



## ASSESSMENT OF ORAL HYGIENE HABITS AMONGST THE DENTAL STUDENTS OF MADHYA PRADESH – A QUESTIONNAIRE SURVEY.

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**ABSTRACT** The aim of conducting this study was to evaluate the oral hygiene attitudes amongst the budding dentists and whether progressive dental education and their understanding of preventive dental procedures will improve their commitment towards enhancement of their own oral health attitudes. For this purpose, a cross sectional study was designed for 800 dental students of Madhya Pradesh divided into Group A (first year and second year) and Group B (third year and final year) using a custom formulated objective type of questionnaire to explore their dental health attitudes and behaviour based on gender and level of dental education. The complex interplay of factors that shape attitudes and health behaviours, two major influences appear central: culturally determined attitudes/ beliefs and behaviours (social norms); and learned experiences. Gender seems to play an important role as data collected showed females belonging to both the groups to be having better self reported health attitudes in majority of investigated areas. The findings of the present study highlighted the relatively poor oral health behavior of Indian dental students, which should be improved in order to serve as a positive model for their patients, family, and friends.

**KEYWORDS :** HU-DBI, BDS curriculum, oral hygiene, attitude, behaviour, motivation

### INTRODUCTION

Hygiene refers to the set of practices associated with the prevention of illness and preservation of health and healthy living through cleanliness. The term "hygiene" is derived from hygieia, the Greek goddess of health, cleanliness and sanitation, whereas Hygienics is the science that deals with the promotion and preservation of health. Although much published research has been concerned with how to motivate the patient to follow a prescribed, effective oral health care programme, little attention has been given to the context of when and how dental students undergo motivational behavioral changes with respect to their self care regimen.<sup>1</sup> Furthermore, little is known about how the clinical training and course content influence and affect the developing oral health behavior of dental students as their understanding of preventive dental procedures will improve their commitment towards enhancing the oral health of their patients.<sup>2</sup> It is assumed that future dentist's attitude towards their oral and dental health condition is the best means to reflect if students realize the significance of these factors for general health.<sup>2</sup> Since males and females have different physiological and psychological behaviors, it is possible their oral health behavior might be different as well. Cross cultural comparison is also essential, as differences may exist regarding socio-economic status and attitude towards dental health.<sup>3,4</sup>

An important task of oral health professionals is to instill in their patients the correct oral habits to prevent oral diseases. The first step in establishing a habit is to provide relevant knowledge to the patients and to raise their awareness of how to prevent oral diseases. Also, it can be rightly said that, dental student belonging to 1<sup>st</sup> yr can be compared with the strata of society which has limited awareness/unaware about dentistry in general and oral hygiene in particular. With progressive dental education through the undergraduate curriculum, he/she develops understanding about oral hygiene and oral hygiene practices. Likewise, the students belonging to the 3<sup>rd</sup> and 4<sup>th</sup> year can be compared to the strata of educated and highly motivated subjects of society. The purpose of this study was to evaluate the oral hygiene attitudes amongst the budding dentists and whether there is any change in the oral hygiene attitude with progressive dental education and is there a need to reinforce these practices by giving additional stress in their curriculum.

### METHODOLOGY

There is no universally accepted or recommended index/ inventory to measure dental health attitude and behavior. The data that have been collected on the attitude and behavioral aspects were derived from a series of independent questionnaires. The Hiroshima University-Dental Behavioral Inventory (HU-DBI) questionnaire developed by Kawamura has been demonstrated to be useful for assessing patient's perceptions and oral health behavior and is widely used all around.<sup>5</sup>

For the present study, a custom made questionnaire that closely

resembled the Hiroshima University- Dental Behavioral Inventory (HU-DBI) of Kawamura, but our questionnaire was formulated to derive more information with regards to the habit and attitude of the subjects. These data may also help in assessing and comparing the focus of the curriculum on preventive aspects, so as to decide whether dental students should be introduced more towards philosophy and practice of preventive dentistry.

