

## ORIGINAL RESEARCH

# An Overall Assessment of Oral Health Knowledge and Practice on the Periodontal Health of Adults in Beed District of Maharashtra, India

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## ABSTRACT

**Background:** Oral health knowledge is considered to be an essential prerequisite for health-related behavior. Oral health care can sometimes be a forgotten part of a healthy lifestyle. Hence, the aim of this study was to find out an association between knowledge of the patient with oral health awareness to maintain good oral and periodontal health.

**Materials and Methods:** A total of 300 patients who were attending outpatient department were selected. A structured questionnaire which includes socioeconomic status, type of toothbrush, methods of brushing, use of interdental aids, and visits to the dentist was given to the all the participated patients. Then, data were collected from all the patients and were analyzed statistically using ANOVA and Student's unpaired *t*-test.

**Results:** The result of this study showed a lack of oral hygiene awareness and limited knowledge of oral health practice.

**Conclusion:** There is a need of comprehensive oral health educational programs to implement proper oral hygiene practices, thereby we can improve good oral as well as periodontal health.

**Keywords:** Dental visit, Oral health awareness, Oral hygiene practice, Periodontal health, Socioeconomic status.

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## INTRODUCTION

Periodontitis is an infectious disease and is a major cause, leading to tooth loss in adults. The pathogens, which are associated with periodontal disease, are alone

insufficient to cause disease. The occurrence and severity of periodontal disease is an outcome of environmental and acquired risk factors.<sup>[1]</sup>

The relation between complexity of this multifactorial disease and effect of specific bacteria and modifying risk factors has been studied recently. One of the important contributors affecting the progression and severity of disease includes oral health awareness and basic oral health education, especially in rural, semi-urban, and urban areas. The epidemiological data are lacking, to identify areas needing oral health care.<sup>[2]</sup>

In India, there is no specific budget and is designated for oral health; the annual health budget is only 1.5% of gross domestic product. Oral health knowledge is an essential aspect for health-related behavior. According to latest census of India, population group centers are classified as rural, semi-urban, urban, and metropolitan.<sup>[3]</sup>

The population groups are classified as under:

1. Rural population: <10,000
2. Semi-urban population: 10,000 and <1 lakh
3. Urban population: 1 lakh and above and <10 lakh
4. Metropolitan population: 10 lakh and above.

Based on this, Beed is considered as an urban city of Maharashtra with total area of 8.29 km<sup>2</sup> and population of 146,709 (Census 2011).

Till date, no study has been done to assess the awareness regarding oral hygiene practices and periodontal health in Beed population. The main purpose of this study is to evaluate the awareness levels regarding oral hygiene practice and periodontal health in patients visiting the outpatient department of Aditya Dental College, Beed.

## MATERIALS AND METHODS

A total of 300 patients were selected for the study. The oral hygiene awareness study was carried out in the Outpatient Department of Periodontology at Aditya Dental College, Beed. The approval for the study was given by scientific and Ethical Committee of Institution.

Informed consent was taken from all patients. The questionnaire 1 included information related to age, gender, and socioeconomic status, cleaning of teeth,

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type of toothbrush, methods of brushing, change of toothbrush, use of interdental aids, cleaning of tongue, use of mouthwash, the halitosis, and visit to the dentist. After distribution of questionnaire, patients were asked to fill the information of pro forma and the data were collected and analyzed in percentage.

**Statistical Analysis**

The data analyzed statistically for awareness regarding oral hygiene practice and periodontal health among patients was done using both descriptive and inferential statistics. ANOVA test was used for association of attitude and practice score of patients with age in years and association of attitude and practice score of patients with socioeconomic status. Student’s unpaired *t*-test was used for association of attitude and practice score of patients with gender. The software used in the analysis was SPSS 17.0, EPI-INFO 6.0, and Graph Pad Prism 5.0 version. *P* < 0.05 was considered as the level of statistical significance.

