

Knowledge and Practice Towards Use of Mouthwash Among Dental Practitioners in Chitwan

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ABSTRACT



Background: Good oral hygiene has always been an important aspect of total health care. Mouthwashes are chemical formulations used as an adjunct to effectively eliminate the dental plaque. Dental practitioners play a major role in maintenance of good oral hygiene, their opinion over the knowledge, attitude, and practice regarding prescribing mouthwashes is of greater value and significance. The main objective of the study was to assess the dental practitioner's knowledge of mouthwashes and practice of using mouthwash in Chitwan.

Methods: A cross-sectional study was undertaken among the dental practitioners in Chitwan using a self-administered questionnaire. A total 140 completely filled questionnaires were included in the study. The results were analyzed for descriptive statistics (frequency and percentages) using the SPSS software.

Results: Among the 140 participants, majority of them 98(70%) were female. Regarding brands of mouthwash, 40.8 % and 29.3% of the dental practitioners were aware of Chlorhexidine and Listerine mouthwash respectively. Majority of the dental practitioners agreed that mouthwash leave behind extrinsic stains and supragingival calculus.

Conclusions: The present study revealed that the dental practitioners have adequate knowledge and excellent practice of using mouthwash. With time the dental practitioners should keep themselves updated.

Keywords: Dental practitioners, Knowledge, Mouthwash, Practice

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INTRODUCTION

Dental plaque is the main factor for the establishment of dental caries, gingivitis and periodontitis. Studies have also confirmed a strong correlation between the dental plaque and periodontal disease.^{1,2} The mainstay of periodontal therapy is complete elimination of bacterial plaque and preventing its formation and accumulation from the tooth surfaces³, which in turn prevents further progression of dental caries and periodontal disease.

The mechanical disruption of the biofilm is thus achieved either by surgical or non-surgical methods. Chemical plaque control with the help of mouthwashes have also been used as an adjunct to periodontal therapy.^{1,3} Many people brush their teeth inadequately, especially in the posterior teeth, leaving behind uncleaned areas. In such instance mouthwashes have also played a great role as an adjunct to mechanical method for preventing and treating periodontal disease. Mouthwash, used as antiseptic and anti-plaque agent⁴, remain in oral cavity for a long duration of time for their continued activity.

Dental practitioners have a major role in the maintenance of good oral hygiene. With time, dentists need to have knowledge regarding recent advancement about the mouthwashes and their practice. Therefore, this study was aimed to assess the knowledge and practice towards the use of mouthwash among the dental practitioners in Chitwan.

MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted among the dental practitioners in Chitwan, Nepal from February 2020 to June 2020. A convenience sampling method was used to collect the data from the dental practitioners in Chitwan. A self-administered questionnaire was used to collect information on the knowledge and practice towards mouthwashes. Due to COVID-19 pandemic, two methods of data collection were

employed: using google forms and those who were accessible were provided with printed questionnaires. The questionnaires that were completely filled and only the dental practitioners from Chitwan, who consented to participate were included in the study. Anonymity and confidentiality of the data was assured among the study participants. The questionnaire was given to a total of 155 dental practitioners of Chitwan among whom only 142 undertook the survey. However, incompletely filled questionnaire were removed so the final number of participants was 140.

The questionnaires were adopted from previous studies³⁻⁶ and modified after consultation with experts associated with the field. The questionnaire was pretested among the 30 dental practitioners in other districts of Nepal. The questionnaire consisted of three parts; sociodemographic details, 11 questions related to knowledge and 8 questions related to practice regarding mouthwash.

Ethical approval was obtained from the hospital review board to commence the survey and informed written consent was taken, and the information in the questionnaires were treated with utmost confidentiality. Once the participants completed filling the survey, all the data were compiled for statistical analysis.

The study was approved by Institutional review committee of Chitwan Medical College (Ref No. CMC-IRC/076/077-133). The obtained data was entered into Statistical Package of Social Science (SPSS) version 16 and analyzed using descriptive statistics (mean, standard deviation frequency and percentage).

