

# Evaluating Perception on Oral Hygiene, Practice and Reason for it and Exploring Gender Differences among Outpatients Visiting a Private Dental College Hospital

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**Abstract:** Aim: To evaluate perception on oral hygiene, practice, and reason for it and exploring gender differences among outpatients visiting a private dental college hospital. Objectives: i) To evaluate perception on oral hygiene among patients outpatients visiting a private dental college hospital. ii) To evaluate oral hygiene practices and reasons for it among outpatients visiting a private dental college hospital. iii) To explore the gender differences among outpatients visiting a private dental college hospital. Materials and Methods: A survey is to be carried out among 150 patients attending the general outpatient department of a private dental college hospital. A pre-tested interviewer-administered questionnaire is used to gather information about practices and awareness about oral hygiene. Background and Reason: Oral hygiene is implied in the health of all parts of the body including oral cavity. The knowledge of actual practices in maintaining the oral health at standard based on patient's insights of oral health care is essential. Knowing the effect of gender on oral health would assist the development of successful attitude and behavior modification approach towards balanced oral health among the community. Results: Most of the patients (89%) felt that oral hygiene is mandatory for the overall health of the body. The use of toothbrush and toothpaste (100%) was the preferred cleaning aid among patients in the present study. The major constraint for avoiding dental visit was the cost (70%) followed by dependency (20%) and time constraint (10%). Conclusions: Gender played a role in the perception of general health relative oral health, dental visit, daily tooth brushing frequency and choice of toothbrush and toothpaste for oral self-care. Professional plaque removal and regular follow-up combined with oral hygiene instructions to the patients can minimize the gingival inflammation and swelling. The poor resources for dental care, common misconducts and no availability of professional care are the main barriers in seeking optimum oral hygiene. The development of oral health approach and behavior modification tactics towards maintainable oral health among the studied group should reflect these differences.

**Keywords:** Dental care, gender difference, oral hygiene, oral health, perceived oral health, oral health practices, professional plaque removal

## 1. Introduction

Oral diseases constitute public health problem in developing countries due to increased prevalence, economic effects, and negative impact on the quality of life of affected individuals.<sup>[1]</sup> Oral diseases adversely affect concentration, relational relationship, and productivity due to the complex relationship between oral health and general health. Prevention of oral disease can be achieved by optimizing the oral health practices in the form of proper brushing, flossing, regular dental visits, and proper diet.<sup>[1]</sup> The clinical concept that the maintenance of an effective plaque control is the basis of any attempt to control periodontal diseases established since the 1950s still remains valid.<sup>[2]</sup> The understanding of actual practices in keeping the oral health at standard based on patients' perceptions of oral health care is important. Oral health is not only shining white teeth and sweet breath. The practices and apparent access barriers have been related to oral health.<sup>[3]</sup> Patient's opinion on the quality of dental care provision and their intent on reaccessing a dental service may be associated with a practitioner's professionalism, empathy, and delivery of oral hygiene advice.<sup>[4]</sup> Dentists are faced with several apparent ironies when it comes to advising patients on the best strategy for plaque control.<sup>[5]</sup> Oral care, as part of general health self-care, consists of the wide spectrum of activities ranging from

care, prevention, and diagnosis to looking for professional care. Oral self-care practices have been ascertained as a preventive method to maintain good oral health as a part of general health.<sup>[6]</sup> The studies on gender differences in relation to oral health were conducted in Japan, Sweden, Jordan, Kuwait, Palestine and Libya.<sup>[1]</sup> The results of these studies consistently discovered that females are more aware of brushing, more cautious about oral health and perceive their own oral health to be better than males. They also show more positive dental health attitude and better oral health behavior than their male counterparts.<sup>[1]</sup> Limited studies are accessible on oral hygiene practices and perceptions among the Indian population. Therefore, a hospital based study was conducted to evaluate perception on oral hygiene, practice, and reason for it and exploring gender differences among outpatients visiting a private dental college hospital.

## 2. Methods and Materials

A face to face interview was conducted to collect data from patients visiting a private dental college hospital, using a structured questionnaire. The questionnaire included questions pertaining to the oral hygiene practices and perceptions on the relationship of oral health with the oral hygiene practices.

**Sample size calculation**

The sample size of 150 was determined corresponding to the results of the pilot study. Out of 30 patients in the pilot study, 89% reported that oral hygiene is mandatory for the overall health of the body.

