

# The Extent of Periodontal Awareness and Treatment Modalities among Patients from North Malabar Region

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## Abstract

The aim of this study was to explore and understand the patient's views on their periodontal condition, their attitudes to oral health, awareness of different periodontal treatment modalities as well as oral-systemic disease link with the help of a questionnaire survey. A total of 370 patients comprising of 201 males and 169 females were included in the study. The patients were interviewed on a questionnaire basis. A questionnaire contained 22 questions relating to oral hygiene measures, knowledge and awareness regarding periodontal condition, its various treatment modalities, and the relation between oral and systemic disease. The completed questionnaires were then analyzed statistically to obtain percentage data. The results showed an extreme lack of awareness of the periodontal condition and oral hygiene measures as well as limited knowledge regarding different periodontal treatment modalities. Only 5.6% of the study population were aware of the relationship between oral and systemic disease. Since the level of awareness in this regard is at a bare minimum, there is an urgent need to educate and raise awareness of different treatment modalities available to improve periodontal health among general population groups.

## Keywords

- ▶ attitude
- ▶ knowledge
- ▶ oral health
- ▶ oral hygiene
- ▶ periodontitis

## Introduction

Periodontal disease is a major public health issue that is highly prevalent and adds to the global burden of chronic diseases. Periodontitis is considered to have bilateral associations with various systemic diseases such as diabetes mellitus, cardiovascular disease, hypertension, and adverse pregnancy outcomes. Factors that contribute to the steady rise in the prevalence of periodontal disease include poor oral health awareness and its treatment modalities. The condition can be readily reversed by effective plaque control measures such as daily tooth brushing and the use of interdental cleaning aids.<sup>1</sup>

Oral health knowledge is considered to be an essential prerequisite for health-related behavior. It has been observed that oral hygiene has mostly remained an ignored and unrealized major social problem. People continue to neglect oral

health, but seek medical care as required. However, it is not realized that often poor periodontal health can be a cause for the deteriorating systemic health of the individuals.

Preventive oral health knowledge, behavior, and practice are essential ways of maintaining oral health. The WHO reports that 15 to 30% tooth loss is found in adults and that early diagnosis with immediate implementation of treatment can accomplish prevention and management of periodontal diseases.<sup>2</sup>

Due to the misconceptions about routine dental treatments and unawareness of the relationship between oral hygiene and systemic diseases or disorders, most diseases remain undiagnosed or untreated because of this missing awareness. So it is important to do a recent study that will help the dentist to improve the understanding of patients about periodontal diseases and reduce the myths of the general population about periodontal therapy.

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Hence, this survey was undertaken to assess an individual's oral hygiene awareness, to understand the level of knowledge and information regarding different periodontal treatment modalities and the association between oral health and systemic well-being.

## Objective

The objectives of this study were as follows:

1. To assess the oral hygiene awareness among patients attending the outpatient department in A.B. Shetty Memorial Institute of Dental Sciences, Mangalore.
2. To assess their knowledge on different oral hygiene practices.
3. To assess their attitude and awareness regarding different periodontal treatment modalities available.
4. To assess the level of knowledge and information about the association between oral health and systemic well-being.

## Materials and Methods

### Screening Examinations

A total of 370 patients from the North Malabar region reporting to the outpatient department of A.B. Shetty Memorial Institute of Dental Sciences, Mangalore from July 2018 to December 2018 were included in the study. 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 they were ensured that total confidentiality would be maintained.

The study was conducted by the means of a structured self-administered questionnaire.

A questionnaire contained 22 questions. The questionnaire was divided into two parts. The first part consisted of questions related to age, sex, and the 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 toward periodontal therapy and the oral-systemic disease link.

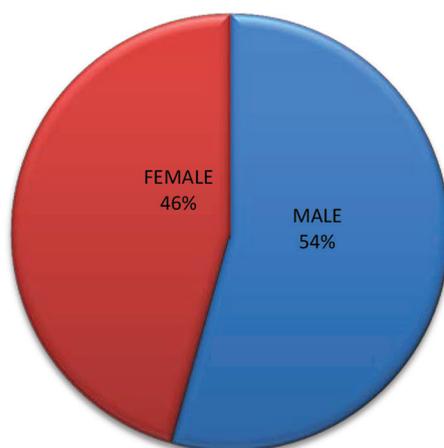


Fig. 1 Percentage of males and females.