RESULTS

In this study, a total of 140 people participated, out of which total of 42 (30%) were male and 98 (70%) were female. The mean age of the participants was 27.44 ± 4.36 years (Table 1).

Regarding brands of mouthwash, 40.8 % of the dental practitioners were aware of Chlorhexidine mouthwash, 29.3% of the participants were aware of Listerine mouthwash (Figure 1).

7-10 years	20	14.3
>10 years	2	1.4

Table 1: Socio-demographic characteristics of the participants

Variables	Frequency	Percentage
Sex		
Male	42	30.0
Female	98	70.0
Age (Mean±SD)	27.44±4.36, Min=22 yrs, Max=40 yrs	
Type of practice		
Government hospital	6	4.3
Private practice	51	36.4
Teaching institution	83	59.3
Qualification		
BDS	107	76.4
Specialist	33	23.6
Years of practice		
1-3 years	95	67.9
4-6 years	23	16.4

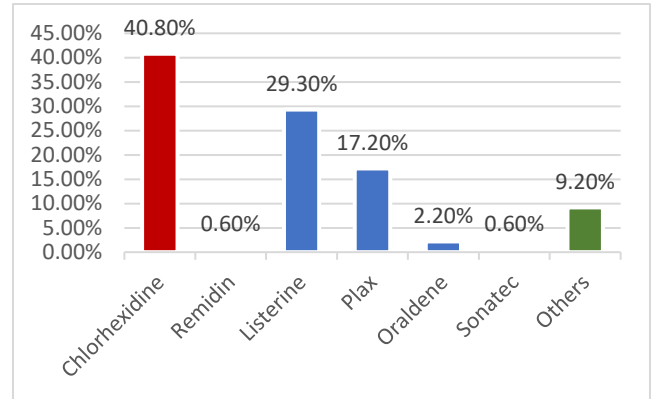


Figure 1: Knowledge about the brands of mouthwash

From the data collected, the dental practitioners knew that mouthwashes were prescribed for the following conditions gingivitis (23%) followed by halitosis (20%), periodontitis (17.8%) and 9.5% for all conditions (Figure 2).

