Original Research Article

Correlation between Self Perceived Oral Hygiene Awareness and Clinical Examination of Periodontal Health Status among Patients - A Questionnaire Based Cross-Sectional Study

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ABSTRACT

Aims: To correlate the results obtained by questionnaire study about oral hygiene awareness with that of clinical examination of the periodontal health status.

Materials and methods: A close- ended questionnaire containing 19 questions was administered to 100 individuals, aged 16-75 years. Clinical examination was performed and Plaque index, Gingival index and Russell's periodontal index was recorded.

Results: The results of this study show that there is a correlation between the oral hygiene awareness and clinical examination.

Conclusion: The knowledge and self-awareness about an individual's oral health plays a vital role in seeking dental treatment and also in understanding the need for overall well being.

Keywords: Awareness, periodontal status, questionnaire

INTRODUCTION

Periodontal diseases are a group of lesions affecting tissues surrounding and supporting the teeth. Epidemiological research indicates that periodontal diseases are widespread throughout the world. It is evident in all countries at moderate to high levels, resulting in extensive loss of teeth among adults.

Prevention and management of periodontal diseases is accomplished primarily by maintaining tooth surfaces which are free of dental plaque. Maintenance of periodontal health requires an informed patient. [1]

Perceptions of oral health depend on the understanding by the individual of what "normal" oral health is, and the specific symptoms he or she may experience. [2]

Recognition of health and disease by a person, the knowledge of what to do when a problem occurs and the appropriate response from the health professional are the major factors in prevention and control of chronic inflammatory periodontal diseases. [3]

In determining health, various forms of assessment are - clinical study, screening with or without an interview study or self-administered questionnaire, and a combination of the above.

Comparison of oral health assessed clinically with self-perceived assessment could demonstrate the efficacy of the individual to evaluate personal health status.

The purpose of this study was to correlate the results obtained by questionnaire study about oral hygiene

awareness with that of clinical examination of the periodontal health status.

Objective

To draw inferences based on the comparative evaluation of the questionnaire and clinical examination.

MATERIALS AND METHODS

A cross-sectional study was conducted on 100 subjects using a close-ended objective type of questionnaire. Subjects aged 16years -75years attending the Out Patient Department of Yenepoya Dental College, Yenepoya University, Mangalore, Karnataka were recruited.

Prior to data collection ethical approval was obtained from Institutional ethical committee, Yenepoya University, Mangalore, Karnataka.

The questionnaire was in English. It was translated into local languages i.e. Kannada and Malayalam to improve subjects' understanding of the questions by a person who was otherwise not part of the study.

Clinical examination was performed on all the subjects by the same investigator using mouth mirror, periodontal probe and 17/23 explorer. Indices recorded were;

a. Plaque Index (Silness J and Loe H - 1964)

b. Gingival Index (Loe H and Silness J - 1963)

c. Russell's Periodontal Index (Russell A.L-1956)

Selection Criteria

Inclusion criteria:

- Age group 16 to 75 years.
- Subjects willing to participate in the study.

Exclusion criteria:

- Subjects exposed to antibiotics 3 months prior to the study.
- Pregnant or lactating women.
- Uncontrolled diabetes, hypertension
- Mentally challenged patients.

Data analysis:

Data was entered in MS Excel spreadsheet (2013) and analysed through SPSS 16.0 software.

Chi Square test was used to evaluate the parameters.

RESULTS

All the 100 subjects (58 males, 42 females) brushed their teeth using a toothbrush and toothpaste. However, 69% of them still showed signs of moderate gingivitis.

When the texture of the toothbrush used was assessed 50% used medium bristle, 31% soft bristle, 8% hard bristle and very few i.e. 11% never noticed.