### Inclusion Criteria

- Patients aged above 20 years attending the dental outpatient department of A.B. Shetty Memorial Institute of Dental Sciences, Mangalore and are willing to give verbal consent.

### Exclusion Criteria

- Patients with physical and mental illness, who are unable to respond to the questionnaire.

## Statistical Analysis

The data collected from the questionnaire were statistically analyzed. Descriptive statistics such as frequency and percentage have been used to assess the periodontal awareness and treatment modalities among patients involved in the study.

## Results

A total of 370 patients agreed to participate and responded to the questionnaire. The appropriate time required for the participants to fill the questionnaire ranged from 15 to 20 minutes. Of the 370 participants, 201 (54.3%) were males and 169 (45.6%) were females (►Fig. 1). The study included subjects with different occupations and different educational qualifications. Of 370 subjects, 52% were residents of rural areas and 48% were residents of urban areas; 63.4% of urban and 9.3% of rural residents were highly educated (►Fig. 2). Among the study population, only 19.7% used soft-bristled toothbrush and only 20% replaced their toothbrush once in 3 months (►Fig. 4). With regard to dental consultation 52% consulted dentists only when they had tooth pain (►Fig. 7). The majority of the study population were unaware of treatments available for treatable periodontal problems like brown gums, recession, replacement of missing teeth by a dental implant and, use of laser in periodontal therapy (►Fig. 9). The result of the study is represented below graphically (►Fig. 1–9).

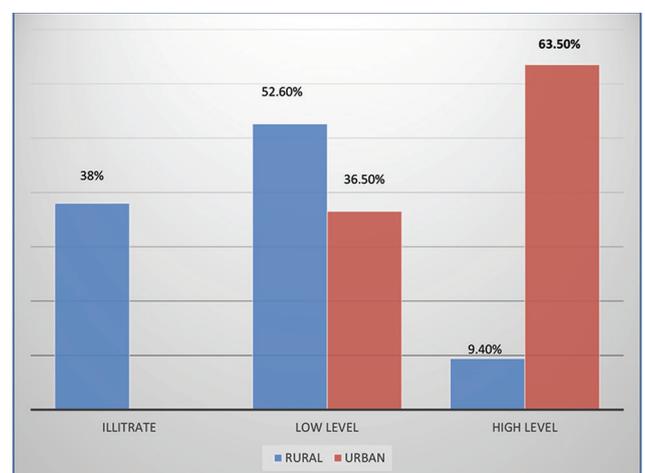


Fig. 2 Education level in relation to the location.

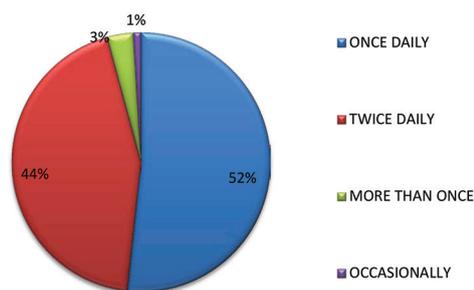


Fig. 3 Brushing frequency.

## Discussion

Periodontal diseases, comprising gingivitis and periodontitis, are probably the most common disease of mankind (Guinness World Records 2001). The recent Global Burden of Disease Study (1990–2010)<sup>3</sup> indicates that:

1. Severe periodontitis is the sixth most prevalent disease worldwide, with an overall prevalence of 11.2% and affected around 743 million people, and
2. The global burden of periodontal disease increased by 57.3% from 1990 to 2010.

Hence oral health is considered an indicator of overall health and is the key resource for an individual's social, economic, and personal development.<sup>4</sup> The patient adheres better to oral hygiene care regimens when informed and positively reinforced. Hence in this study attempts were made to evaluate knowledge of oral health, oral hygiene measures, relationship between oral and general health, and various periodontal treatment modalities available, by the means of a structured questionnaire.

The various studies performed by Levin and Landesman,<sup>5</sup> Korsch et al,<sup>6</sup> and Davis et al<sup>7</sup> have suggested that a questionnaire helps to improve the diagnosis and prognostic skills of the dentist and can help patients to reveal their problems. Yamamoto et al<sup>8</sup> conducted a questionnaire for periodontitis screening of 250 Japanese males of age group 50 to 59 years and suggested that self-reported questions are useful for screening periodontitis.