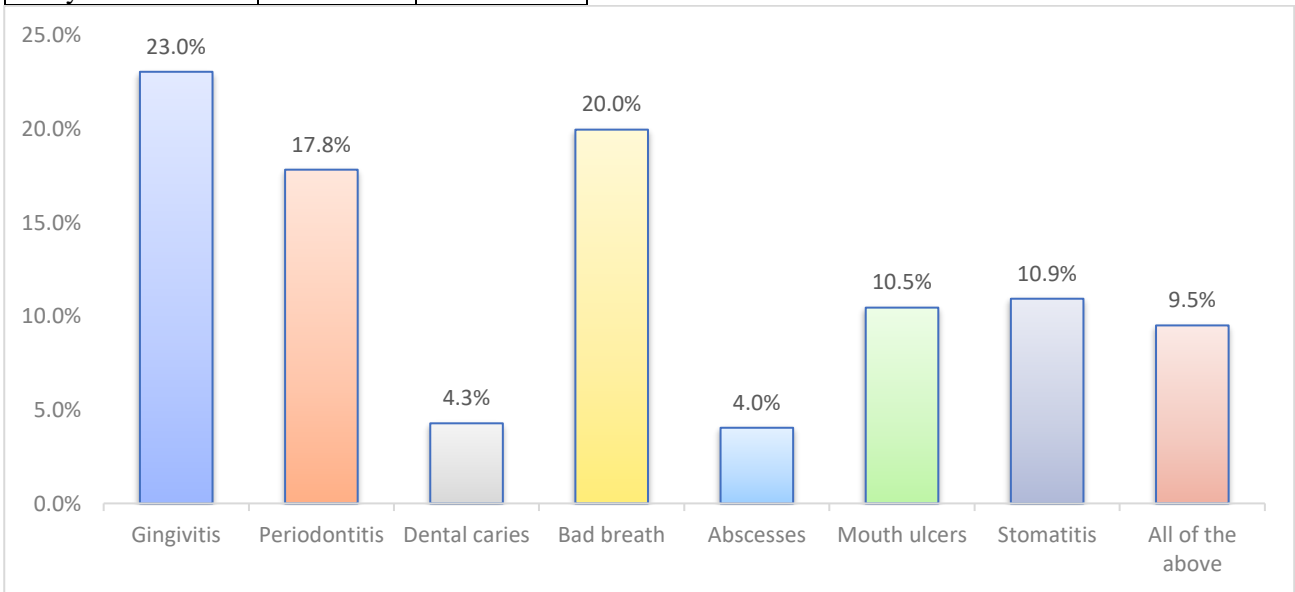


Figure 2: Knowledge about the role of mouthwash

About 81 (57.9 %) of participants reported the taste of mouthwash as bitter, while 15 (10.7%) said it was tasteless. More than half (78) of the participants reported that chlorhexidine does not cause allergic reactions. While 68 (48.6%) agreed it to leave extrinsic stains, 62 (44.3%) said mouthwash cause both extrinsic stains and supragingival calculus (Table 2).

Table 2: Knowledge on mouthwash among the dental practitioners

Knowledge Questionnaires		Frequency	Percentage
The taste of mouthwash is	Sugary	33	23.6

	Salty	11	7.9
	Bitter	81	57.9
	Tasteless	15	10.7
Oral rinsing of chlorhexidine	Causes allergic reactions	33	23.6
	Does not cause allergic reactions	78	55.7
	Do not know	29	20.7
Mouthwash	Leave extrinsic stains on the tooth surface and tongue	68	48.6
	Cause supragingival calculus	1	.7
	Both a and b	62	44.3
	Do not know	9	6.4

More than 80% of the practitioners agreed that they advise their patients to use mouth wash twice a day. About 134 (95.7%) used mouthwash after brushing with 65 (46.4%) of participants agreed to keep the time difference between brushing and use of mouthwash as 1 hour. Likewise, 80% of the participants dilute the mouthwash while using it (Table 3).

Table 3: Practice towards the use of mouthwash among the dental practitioners

Practice Questionnaires		Frequency	Percentage
How many times per day do you advise your patient to use the mouthwash?	Once	21	15.0
	Twice	116	82.9
	Thrice	2	1.4
	Others	1	.7
When do you use a mouthwash?	Before brushing	3	2.1
	During brushing	1	.7
	After brushing	134	95.7
	Others	2	1.4
How frequently do you use mouthwash?	Daily	48	34.3
	Less than once a week	41	29.3
	Once a week	17	12.1
	Twice a week	22	15.7
	Three times a week	12	8.6
How long do you keep it in the mouth?	A few seconds (Less than 20 s)	97	69.3
	Longer (>20 s)	43	30.7
Do you dilute the mouthwash?	Yes	112	80.0
	No	28	20.0
	No time interval	11	7.9

What is the time interval you keep between brushing teeth and use of mouthwash?	Less than 1 min	17	12.1
	About 5 min	46	32.9
	About 1 hr	65	46.4
	About 2 hr	1	.7
How long did the taste remain in the mouth after rinsing?	Less than 15 mins	68	48.6
	16-30 mins	57	40.7
	31-45 mins	8	5.7
	46 min-1 hr	6	4.3
	More than 1 hr	1	.7

Two third of participants 95 (67.9%) had average level of knowledge on mouthwash while more than half 77 (55%) of the participants had excellent level of practice towards the use of mouthwash (Table 4).

Table 4: Participants score on knowledge and practice towards the use of mouthwash

Score		Frequency	Percent
Knowledge	Excellent Knowledge	45	32.1
	Average Knowledge	95	67.9
Practice	Excellent Knowledge	77	55.0
	Average Knowledge	63	45.0

DISCUSSION

This study was conducted among the dental practitioners of Chitwan to assess the knowledge and practice of use of mouthwash among them. In total the questionnaire was sent to 155 dental practitioners of Chitwan out of which 140 returned the completely filled questionnaire (response rate 90.32 %). Among the 40 dental practitioners participating in this study 98(70%) were female and 42(30%) were male. The reason could simply be there are generally more female enrolled than males in the field of dentistry in Nepal.^{7,8} The present study showed more than 59% of the dental practitioners were attached to institutional practice; which may be due to the fact that there are two dental colleges located in Chitwan.

