

## ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES OF ADJUNCTIVE ORAL HYGIENE AIDS EXCEPT BRUSHING AMONG MEDICAL AND DENTAL STUDENTS IN UCMS, NEPAL

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### ABSTRACT

### INTRODUCTION

Periodontal disease is a bacterial infection that affects tissues that support the teeth and bacterial plaque is the primary cause of this disease. In the interdental spaces, periodontal disorders are more common as a result, removing plaque from these regions is critical. This can be managed by using various interdental cleaning aids such as dental floss, interdental brushes, and chemical agents such as mouth washes. Thus, the aim of our study is to assess the knowledge of other oral hygiene aids except brushing among medical and dental students in a Teaching hospital. This is a knowledge, attitude, and practices model of analyzing the knowledge of adjunctive oral hygiene aids performance and measures other than tooth brushing among medical and dental students.

### MATERIAL AND METHODS

A Knowledge, Attitude and Practices (KAP) survey was designed for the present cross-sectional study which was conducted for a period of three months from July 2021 to September 2021 among a sample of 275 medical and dental undergraduates in a Teaching hospital. Pre-tested structured 22-item closed-ended questionnaire was given to each on survey tool and the link was passed to the participants. Statistical analysis was done using SPSS (version 21.0) software.

### RESULTS

The response rate for the present survey was 98.9% (272 participants). It was seen that, 29.78% participants reported that poor oral hygiene is the main cause of bleeding and 59.19% believed that poor oral hygiene is responsible for bad breath. A total of 65.81% reported that most widely recommended interdental aid to be used is dental floss. On gender wise comparison, significant positive response ( $p < 0.05$ ) was seen among females for items (2,6,11) as compared to males. On stream wise comparison, significant positive response ( $p < 0.05$ ) was seen among dentists for items (16,17,20) as compared to medical students.

### CONCLUSION

The study concluded that dental and medical students must be encouraged to be good role models in practicing as well as promoting oral health for their patients, families, friends and ultimately the society.

### KEYWORDS

Knowledge, Oral health, Oral hygiene, Periodontal health

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## INTRODUCTION

Oral diseases are prevalent worldwide especially periodontitis with an age standardised prevalence of 11.2%.<sup>1-3</sup> It is the most common oral disease worldwide causing significant burden to global economies and people's health, considerably reducing the quality of life of those affected.<sup>4-7</sup> The accumulation of dental plaque and calculus is usually caused by improper toothbrushing techniques, failure to carry out interdental cleaning and irregular dental visits. This accumulation predictably results in gingival inflammation. Persistent gingivitis is a key risk predictor for the breakdown of periodontal attachment.<sup>8-12</sup>

A person's oral health has a significant role in their overall health, which affects their general quality of life and well-being.<sup>11</sup> According to the World Oral Health Report 2003, India has an 86 percent prevalence of periodontitis. In India, oral health has long been overlooked.<sup>12</sup> With more knowledge and better habits, dental health can be improved.

A knowledge, attitude and practices (KAP) survey is a quantitative approach that offers access to both quantitative and qualitative data (predefined questions presented in standardised questionnaires). KAP survey is based on the "declarative" and effectively registers a "opinion" (i.e., statements). The study reveals what people stated, but there could be big discrepancies between what people say and what they actually do.<sup>13</sup> The KAP study reveals what people know, how they feel, and even how they behave. In this context, oral hygiene, the information that a society possesses refers to their comprehension of any particular issue. An individual's attitude is a quality that they acquire over time. People's attitudes toward dental care and dentists vary greatly.<sup>13</sup> These attitudes, which have a significant impact on the oral cavity's health, naturally reflect the individuals' experiences, cultural perspectives, familial beliefs, and other circumstances. Practice is the manner in which people show their attitude and level of understanding through their deeds.<sup>13</sup>