**RESULTS**

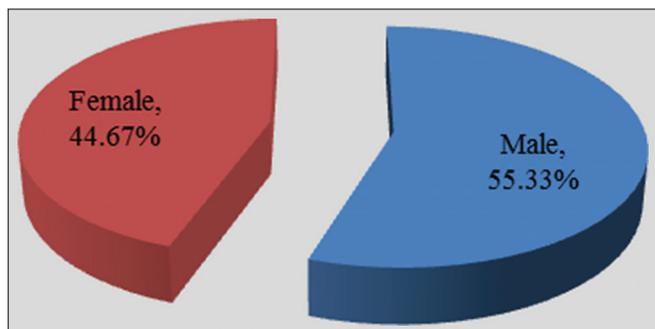
A total of 300 patients, 134 (45%) were female and 164 (55%) were male included, with the mean age of 34.98 years [Graph 1].

According to the socioeconomic status and oral hygiene practice, most of the patients were from lower middle class 178 (59%), upper middle class was 75 (25%), and lower class was 47 (15%). The association between oral hygiene practice and lower socioeconomic status was significant (*P* < 0.05) as compared to the other class [Graph 2 and Table 1].

**Table 1:** Association of attitude and practice score of patients with socioeconomic status

Socioeconomic status	n	Mean	SD	SE	F-value	P
Upper class	0	0	0	0	20.05	0.0001, S
Upper middle class	75	21.66	2.67	0.30		
Lower middle class	178	21.37	2.56	0.19		
Lower class	47	24.17	3.29	0.48		
Total	300	21.88	2.88	0.16		

SD: Standard deviation



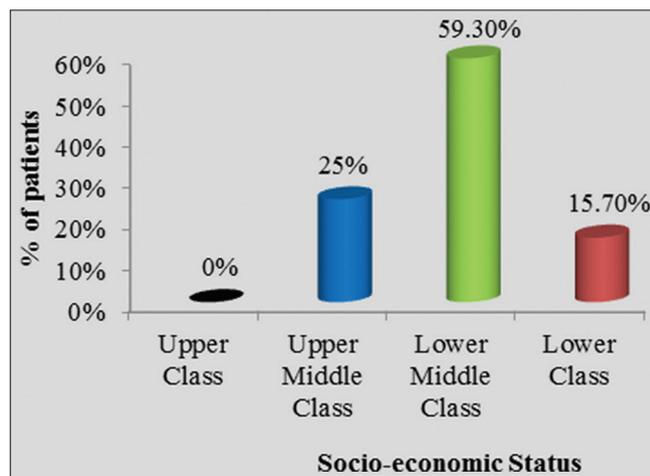
**Graph 1:** Distribution of subjects according to their gender

Almost 71% of participants used toothbrush and toothpaste, 26% were using toothbrush and tooth powder, 0.35% indicated the use of neem stick, and 3% charcoal for cleaning of teeth [Graph 3].

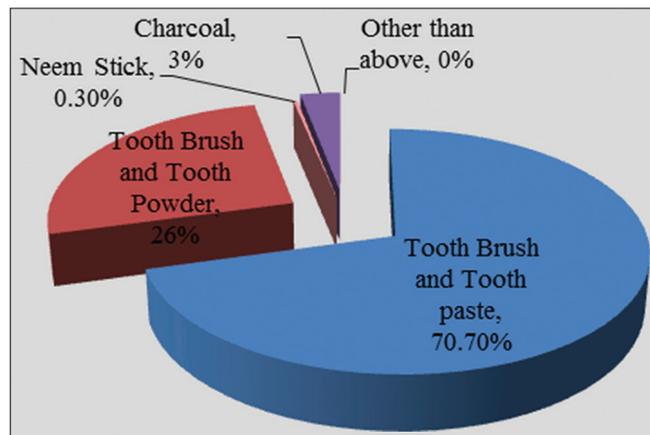
In response to question for frequency of brushing 73% of population used to brush once a day, only 15% of population used to brush twice daily.