It was also observed that 50% (medium bristle) and 31% (soft bristle) of the subjects used the prescribed texture of toothbrush. However, their GI (Gingival index) assessment showed that 62% and 64.5% ($p < 0.05$) among them showed signs of moderate gingivitis respectively. (Fig -1, table -1).
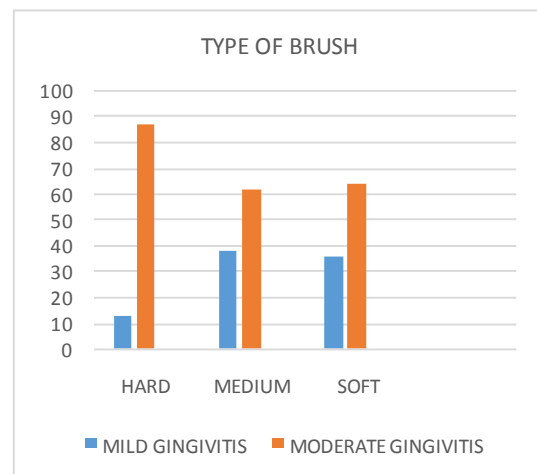
FIGURE-1-Type of brush

TABLE-1- Chi square test

	Value	Exact Sig. (2-sided)
Fisher's Exact Test	8.049	.038
N of Valid Cases	100	

When subjects were questioned if they experienced bleeding from gums – 42%answered yes and 52% answered no. On clinical examination it was observed that 81% among those who answered yes

actually showed signs of moderate gingivitis and 60.3% of the subjects who said no also showed signs of moderate gingivitis. (Fig -2, table- 2)
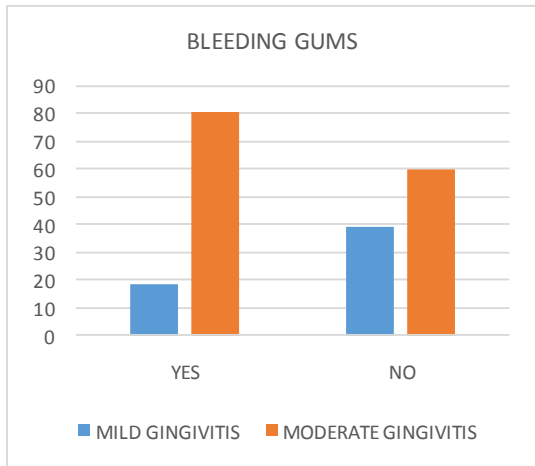

FIGURE-2- Bleeding gums

TABLE-2- Chi square test

	Value	Df	Exact Sig. (2-sided)
Pearson Chi-Square	4.836	1	.031
N of Valid Cases	100		

The opinion of subjects regarding their health status was categorized into very good, good, not so good and poor. Though maximum percentage (60% - good, 16%- very good, 20% - not so good, 4%- poor) had a positive opinion it was observed clinically that 93% had beginning periodontal disease and 7% had established periodontal disease. (Fig -3, table-3)
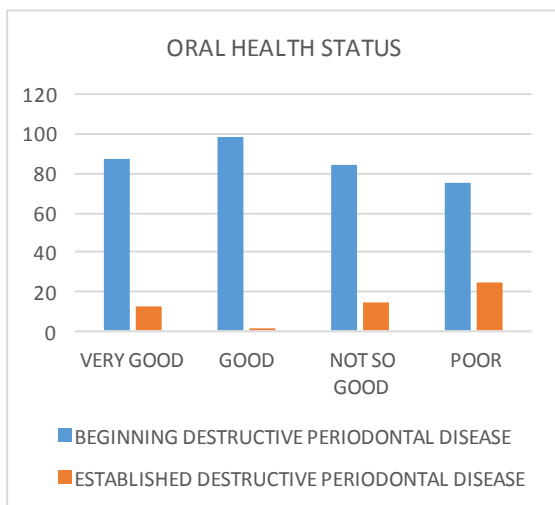

FIGURE-3- Oral Health Status

TABLE-3 – Chi Square test

	Value	Exact Sig. (2-sided)
Fisher's Exact Test	8.417	.023
N of Valid Cases	100	

DISCUSSION

Though periodontal disease is highly prevalent, awareness among people is low, due to the relatively asymptomatic course of the disease during the early stages.

Awareness of periodontal problems has been reported to increase with increasing severity of disease. [4, 5]

This study was undertaken to compare self-assessed and clinically diagnosed periodontal health status.