### Study population and methods

A cross sectional study of 800 dental students of Madhya Pradesh, was conducted using a specially formulated objective type of questionnaire consisting of open and close ended questions. So as to have a good representative sample of dental students in Madhya Pradesh, Dental students were randomly selected from different cities of Madhya Pradesh. There are fifteen dental colleges in Madhya Pradesh, all except one are financially supported by the private trusts and accept students from all over the country and from different socioeconomic classes. This study used the general approach in attitudes and behavior measurements to compare female and male dental students. Language of survey was chosen as English as English is the language of instruction at these dental schools.

### Selection criteria-

Students under this study were divided into two groups each containing 400 subjects

Group A – The Pre-Clinical group – consisting of 1<sup>st</sup> & 2<sup>nd</sup> B.D.S students.

Group B – The Clinical group – consisting of 3<sup>rd</sup> & 4<sup>th</sup> B.D.S students.

50 students were randomly selected from each academic year of the four different cities having Dental Colleges in Madhya Pradesh, namely

Students from Bhopal were chosen from

- 1) Mansarovar Dental College, Bhopal.
- 2) Peoples College of Dental Sciences, Bhopal.
- 3) Rishiraj College of Dental Sciences and Research Centre, Bhopal
- 4) RKDF Dental College, Bhopal

Students from Indore were chosen from

- 1). Modern dental college and research centre, Indore
- 2). Sri Aurobindo College of Dentistry, Indore
- 3). Index Institute of Dental Sciences, Indore

Students from Jabalpur were from

- 1). Hitkarini Dental College and Hospital, Jabalpur

Students from Gwalior were chosen from

- 1). Institute of Dental Education and Advance Studies, Gwalior
- 2). Maharana Pratap College of Dentistry and Research, Gwalior

i.e. 200 students from each city (50 from each academic year) took part in this survey & the data was collected over a period of 6 weeks starting from July – Mid August, 2017. Participation in the survey was voluntary and anonymity was maintained about the personal & academic record and the respondents were asked to indicate only their gender. The questionnaire consisted of 15 questions and allotted time was 10 minutes. Any question unanswered, answered inappropriately led to disqualification from results. The filled responses were then transferred to the Microsoft excel sheet and percentage or frequency analysis was performed as appropriate. Statistical analysis was not done because of the large sample size and multiple possibilities that arise with the different variables. Also, we wanted inherent message of the article to reach all and not conceal behind the complexity of statistical data.

**DISCUSSION**

Preventive activities are influenced by three factors: thoughts (beliefs, values, expectations), social environment (inter-personal interactions), and individual ability.<sup>1</sup> Moreover, to follow directions given by the dentist, patients have to believe that they are exposed to the disease, that the disease is serious and that they can gain from the dentist's efforts.<sup>6</sup> At the population level, oral cleaning habits are a matter of health-oriented lifestyle and to a lesser extent gender-related behavior and socioeconomic factors. Lifestyle has a minor influence on the dental visiting habit, which is more clearly affected by socioeconomic factors.<sup>4</sup>

**Male/ female-**

In our study, the awareness is seen more in female students regarding visiting a dentist, halitosis, color of teeth, brushing frequency and duration. Ostberg et al. found that females engage in better oral hygiene behaviors/measures, possess a greater interest in oral health and perceive their own oral health to be good to a higher degree than males. Nanakorn and kassak found female university students in northeast Thailand to have better habits in terms of tooth brushing than male students,<sup>7</sup> while Fukai et al. found that females visited their dentists and brushed their teeth more often than males.<sup>4</sup>