The findings of the present study revealed that 52% of subjects used to brush once a day (► Fig. 3), which is consistent with Hamasha et al,<sup>9</sup> and in Petersen et al<sup>10</sup> study 0.44% of subjects brush their teeth about twice a day which is less when compared with Al-Shammari et al,<sup>11</sup> Songpaisan and Davies,<sup>12</sup> and Gill et al study.<sup>13</sup> Evidence shows that general oral hygiene conditions are far less than satisfactory despite people claiming to practice oral hygiene measures on a daily basis.

The present study also showed that 31% used their toothbrush until the bristles were frayed (► Fig. 4). It has been documented that toothbrush with frayed bristles is ineffective



Fig. 4 Frequency of changing toothbrush.

for proper cleaning and also causes adverse effects like oral ulcers and gingival recession, and it was recommended that toothbrushes should be replaced every 3 months.

The majority of urban and rural populations were unaware of interdental aids (► Fig. 5). In total, 82% of the study population reported that they were not aware of the availability of auxiliary aids and hence, had never used them. Inadequate self-performed oral hygiene practices result in the accumulation of dental biofilms thereby initiating and sustaining the periodontal disease process.

Gingival bleeding is an early sign of periodontal disease and a leading risk marker for existing periodontal inflammation that accounts for the onset and progression of periodontitis. Self-perceived bleeding gums among the sample were 58% and those never noticed bleeding from gums were 42% (► Fig. 6). This study is consistent with the studies of Nagarajan and Pushpanjali,<sup>14</sup> Tervonen and Knuttila,<sup>15</sup> and Kallio et al,<sup>16</sup> which showed that most of the patients did not notice bleeding from gums and were poorly perceived by the patient. In total, 60% of the study population assume that bleeding gums do not require dental consultation.

Periodic check-up and maintenance are essential for achieving long-term periodontal health. However, there was a difference in opinion regarding the signs and symptoms for which the study population opted for a dental consultation. Surprisingly enough, 50% of the population, visit the dentist only in pain (► Fig. 7). Dental pain appeared to be the most important cause of dental visits.

Since the early stages of periodontal disease are often symptomless, a significant number of affected patients do not seek professional care. The relatively “silent” nature of the early stages of the disease, combined with low awareness of periodontal health, leads to many patients pursue “symptom-driven” care for the advanced disease.<sup>3</sup>

When asked about availing any dental treatment in the past, 48% of the subjects had never visited the dentist before and 52% had undergone periodontal treatment, mainly oral prophylaxis.

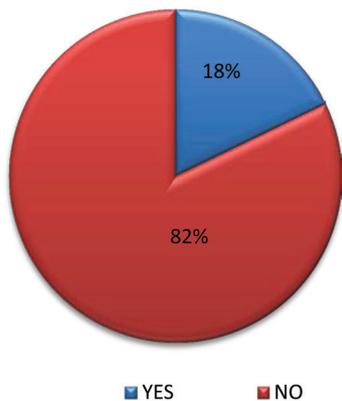


Fig. 5 Knowledge about interdental aids.

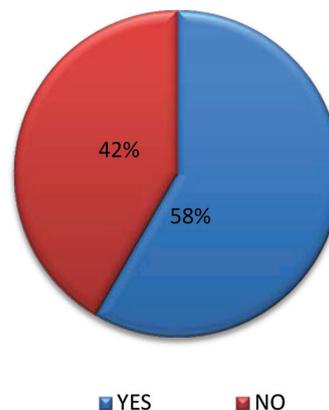


Fig. 6 Presence of bleeding gums.

A total of 76% of the study population rejected periodontal therapy due to fear and the source of the origin of fear was 51% from personal experience such as possible pain, fear of needles, instruments and/or another armamentarium, unsuccessful treatment results, 21% from friends, 25% from family members' experience and 3% subjects from the media (→ Fig. 8).

Responses concerning knowledge about the treatments available for treatable periodontal problems like brown gums, recession, replacement of missing teeth with dental implants, and the use of laser in periodontal therapy were poor, suggesting that there is a need for awareness of these aspects (→ Fig. 9). A similar finding was observed in Pralhad and Thomas study<sup>17</sup> among interns. Half of those interviewed did not know what dental implants are. With implantology coming up to be recognized as a subspecialty, it is necessary that information about implants be disseminated among the public and also among the professionals.

Misconceptions about routine dental treatments are common among the general public. When asked about scaling, the most common periodontal procedure performed, 33% of the subjects believed that scaling causes tooth mobility. Similar results were seen and it was surprising to know that 52.6% of the medical professionals in the Dhulipalla et al study<sup>18</sup> believed that scaling causes loss of enamel.