The attitude of a population toward their dentition is one of the most crucial elements that determines the oral health of that group. Both the dentist and the patient must work together to maintain a healthy oral profile. Student's attitudes and behaviours regarding oral health are consistent with the expectations of the general public since they play a significant role in the promotion of health and the spread of preventative knowledge among their family and community.<sup>13</sup> Young medical students, who are in high demand, are not exposed to the same health-care information as dentistry practitioners.<sup>11</sup>

Understanding the KAP levels will make the process of raising awareness more effective since it will make it possible to better tailor the programme to the requirements of the community. Many studies have been performed regarding oral health behaviour. However, no global consensus has yet been established. Dental and medical students should have proper knowledge, attitude, and practice of oral hygiene measures since they play such an important role in health promotion and disease prevention.

Hence forth, the present study was designed to assess the

knowledge of other oral hygiene aids except brushing among medical and dental students in a Teaching Hospital.

## MATERIAL AND METHODS

A total of 275 medical and dental students studying in Universal College of Medical Sciences, Bhairahawa, Nepal were selected for participation in the study from July 2021 to September 2021. This was a hospital based, observational cross-sectional study. The institutional review committee (IRC) gave its approval with reference number UCMS/IRS/052/21.

Informed consent was taken from all the participants. They were invited to take part in the survey via an internet link sent in their respective email and were included in the results. The Checklist for Reporting Results of Internet E-Surveys (CHERRIES)<sup>14</sup> Cherries Checklist was used to conduct the current cross-sectional questionnaire-based survey among the medical and dental students. Pre-testing and questionnaire's face validity was carried out by distributing it to 20 interns at the institution, who made some changes and measured the time it took to complete the questionnaire.

A prefabricated validity tested questionnaire consisting of 22 questions was finally devised. Reliability was assessed by test-retest method (Cronbach's  $\alpha = 0.704$ ). The sample size was calculated using the formula:  $N = Z^2 p(1-p) / d^2$ ; where, N = sample size, p = prevalence of frequency of using interdental aids, d = absolute precision. Thus, minimum sample size obtained to conduct this study was 252.39. Taking 10% non-response rate, a sample size of 275 was fixed for the present study. The final analysis was done on 272 complete questionnaire responses (98.9% response rate).

The self-administered questionnaire was used to collect data on a specially designed proforma. All data was collected and stored securely, and participant's confidentiality was maintained.

The questionnaire had Knowledge section (q1-q12), and practice section (q13-q22). The scores were dichotomized into "0" and "1" for incorrect and correct response with 0-12 knowledge score scale and 0 to 10 practice score scale.

Statistical analysis data was done using SPSS for windows, version 21, with two-tailed  $p < 0.05$  considered to indicate statistical significance. Frequency distribution was used for descriptive analysis. Chi square test was used for categorical comparison.

## RESULTS

The final analysis was done on 272 complete questionnaire responses (98.9% response rate). There were 44.5% males and 55.5% females, with subjects belonging to 17-21 years' age group. The maximum participants were dental students, 76%. The overall response rate of the participants for knowledge questions has been depicted in Table 1.