More males than females agreed that they put off going to the dentist until they had a toothache (57.6% versus 46.9%) in a survey conducted in Palestinian populace.<sup>8</sup> In a recent study in Israel, female dental students showed a significantly better attitude than their male colleagues. According to Verbrugge 1984, the reason for more frequent dental visits among women can be aesthetic, or women may have a greater sensitivity towards illness and discomfort, and a willingness to seek help.<sup>4</sup> whereas according to Khami, positive dental health attitudes in females can be explained on the basis that females are more concerned about their body and appearance and would tend to be visiting the dentist more often.<sup>9</sup> Tooth brushing frequency was related to a health-oriented lifestyle in both men and women, but gender difference, which was not explained with general health-orientation, still existed. Ronis (1996) found Gender to be a strong predictor of brushing frequency, Hodge et al, (1982) explained the reason for more frequent tooth brushing to be aesthetic, or caused by social norms in the case of women.<sup>4</sup>

More number of participants in group A used to visit the dentist for regular check up when compared to group B and majority group B population visited the dentist only when they had a toothache. Which was similar to the finding across the three cultures (Japan, Hong Kong and China) where more than half the students put off going to the dentist until they had a toothache.<sup>10</sup> Overall breakdown of data revealed that majority of males used to visit dental clinic only when suffering from tooth related pain whereas almost equal number in female population used to visit for regular check up and scaling and polishing purpose. This suggests that female population is more motivated and seems to be having more stable oro-dental condition making them seek a dentist for aesthetic reason only. More percentage of group B students visit a dentist for regular scaling and polishing compared to group A, this goes on to show the positive effect of dental education which makes them aware of the preventive practices but also makes them take necessary steps to improve the same (Table 1 and 2).

Our data collection also revealed that more of group B members were

worried about the color of their teeth. Here interesting fact was that the male members of group B were more concerned with the color of their teeth when compared to counterparts of group A and corresponding group B female population. In spite of this, the ratio of group B male population visiting a dentist for regular cleaning purpose stands at 9.5% which shows negligence on their part despite of them being aware of discoloration of tooth (Table 2 and 3).

**Appearance of teeth –**

A questionnaire based study conducted in Sweden (adults, 20-25 years age) showed that about 59% of the respondents were satisfied with the appearance of their teeth. Whereas, in another study 68.1% of the students were found to be concerned about appearance of their teeth<sup>1</sup> which was similar to result of study amongst dental students in Jordan i.e. 66.9%.<sup>3</sup> In the present study 69% of the students (belonging to a similar age group) were satisfied with the appearance of their teeth. Dental students were considerably conscious about the appearance of their teeth, gums and halitosis, and looked in the mirror after brushing to evaluate their oral hygiene as compared to general population.<sup>11</sup>

Almost equal number of male and female participants reported oral malodor related problems in group A. Comparatively less number of participants were suffering from self reported halitosis in group B and it was found to be more prevalent in male members (Table 4).

**Brushing frequency –**

When probed with the question on frequency of brushing, group B (65%) students were more into brushing twice a day compared to group A (52%). Here also, female members outnumbered the males in both the groups and the difference was more significant in group A. 27 students in both population groups were found to be having overzealous brushing habits (after every meal).overall 61% of our study population brushed twice a day (Table 5). Eighty-five percent of Finnish university students brushed their teeth at least once a day compared to two-thirds of Jordanian dental students who brushed their teeth two or more times a day. The brushing frequency in our sample was higher than that reported from Kuwait where only one third of students were brushing twice a day or more.<sup>3</sup>

When asked about the time duration of brushing, our study data revealed the time spent on oral hygiene measures gradually increased with the level of education. Though the time duration and frequency can't be directly related to brushing efficacy, but can be taken as a measure of concern i.e. more the time spent on brushing, more the concern and vice versa (Table 6).