The 42% of subjects used medium bristle toothbrush, 29% used hard bristle toothbrush only 16% of subjects used soft bristle toothbrush. The techniques for brushing teeth 80% of the subjects brush their teeth in horizontal direction, 0.7% uses vertical brushing, 5.7% uses circular brushing technique, and 13% uses combined brushing technique [Graph 4].

Among 33% of population changes toothbrush at 6 months’ time interval, 36% changes toothbrush once in a year, 23% never changes a toothbrush, whereas only 6% of population changes toothbrush at 3 months’ time interval. In response to question, the use of interdental aids, 75% of population does not use any interdental aids, 8% uses wooden toothpick, 7% uses interdental brush, and 9% uses dental floss [Graph 5].



**Graph 2:** Distribution of subjects according to their socioeconomic status



**Graph 3:** Methods of cleaning teeth in percentage

A 67% of the subject does not clean tongue regularly as oral hygiene practice. Only 53% of subjects rinses with water after eating. 52% of subjects noticed halitosis from mouth.

The population visit dentist only whenever problem arises is 66%, only 3% of population visit dentist after every 3 months, and 16% of population visit at 6 every 6 months, and 14% of population visits once in a year [Graph 6].

## DISCUSSION

India has diversity in geographic conditions and areas also differ in socioeconomic, educational, and cultural and behavioral traditions. Due to these conditions, it is essential to create the awareness for health services and their utilization for improving health. Oral diseases due to lack of awareness about oral hygiene techniques are one of the major issues faced by society.<sup>[4]</sup>

Dayakar *et al.* stated that there was relative lack of oral hygiene understanding and knowledge of oral hygiene practices in engineering students and even in health professionals.<sup>[5]</sup>

In our study, there was no significant association between age and gender of population. Hosadurga *et al.* also confirmed that there is no significant relationship between age and oral hygiene awareness. In contrast to our study, they found females were more aware than males.<sup>[6]</sup>

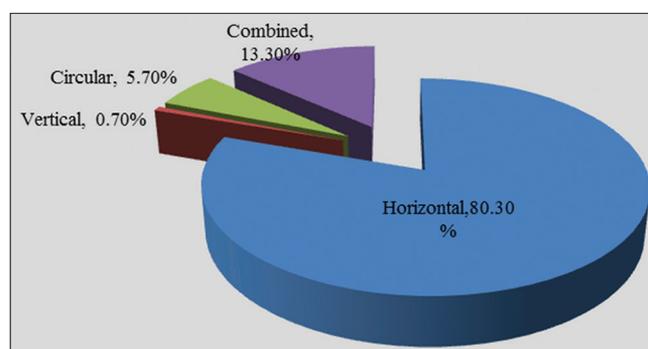
The present study showed that the socioeconomic status significantly affects the attitude and practice score of patients with which was similar to a study conducted by Singla *et al.* who studied the impact of lifestyle on periodontal health.<sup>[7]</sup>

This study showed that there was no significant association between oral hygiene attitudes with gender while the study conducted by Zhu *et al.* in which Chinese population showed that the more percentage of females used to brush twice a day as compared to males.<sup>[8]</sup>

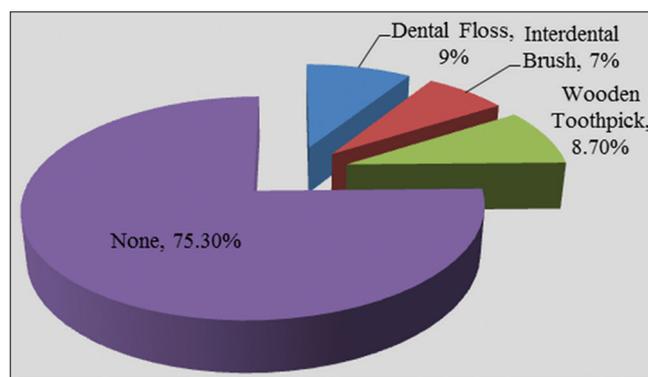
Toothbrush and toothpaste are the common method used for brushing. The frequency of brushing, in our study, twice a day was very low 15% as compared to other studies conducted by Dilip *et al.* on police recruits found that frequency of brushing twice a day was 62%.<sup>[9]</sup>