Where:

$Z = Z$  value

$p$  = percentage of picking a choice

$c$  = confidence interval

So, the sample size was calculated as per formula

The sample size was calculated to be 150. A cross-sectional survey was conducted from October to December 2016 among 150 patients visiting a private dental college hospital.

**Inclusion criteria**

Systemically healthy individuals aged between 20 to 60 years. The patients willing to give informed consent.

**Exclusion criteria**

- Patients with history of systemic disease
- Pregnancy and lactating women
- Tobacco users
- Undergone scaling during the past 6 months.

**Questionnaire**

A self-made questionnaire written in the English language was given to each one of them. All the patients were assisted by one dental hygienist. The questionnaire included information related to the patient's name, age, gender, and education. The questionnaire was further categorized to evaluate the perception of oral hygiene, practice, and reason for it.

**Data collection**

The study participants were recruited by nonprobability convenience sampling method and included patients visiting a private dental college hospital. A total of 576 patients were screened and 150 patients were selected which satisfied the inclusion and exclusion criteria. The socioeconomic status of the patients was assessed using the Kuppaswamy scale [7] which is based on income, education, and occupation.

**Statistical analysis**

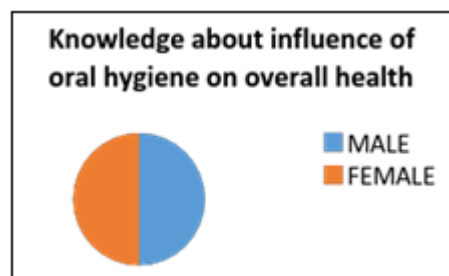
Data was entered into Microsoft excel and analyzed using SPSS version 17.0. Descriptive statistics were calculated for response items. Chi-square test was applied for comparison of the perception of oral hygiene, practice, and reason for it among males and females. In all the cases, a  $P < 0.05$  was considered significant.

**3. Results**

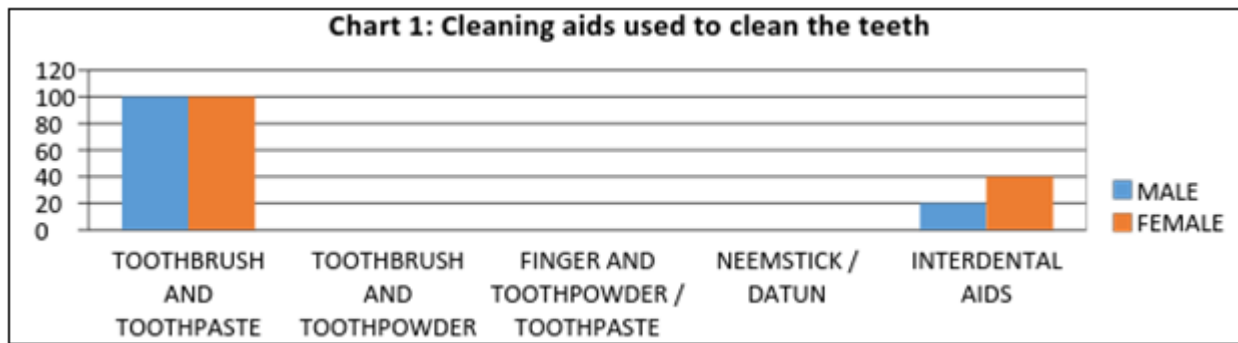
The study population included 75 (50%) male and 75 (50%) female patients and the mean age of the patients was  $36.86 \pm 12.37$  (Range 20 to 60) years. The demographic profile of the population is shown in Table 1.

Female		Male		
%	n	%	N	
Age				
10	15	10	15	<20
30	45	40	60	20-30
				30-40
				40-50
10	15			50-60
				>60
Education				
				Illiterate
				Primary school
				Middle school
		10	15	High school
20	30	10	15	Senior secondary school
20	30	30	45	Graduate/Post-graduate
10	15			Professional
Occupation				
20	30	20	30	Unemployed
				Unskilled worker
				Semiskilled worker
		10	15	Skilled worker
				Clerical, shop owner, farmer
				Semi professional
30	45	20	30	Professional
Monthly family income				
40	60	30	45	>2000
10	15	20	30	1000-1999
				750-999
				500-749
				300-499
				100-299
				<100

A majority ( $n = 134, 89%$ ) of the patients felt that oral hygiene is mandatory for the overall health of the body with the equal number of males and female ( $n=67, 89%$ ) having this perception regarding the importance of oral hygiene for overall health. [Figure1].