Higher social status has shown to be associated with higher tooth brushing frequency or interdental cleaning habits (Hakansson 1978, Ronis 1993), However, these studies lack the influence of general lifestyle. Unhealthy lifestyle has been shown to be worse among people with a lower socioeconomic status (Aro 1986).<sup>44</sup>“Treatment not needed” and “cost” were the major barriers, prevented the students from Jordan from using dental services regularly. Cost may influence the seeking of dental care, as there is evidence that as family income increases, dental visit increases.<sup>12</sup>

**Conclusion**

Dental health behaviors were self-reported, thus they are exposed to errors. Subjects can over or underestimate their behavior. The lifestyle variables used in this study seemed to be an appropriate tool to study the orientation towards health more comprehensively. However, our study did not analyze the association of general health behavior with each dental health behavior separately. The findings of the present study highlighted the relatively poor oral health behavior of Indian dental students, which should be improved in order to serve as a positive model for their patients, family, and friends. As an incidental finding, It is also suggestive of improving dental education in India, with special emphasis on preventive aspects of dental health as the majority of the respondents were in favor of a subject on preventive aspects of dentistry from the outset of dental curriculum.

	Gp A	Gp B	Male: Female GpA	Male: Female Gp B	Overall Male/ Female
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**Table 1. Have you ever been to a dentist?**

YES	276	306	82/194	86/220	168/414
NO	124	94	58/66	34/60	92/126

Check up	106	74	10/96	20/54	30/150
Toothache	216	136	104/112	62/74	166/186
Cleaning	78	190	26/52	38/152	64/204

YES	146	232	58/168	102/130	160/298
NO	254	168	82/92	18/150	100/241

YES	132	124	48/94	46/74	90/168
NO	278	276	92/166	74/206	170/372

Once	138	84	78/60	26/58	104/108
Twice	208	262	48/160	74/188	122/348
After meals	54	54	14/40	20/34	34/47

0-2 minutes	30	58	4/26	18/40	22/66
2-5 minutes	324	262	108/216	70/192	178/408
5 or More	46	60	28/18	32/48	60/66

### References

- 1) Dagli R, Tadakamadla S, Dhanni C, Kulkarni S. Self reported dental health attitude and behavior of dental students in India. *J Oral Sci* 2008; 50(3): 267-272.
- 2) Brusokaite J, Januleviciute I, Kukleris A, Zekonis G. Evaluation of dental Health of dental Students at Kaunas university of medicine. *Stomatologija. Baltic Dent Maxillofac J* 2003; 5: 133-136.
- 3) Al-Omari QD, Hamasha AA. Gender specific oral health attitudes and behavior among dental students in Jordan. *J Contemp Dent Pract* 2005; (6)1: 107-114.
- 4) Sakki T, Knuuttila M, Anttila S. Lifestyle, gender and occupational status as determinants of dental health behavior. *J Clin Periodontol* 1998; 25: 566-570.
- 5) Kawamura M, Iwamoto Y, Wright F. A comparison of self- reported dental health attitudes and behaviour between selected Japanese and Australian students. *J Dent Edu* 1990; 61(4): 354-360.
- 6) Barker T. Role of health beliefs in patient compliance with preventive dental advice. *Community Dent Oral Epidemiol* 1994; 22: 327-330.
- 7) Ostberg A, Halling A, Lindblad U. Gender differences in knowledge, attitude, behavior and perceived oral health among adolescents. *Acta Odontol Scand* 1999; 57: 231-236.
- 8) Kateeb E. Gender-specific oral health attitudes and behaviour among dental students in Palestine. *Eastern Mediterranean Health Journal* 2010; 16(3): 329-333
- 9) Khami M. Oral health behaviour and its determinants amongst Iranian dental students. *Eur J Dent Educ* 2007; 11: 42-47.
- 10) Kawamura M, Yip H, Hu D, Komabayashi T. A cross cultural comparison of dental health attitudes and behaviour among freshman dental students in Japan, Hong Kong and West China. *Int Dent J* 2001; 51: 159-163
- 11) Komabayashi T, Kwan S, Hu D, Kajiwara K, Sasahara H, Kawamura M. A comparative study of oral health attitudes and behaviour using the Hiroshima University – Dental Behavioural Inventory (HU-DBI) between dental students in Britain and China. *J Oral Sci* 2005; 47: 1-7
- 12) Taani Q. Periodontal awareness and knowledge, and pattern of dental attendance among adults in Jordan. *Int Dent J.* 2002; 52: 94-98