**Table 1. Knowledge and attitude of other oral hygiene aids except brushing among participants**

Questions Related To Knowledge		N	%	Score
1. Cause Of Bleeding?	A) Vit C Deficiency	156	57.35	1
	B) Poor Oral Hygiene	81	29.78	
	C) Injury To Gums	35	12.87	
2. Cause Of Bad Breath?	A) Smoking	89	32.72	1
	B) Poor Oral Hygiene	161	59.19	
	C) Lung Disease	13	4.78	
	D) Onion Garlic Food Product	9	3.31	
3. Bleeding Gums Related To General Health?	A) Yes	205	75.37	1
	B) No	45	16.54	
	C) No Idea	22	8.09	
4. Most Widely Recommended Inter Dental Cleaning?	A) Dental Floss	179	65.81	1
	B) Inter Dental Brush	69	25.37	
	C) Tooth Picks	18	6.62	
	D) No Idea	6	2.21	
5. Interdental Cleaning Method For Intact Papillae?	A) Dental Floss	121	44.49	1
	B) Inter Dental Brush	67	24.63	
	C) Single Tufted Brush	45	16.54	
	D) No Idea	39	14.34	
6. Interdental Cleaning Method For Moderate Papillae?	A) Dental Floss	52	19.12	1
	B) Inter Dental Brush	67	24.63	
	C) Single Tufted Brush	83	30.51	
	D) No Idea	70	25.74	
7. Do You Think Oral Health Is Important For Overall Health?	A) Yes	256	94.12	1
	B) No	16		
8. Toothbrushing Alone Can Accomplish Plaque Removal?	A) Yes	90	33.09	1
	B) No	182	66.91	
9. Interdental Cleaning Is Important For Good Gingival And Periodontal Health?	A) Yes	253	93.01	1
	B) No	19	6.99	
10. Patient Compliance Is Needed For Using Interdental Cleaning?	A) Yes	201	73.90	1
	B) No	71	26.10	
11. Do you think floss Induced Injury outnumbers ?	A) Yes	122	44.85	1
	B) No	150	55.15	

12. Apart From Brushing What Other Methods Are Used To Clean Teeth?	A) Dental Floss	128	47.06	1
	B) Interdental Brush	43	15.81	
	C) Tooth Picks	25	9.19	
	D) None	76	27.94	
13. Motivating Patients Regarding The Use Of Inter Proximal Cleaning Aid Has Positive Impact In Dental Practice?	A) Yes	258	94.85	1
	B) No	14	5.15	
14. Will You Stop Flossing If Your Gums Bleed After / During Flossing?	A) Yes	205	75.37	1
	B) No	67	24.63	
15. How Do You Clean Your Teeth?	A) Tooth Brush	266	97.79	1
	B) Any Other Tool	6	2.21	
16. Do You Think Interdental Plaque Control Is An Essential Component To Complete Patient Self Care Program?	A) Yes	246	90.44	1
	B) No	26	9.56	
17. Do You Use Dental Hygiene Aid?	A) Yes	179	65.81	1
	B) No	93	34.19	
18. Do You Give Importance To Cleaning Tongue As Well As Brushing?	A) Yes	250	91.91	1
	B) No	22	8.09	
19. Do You Rinse Your Mouth After Eating?	A) Yes	258	94.85	1
	B) No	14	5.15	
20. How often do you use mouthwash?	A) Never	70	25.74	1
	B) Once A Week	65	23.90	
	C) Once A Dar For Two Weeks	36	13.24	
	D) As Prescribed By Dentist	101	37.13	
21. How often you visit your dentist for dental checkup ?	A) In 3 Months	54	19.85	1
	B) In 6 Months	52	19.12	
	C) Once A Year	63	23.16	
	D) Never Visit	103	37.87	
22. Do you advise interdental cleaning go your Patients?	A) Yes	250	91.91	1
	B)			
	C) No	22	8.09	

**Table 2. Gender wise frequency related to knowledge and practice.**

	Good n (%)	Fair n (%)	Poor n (%)	p value	mean ± SD	Mode
Knowledge Scores (0-12)	10-12	9-6	≤ 5			
Male(N=121)	42 (34.7%)	73 (60.3%)	6 (4.9%)	0.049*	8.56 ± 11.12	8
Female (N=151)	99 (65.5%)	38 (25.1%)	14 (9.2%)		10.04 ± 12.29	10
Practice Scores (0-10)	8-10	5-7	≤ 4			
Male (N=121)	37 (30.3%)	66 (54.5%)	18 (14.8%)	0.041*	6.17 ± 4.88	6
Female (N=151)	103 (68.2%)	35 (23.1%)	13 (8.6%)		9.45 ± 5.64	8

Chi square test, level of significance set at  $p < 0.05$

\*Statistically significant

It was seen that, 57.35% participants reported that Vitamin C deficiency is the main cause of bleeding and 59.19% believed that poor oral hygiene is responsible for bad breath. A total of 65.81% reported that most widely recommended interdental aid to be used is flossing but they had less awareness about its indication. It was seen that 91.91% reported that they advise their patients to use interdental cleaning. On gender wise comparison, significant positive response ( $P < 0.05$ ) was seen among females for items (2,6,11) as compared to males. On stream wise comparison, significant positive response ( $P < 0.05$ ) was seen among dentists for items (16,17,20) as compared to medical students.