Periodontal disease has a two-way relationship as far as systemic health is concerned. Periodontal disease is considered to be the sixth major complication of diabetes mellitus and constitutes an important risk factor as well.<sup>3</sup> The result of the study also showed that that only a few subjects were aware of the oral-systemic disease link while almost two-third of the population were unaware of this. Similar results were concluded by Moeintaghavi et al,<sup>19</sup> Bhatia et al<sup>20</sup> studies. So as a dentist we should educate patients about this important relationship. A total of 70% of the sample size was of the opinion that periodontal diseases cannot be prevented and 29% with an opinion that it can be prevented.

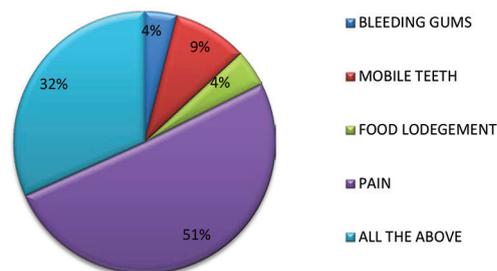


Fig. 7 Dental consultation opted for the various sign and symptoms.

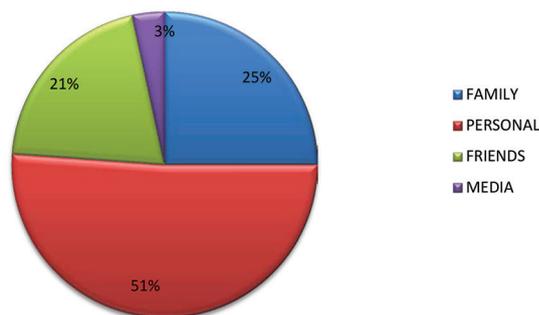


Fig. 8 Source of fear for periodontal therapies.

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 patient's oral health behavior, perceptions, and knowledge about the various treatment modalities as well as oral-systemic disease links.

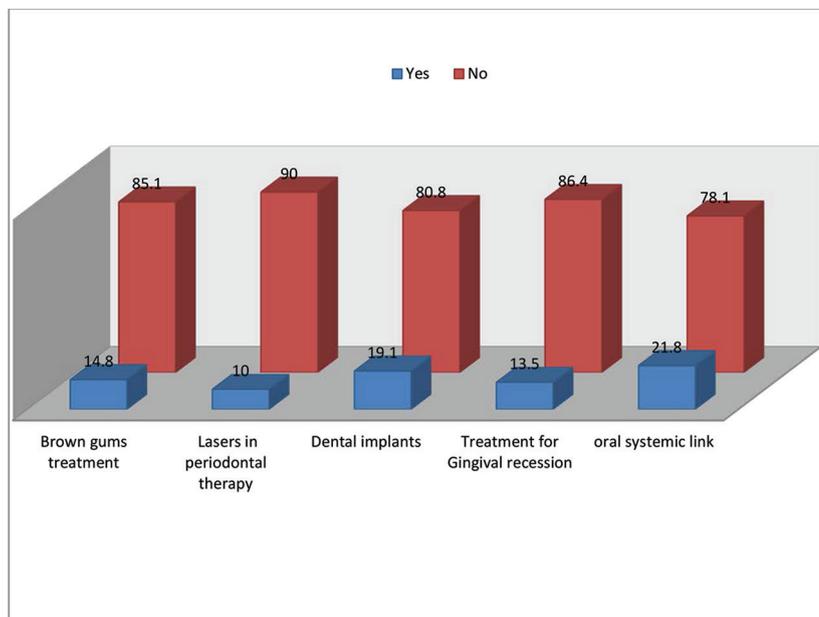


Fig. 9 Different periodontal treatment modalities and oral-systemic link.

## Conclusion

The present study reveals that the general population had minimal awareness regarding oral health care, various periodontal treatment modalities available, and systemic effects of periodontal disease. It also emphasizes our duty as oral health care professionals to not only provide health care but also to improve people's awareness and knowledge. Most of the aforementioned dental problems can be prevented by providing awareness starting from community level on early signs of periodontitis, the need for professional diagnosis, effect of its treatment outcome, the importance of completing the treatment of periodontitis before proceeding with replacement, role of dental implants as a part of the rehabilitation of masticatory dysfunction, and interdependence of periodontal health and general health.

### Conflict of Interest

None declared.

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