It was observed that all 100 subjects used toothbrush and toothpaste to brush their teeth and data analysis showed that only 7% of the subjects had established destructive periodontal disease and 15% had poor oral hygiene highlighting the fact that majority of the subjects had good periodontal and oral hygiene status.

Studies have proved that periodontal disease might be prevented by regular, meticulous plaque removal in the form of primary prevention (Axelsson and Lindhe, 1978). The type of brush used by subjects showed that approximately 80% of the subjects used the recommended type of brush i.e. medium and soft bristled. On clinical examination it was observed that the subjects using hard brush showed higher percentage (12.5%) of established periodontal disease. A significant percentage (87.5%) of subjects showed moderate gingivitis while a lesser percentage (25%) had poor oral hygiene. Frequency of brushing indicated that subjects who brushed once daily showed a higher percentage (13.5%) of established destructive periodontal disease as against 3.5% in subjects who brush twice daily. The former also showed a higher percentage 75.7% of moderate gingivitis. [6]

Other studies have shown that frequency of daily toothbrushing is associated with a reduction or lower incidence and prevalence of gingivitis.42% of the subjects had experienced bleeding gums and on clinical examination of these subjects 9.5% had established periodontal disease and 81% had moderate gingivitis as compared to 5.2% and 60.3%respectively among those who never experienced bleeding gums. In a study done by Nagaraj S et al [3] to assess the extent of agreement between clinical and self-assessed periodontal health status showed that, though18% subjects reported with bleeding gums, 84.7% of the total subjects showed bleeding on probing.

Among subjects who visit dentist regularly "none" of the subjects showed signs of established periodontal disease.

Subjects who believed to have "good" status of oral health indeed showed low percentage (3.94%) of established periodontal disease and gingivitis as compared to those with poor oral hygiene status (16.6%). Cascaes AM et al [7] had conducted a similar study to investigate the association between periodontal disease and self- rated oral health, it was concluded that the prevalence of poor self-rated oral health was significantly higher among those who presented periodontal disease. In contrast to this, a study done by Gilbert AD et al [8] to develop a self-reporting questionnaire for use as an epidemiological measure of periodontal status showed that, many people who displayed some indications of periodontal disease did not recognise their condition and were neither unaware of it.

This measurement of patient awareness followed by clinical examination is a useful model where patients can perceive their oral health assessment to seek further dental treatment.

Only 55% of the total subjects believed that smoking affects oral health in this study, whereas in a study done by Al-Shammari KF et al [9] to assess the differences in dental patient knowledge and awareness of the effects of smoking on oral health, majority of the subjects (76.2%) were aware of the effects of smoking on periodontal health.

More than half of the subjects (80%) were also unaware about interdental aids pointing out a need for awareness and motivation towards their use as adjunctive aids to toothbrush and toothpaste.

The awareness about the effects of sweets and carbonated drinks on the teeth was lacking (49%) in contrast to the study done by Kishore S (2009) wherein the ill-effects of carbonated drinks was assessed among medical students showing 87.14% awareness. [10] The difference could be related to the inclusion of general population for this study.

Self-reporting of bleeding gums was 42% and on clinical examination all subjects showed signs of gingivitis with 81% showing moderate gingivitis which is in contrast to the study by Nagaraj S et al. [3]

Regarding oral health status, 24% of the participants reported to have not so good-poor condition and 76% as very good-good condition compared to clinical examination which showed 93% to have beginning of periodontal disease and 7% with established periodontal disease. This is in contrary to the study by Robinson et al [11] which was done to ascertain whether questionnaires can be used to replace clinical surveys. They found that 26% of the participants reported "bad" condition compared to clinical examination that identified 51.5% to be in bad condition.

This correlation between self-assessment and clinical examination when developed for community based study would help in substantiating the need for prevention and treatment of the disease state.

CONCLUSION

A Questionnaire study has an inherent and significant value in

explaining the levels of dental awareness, perception and self- assessment, which in the present study demonstrated a definite correlation with the "gold standard" of professional clinical assessment.

Increasing people's awareness and knowledge of their own dental disorders will help in seeking dental treatment to improve oral as well as general health.

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