## DISCUSSION

The purpose of this study was to assess the knowledge of other oral hygiene aids except brushing among medical and dental student. Plaque removal by a professional and frequent follow-up, as well as patient oral hygiene instructions leads to maintain good periodontal health. Periodontal disease can be prevented by practicing good oral hygiene and seeing a dentist on a regular basis.<sup>15</sup>

Periodontitis and medical professionals are becoming increasingly linked. The medical community is becoming increasingly aware of the importance of oral disease prevention.

The medical profession's patient approach to systemic health has a more persuasive effect than a dentist. It is critical that medical practitioners begin to address the need for appropriate dental care, and that oral hygiene aids play a vital part in periodontal medicine prevention efforts. Given the relevance of periodontal infection in affecting systemic health, it is now necessary to examine medical population understanding of dental disorders, preventive measures, and tools used to treat them. As a result, this research was undertaken to throw some light in this direction.<sup>16,17</sup> These responses clearly indicate that health professionals do not have a good understanding of interdental aids and how to use them.

In the present study, the medical undergraduates in general were found to have a basic understanding of what interdental aids are, but not enough understanding of how to use them.

Similar findings have been reported by Vandana et al (2015),<sup>10</sup> where they mentioned that oral hygiene measures involving interdental aids are not common among medical undergraduates.

Generally, mechanical plaque controlled by twice-daily tooth brushing with a fluoride containing dentifrice is an accepted recommendation. The proper duration of tooth brushing is an important determinant of plaque removal. Because the brush cannot reach the interdental regions of the teeth, a portion of the dentition remains uncleaned. Dental floss is used to clear the bacteria from between the teeth. In the present study, 91.91% agreed that interdental plaque control is an essential component to complete patient self-care program, however 35.5% reported of not using dental aid in their daily routine.<sup>14</sup>

Another important finding seen in the present study was regarding the use of dental floss. Around 49.5% students reported that harms of using dental floss outweigh its benefits. The current data highlights that dental floss as a tool for removal of interdental plaque requires the user to be instructed about specific skills to be more effective. The appropriate transfer of information and motivation to use dental floss can change the attitude of the patient from an unhealthy approach to a healthy approach.

In the present study, female students showed significant difference in knowledge and practice scores regarding interdental aids. These findings are like that reported by Ahamed et al.<sup>19</sup>, Al-Omari et al.<sup>20</sup> and Sharda et al.<sup>21</sup>. These findings reinforce the finding that females undergraduates give more attention towards strengthening oral hygiene measures among their patients.

Students play a critical role in health promotion and the spread of preventive information to their families and communities. It is critical for professional (dental) students to have proper oral health knowledge, attitude, and practice because they specialize in preventive information and health promotion. Furthermore, medical students are significantly more likely than dentistry students to encounter underserved and vulnerable communities. They should be well-versed in oral health so that they can provide the necessary oral health education and, if necessary, refer patients to a dental surgeon. As a result, dental and medical practitioners must work together to address oral health issues and oral health care should be incorporated into overall health-promoting plans and practices.

The shortcoming of this study was that it was an observational study for a short period in only one dental college. A comparative study with students exposed to varied clinical settings would have given a broader glimpse of actual scenario of knowledge and oral hygiene aids.

## CONCLUSION

The study concluded that dental and medical students must be encouraged to be good role models in practicing as well as promoting oral health for their patients, families, friends and ultimately the society. Furthermore, this will assist medical and dental undergraduates to educate, inspire and assess their patients' impressions on a regular basis in order to improve oral health behaviours.

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