The use of toothpaste and toothbrush ( $n = 150, 100%$ ) was reported to be the common cleaning aid for oral prophylaxis among the study population. The use of interdental aid was significantly more ( $P=0.03$ ) among females ( $n=30, 40%$ ) in comparison to males ( $n=15, 20%$ ). [Figure 2].

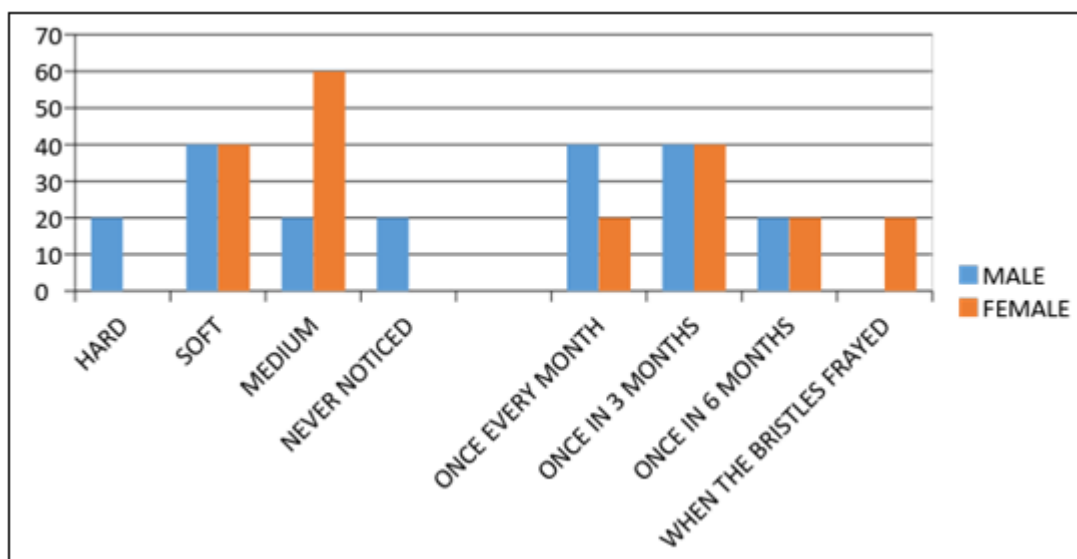


Most of the patients (n = 105, 70%) reported cleaning their teeth twice daily only. Twice daily oral hygiene practice was more common in female (n=60, 80%) compared to males (n=35,60%). There were statistically significant (P=0.03) differences between males and females with respect to the frequency of cleaning teeth. There were highly significant (P=0.01) differences between males and females with respect to the duration of cleaning teeth with most of the males cleaning their teeth for 1 to 2 minutes (n = 45, 60%) compared to females (n = 30, 40%). [Table 2]

Total		Female		Male		
%	n	%	n	%	N	
Frequency						
10	15	20	15	0	0	Once daily
70	105	80	60	60	45	Twice daily
20	30	0	0	40	30	More than twice daily
Duration						
50	75	40	30	60	45	1-2 minutes
40	60	40	30	40	30	3-5 minutes
10	15	20	15	0	0	More than 5 minutes
Technique						
10	15	20	15	0	0	Horizontal
0	0	0	0	0	0	Vertical
0	0	0	0	0	0	Circular
90	135	80	60	100	75	Combined