Proper oral hygiene is required in order to avoid the formation of dental plaque and its unnecessary consequences such as gingivitis and periodontitis.⁹ Toothbrushes have been used from a long time to remove supragingival plaque and the use of interdental brush aided to remove the plaque present in the interdental regions of the teeth. Mouthwash are chemical agents used popularly as

oral rinse. The rationale behind the use of mouthwash is to supplement the mechanical means of cleaning the teeth,¹⁰ to reduce the accumulation of biofilms on soft tissue surfaces of the oral cavity, potentially delaying plaque accumulation on teeth.¹¹ Among the various types of mouthwashes available, 40.8% of the total dental practitioners enlisted Chlorhexidine as the brand most aware of, followed by Listerine for 29.3% and Plax with 17.2%. While in a similar type of study, Benjamin et al reported that 41% of the respondents used Betadine mouthwash, 36% of the respondents used Listerine mouthwash.⁴ This may be due to the differences between availability of the brands in the different geographic setting.

Mouthwashes have been used widely in various dental and medical conditions.¹² Regarding the usage of mouthwash for different dental disease situations 23%, 20% and 17.8% answered that mouthwash can be used for gingivitis, bad breath and periodontitis respectively. Although differences in the disease situations were found among few studies^{3,13}, the differences may only be

the subjective variation of reporting among the dental practitioners.

Due to their many indications, mouthwashes are starting to assume an important role in daily oral care routine. The regular use of the mouthwash is associated with some side effects. The risk of developing pre-diabetes/diabetes was reported in a study due to frequently regular use of mouthwash.¹⁴ It has been also associated with extrinsic staining and calculus formation.^{15,16} In the present study, almost half of the respondents (48.6%) agreed on mouthwash leaving extrinsic stains on tooth surface and tongue. This was in line with the findings of Niveda et al.³ In contrast to our findings only 10% of participants reported that mouthwash causes staining of teeth. This may be due to the differences between the sample size of the study as the former study was performed on similar sample size while the later one was done on only 40 participants which also had differences on the acquisition of knowledge as they were dental students on varying level of academic years.

Chlorhexidine is commonly used mouthwash in Nepal. It has broad spectrum antibacterial activity with long lasting effect.¹⁷ Vitro study showed significant reduction of colony-forming units due to Chlorhexidine.¹² Differences in the view of chlorhexidine mouthwash was reported by the dental practitioners in our study. There were also difference in opinions regarding the taste of mouthwash as 57.9% of the participants reported it to be bitter in taste and 10.7% said it to be tasteless. Generally, patients do not follow physician's recommendation. Recently it was reported most of

patients do not gargle at all according to the recommendation.¹⁸ In a study performed by Niveda et al nearly 74.7% of the dentist encourage and prescribe mouthwash twice a day.³ In this study too, more than three-fourth of dental practitioners (82.9%) prefer advising twice a day for the use of mouthwash. Majority (95.7%) of the participants, answered that they use mouthwash after brushing which was in accordance with the studies done by Shahid Mitha et al.⁵

The limitation of this study was that it was carried out in localized region of Nepal and among dental practitioners, so the results of the study cannot be generalized. The study cannot deny the presence of response and information bias. On the other hand, studies related to herbal mouthwash have shown good results¹⁹⁻²², however, this study did not have any questions related to herbal mouthwash which was the necessity of the present day too.

CONCLUSION

From the findings of the study, it can be concluded that in general, the dental practitioners have adequate and excellent knowledge level. More than half have shown to have excellent practice towards the use of mouthwash. However, it is prudent for the dental practitioners to fill the knowledge gap associated with the mouthwash with more updated information. Education seminars and conferences may play a vital role in such circumstances.

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