Horizontal technique for brushing can jeopardize the tooth structure, which was used by 80% of the subjects in this study. These findings were similar to a study conducted by Zhu *et al.*<sup>[8]</sup>

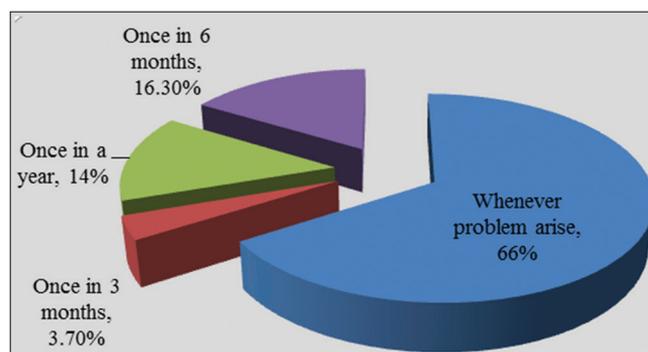
The percentage of the use of interdental floss was 9% which was very low as compared to Hamilton and Coulby *et al.* and Madan *et al.* who found that the use of interdental floss was high in percentage (44%) in their study.<sup>[10,11]</sup>



Graph 4: Methods of tooth brushing technique



Graph 5: Percentage use of interdental aids



Graph 6: Percentage of visit of patients to dentist

This study showed that 66% of the subjects visited a dentist when they were in pain, according to Oberoi *et al.*, most of the population avoided dental treatment due to feeling of no need for treatment (41%), then cost of dental treatment (26%) which is followed by lack of time (24%).<sup>[12]</sup> Most of the population visits dentist only when the problem arises; this shows that people are unaware of the oral health and signs and symptoms of the oral disease.

## CONCLUSION

It was found that there was an urgent need for an implementation of patient awareness program regarding their oral hygiene practices as well as knowledge of periodontal health in Beed district. Oral hygiene awareness should reach to every level of society in the population.

Dentist can play crucial role to overcome this problem by conducting various public oral health educational programs through newspapers, local radio channels, television programs, internet, and social events. It is not only about educating the patients but also about the reinforcement of maintenance of proper oral hygiene and periodontal health. This will ensure all of us about an establishment of healthy society rather than healthy individuals.

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**ADITYA DENTAL COLLEGE AND HOSPITAL, BEED****Department of Periodontology****Questionnaire 1: Pro forma**

Age of Patient:.....

Sex:.....

**Socioeconomic Status:**

a) Upper class b) Upper middle class c) Lower middle class d) Lower class

**1. How do you clean your teeth?**

a) Toothbrush and Toothpaste b) Toothbrush and Tooth powder

c) Neem stick d) Charcoal e) Other than above

**2. How often do you clean your teeth?**

a) Once daily b) Twice daily

c) More than twice daily d) Occasionally

**3. What type of toothbrush do you use?**

a) Hard bristles b) Medium c) Soft d) Never noticed

**4. Which technique do you use for tooth brushing?**

a) Horizontal b) Vertical c) Circular d) Combined

**5. Do you change your toothbrush regularly? a) Yes b) No****6. How often do you change your toothbrush?**

a) Once in 3 months b) Once in 6 months c) Once in a year d) Never

**7. Do you use any of these interdental Aids?**

a) Dental floss b) Interdental brush c) Wooden toothpick d) Never used

**8. Do you clean your tongue every day?**

a) Yes b) No

**9. Do you rinse your mouth after eating? a) Yes b) No****10. Do you use mouthwash? a) Yes b) No****11. Have you noticed halitosis from your mouth?**

a) Yes b) No

**12. How often you visit your dentist?**

a) Whenever problem arise b) Once in 3 months c) Once in a year d) Once in 6 months

**Signature of Patient .....****Signature of PG Student .....**