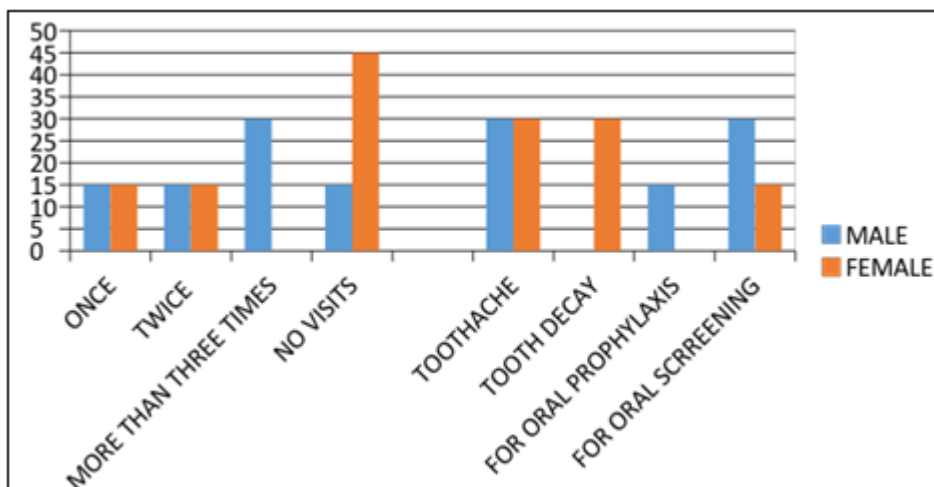
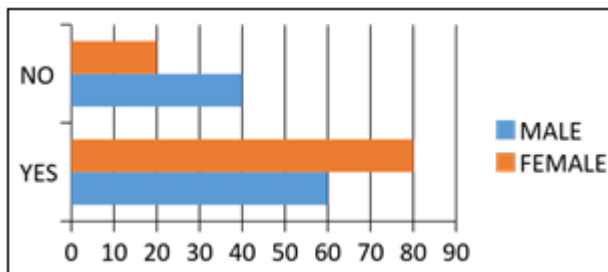
The usage of the toothbrush with soft and medium bristle was reported by a majority (n = 60, 40%) of the patients whereas a few (n=15, 10%) patients preferred toothbrush with hard bristles. There were no gender differences with respect usage of the toothbrush with soft bristles.

Most of the patients changed their toothbrush once in 3 months (n = 60, 40%). There were gender differences in relation to change of toothbrush that was statistically highly significant (P =0.00) with females (n=15, 10%) more frequently changing their toothbrush when the bristles are frayed in comparison to males (n=0, 0%). [Figure 3]



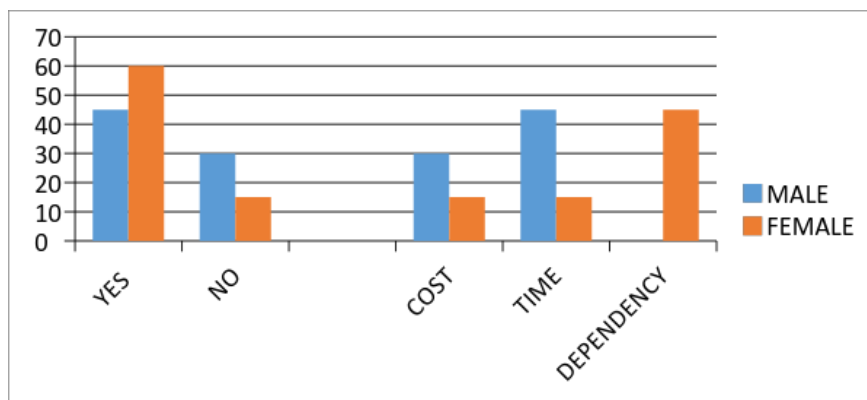
The habit of rinsing mouth after every meal was reported by (n = 105, 70%) patients with females (n = 60, 80%) rinses their mouth after meal compared to males (n = 45, 60%). As such, there were statistically significant (P=0.03) differences between males and females with respect to the habit of rinsing their mouth after every meal. [Figure 4].

A large proportion (n=60, 40%) of the patients reported not visiting a dentist since last 12 months. A majority (n = 60, 40%) of the patients visited a dentist when there is toothaches whereas (n= 45, 30%) had never visited a dentist for oral screening. [Figure 5]



Most of the patients (n =105, 70%) could not visit the dentist when they intended to. Most of them (n=60, 40%) avoided their visit to dentist due to time constraint followed by cost (n = 45, 30%) and dependence (n = 45, 30%). The females did

not visit even when they intended due to the dependency factor (n = 45, 60%) and the males due to time constraint. (n =45, 60%). [Figure 6].



