changes that are observed in periodontal disease [8].

In this study, it was observed that only 11.67% of the patients were aware about the bi-directional oral-systemic disease link while almost two-thirds of the population, 62.33%, believed that there was no relation between one's oral health and systemic well-being. So as a dentist, we should educate patients about this important relationship.

Similar results were reported by Moeintaghavi *et al*. and Bhatia *et al*. They also found that most of the patients were unaware about the effect of oral problems to the vital organs [9, 10].

This 21-question questionnaire was easy and quick to understand and fill. Within the limitations of the present study, the clinical use of the questionnaire disclosed salient information regarding periodontitis patients' oral health behavior, perceptions and knowledge about the oral-systemic disease link [10-12].

CONCLUSION

The present study reveals that the general population had minimal awareness regarding the systemic effects of periodontal disease and vice versa. Similar finding have been observed in other studies too.

The questionnaire facilitates the inclusion of multiple aspects of patient information, before initiation of periodontal treatment. There seems to be much room for improvement of oral hygiene and self-care among individuals presenting for an initial periodontal examination. It also emphasizes on our duty as oral healthcare professionals to not only provide healthcare but also increase the awareness and knowledge that people have about their oral hygiene status and the possible effects it may have on their overall well-being. In susceptible individuals, it may act as an independent risk factor for systemic diseases. Fortunately, it is a readily modifiable risk factor.

REFERENCES

1. Joshi N, George A, Hoshing A. A study of the reasons for irregular dental attendance in a private dental college in a rural setup. *Indian Journal of Dental Research*. 2007;18(2):78.
2. Newman M, Takei H, Klokkevold P, Carranza F. *Carranza's Clinical Periodontology*. St. Louis, Mo. Saunders/Elsevier. 2006.
3. Mealey B. Influence of periodontal infections on systemic health. *Periodontol 2000*. 1999;21(1):197-209.
4. Page R, Beck J. Risk assessment for periodontal diseases. *Int Dent J*. 1997;47(2):61-87.
5. Moore W, Moore L. The bacteria of periodontal diseases. *Periodontol. 2000*. 1994;5(1):66-77.
6. Yamamoto T, Koyama R, Tamaki N. Validity of a Questionnaire for Periodontitis Screening of Japanese Employees. *J Occup Health*. 2009;51(2):137-143.
7. Saito A, Kikuchi M, Ueshima F, Matsumoto S, Hayakawa H, Masuda H, Makiishi T. Assessment

of oral self-care in patients with periodontitis: a pilot study in a dental school clinic in Japan. BMC Oral Health. 2009 Dec;9(1):27.
8. Nagarajan S, Pushpanjali K. Self-assessed and clinically diagnosed periodontal health status among patients visiting the outpatient department of a dental school in Bangalore, India. Indian Journal of Dental Research. 2008 Jul 1;19(3):243.
9. Moentaghavi A, Mazloomi S, Ghahraee F. A study on the reasons of noncompliance with tooth brushing in young males in Azadshahr region of Yazd, Iran. *Indian J Dent Educ*. 2009; 2:107-11.
10. Bhatia A, Singh M, Bains S. To assess knowledge and awareness of North Indian population towards periodontal therapy and oral-systemic disease link: A cross-sectional survey. *Journal of Interdisciplinary Dentistry*. 2013;3(2):79.
11. Abrahamsson KH, Wennström JL, Hallberg U. Patients' views on periodontal disease; attitudes to oral health and expectancy of periodontal treatment: a qualitative interview study. Oral health & preventive dentistry. 2008 Jun 1;6(3).
12. Majra J, Gur A. Awareness regarding the systemic effects of periodontal disease among medical interns in India. *J Glob Infect Dis*. 2011;3(2):123.