#### 4. Discussion

In this study, 89% respondents believed that oral hygiene is considered to play a mandatory role in overall health of the body which was significantly higher than the study conducted by Ali et al. in Karachi (81%).<sup>[5]</sup>

All of the patients in the present study used toothpaste and toothbrush (100%) for cleaning their teeth. This result was nearly similar to that of the study conducted by Hind Al Johani,<sup>[2]</sup> in which almost all the patients (95%) used toothbrush and toothpaste to clean their teeth. However, there are studies which had found that, regular tooth brushing

appears less common among older people than the population at large.<sup>[8]</sup> This result had been found to be similar to other studies conducted in developing countries.<sup>[9]</sup> In the current world, periodontal disease and dental caries comprise an extensive public health problem in most of the countries.<sup>[10]</sup> Epidemiologic indicators of oral disease differ vastly among developed and developing countries.<sup>[11]</sup> Tooth brushing was lesser among males as compared to the females in the present study. There were statistically significant ( $P=0.03$ ) differences. This result was similar to the studies conducted by Almas et al.,<sup>[12]</sup> Tada et al.,<sup>[13]</sup> Al Omari et al.,<sup>[14]</sup> and Eldarrat.<sup>[15]</sup>

The use of interdental aids was significantly ( $P = 0.03$ ) more common among females (40%) in comparison to males (20%). The studies by Christou et al.<sup>[16]</sup> and Jackson et al.<sup>[17]</sup> have proved that by use of interdental cleaning aids, periodontal patients are able to improve oral hygiene status and control the disease and inflammation.

The frequency of the oral hygiene practices has been analyzed by several studies. Brushing twice daily was reported by 70% of the subjects in the present study. Brushing teeth once daily was reported by (10%) of the patients in the present study which was lesser than to the study conducted by Khami et al.<sup>[18]</sup> (57%), Hind Al Johani<sup>[2]</sup> (23.5%) and Almas et al.<sup>[12]</sup> (81%), Rimondini et al.<sup>[19]</sup> (91%), and Cortes et al.<sup>[20]</sup> (100%).

There was a significant ( $P=0.00$ ) difference between males and females in the routine visit for oral hygiene maintenance in the present study with 20% males and 60% females never visiting a dentist for routine oral hygiene maintenance. No regular visit to a dentist was reported by 40% of the subjects in the present study which much higher than reported by Steele et al.<sup>[21]</sup> among British (19-28%) in different age groups. Dental visit in the past 1 year was reported by 40% of the patients in the present study which was lesser than that of the studies by Behbehani et al. (49%),<sup>[22]</sup> and Al Hussani et al. (44%),<sup>[23]</sup> but Peterson et al. (37%),<sup>[24]</sup> and Hind Al Johani (13%).<sup>[5]</sup>

In the present study, it is found that the commonest reason for avoiding routine dental visit was the opinion that routine visit to the dentist was not needed.<sup>[25]</sup> Prevention and clinical care should be given the same importance by the dentist. A majority (40%) of the patients in the present study visited a dentist only when they have a toothache.

Obtaining good oral health through preventive efforts is a hallmark of the dental profession. A primary goal of preventive dentistry is to motivate the patients to practice proper oral self-care behavior. When a patient is instructed to follow an oral hygiene method, he or she will be given a target, and their task is to regulate their oral behavior to achieve it.<sup>[26]</sup> Informed public and patient are essential in the maintenance of periodontal health. Treatments will be a failure in absence of awareness of the patients and dentist on the differences between periodontal health and disease, and their role in prevention and control. Awareness of the patients and dentist on the need for the right actions is essential to

improving periodontal health.<sup>[27]</sup> Present-day oral hygiene methods, properly used and in combination with regular care, are capable of virtually preventing caries and periodontal disease and maintaining oral health. Although interdental brushes and wooden sticks can offer advantages in periodontally involved dentitions, toothbrush and floss are most preferred oral hygiene aids.<sup>[28]</sup> Patient's readiness to the periodontal treatment is essential to the success of the therapy. Lack of response to the dentist's instructions is influenced by several factors such as gender, age, and psychosocial profile.<sup>[29]</sup>

## 5. Conclusion

The efficient control of gingival inflammation obtained by means of supragingival plaque control is fundamental for the success of periodontal treatment. Also, many psychosocial and psychological characteristics influence the patient's adherence to the oral hygiene instructions.<sup>[30]</sup> The proper perception of oral health could influence adherence by showing the real importance the patient attaches to the treatment,<sup>[31]</sup> determining a high or low acceptance of the oral hygiene instructions. This is especially important in young patients, who normally present a low adherence to treatment.<sup>[32]</sup> The oral hygiene practices are a neglected area of care among the study population leading to the oral health problems. Professional plaque removal and regular follow-up combined with patient oral hygiene instructions can minimize the level of gingival inflammation and swelling.

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