ORIGINAL ARTICLE

DOI:10.33897/fujd.v3i1.340

Assessment of Knowledge, Awareness and Practice Related to the Use of Interdental Aids among Dental Patients of Lahore, Pakistan

Sadia Shakeel[1], Tayyaba Nayab Shahid[2], Lubna Yousaf[3], Adnan Hafeez[4], Shehryar Awan[5], Ghulam Mohammad Paracha[6], Ayesha Fahim[7]

Received: 16 Nov 2022 / Revised: 12 Dec 2022 / Accepted: 12 Dec 2022 / Published Online: 20 Jan 2023

ABSTRACT

Objective: Daily use of Interdental cleansing aids and annual or biannual dental checkups by dentists are two effective means of maintaining good oral health. The present study was conducted to assess the awareness and practice of interdental aids among the patients of various dental hospitals in Lahore Pakistan.

Materials and Methods: A cross-sectional study was conducted among dental patients in Lahore. The structured, self-administered questionnaire was designed to collect data that comprised 14 questions. Statistical analysis was done using SPSS 23.

Results: In this study, out of the 244 participants 92.62% of the subjects used toothbrushes and toothpaste to brush their teeth. Most of the patients were aware of different interdental aids, but 54.92% of them never used them in their daily routines.

Conclusion: The study participant's overall knowledge, attitude and practice regarding oral hygiene aids were seen at an average level therefore there is a need to increase the awareness and knowledge of interdental aids among the general public to improve their oral health status.

Keywords: Interdental Cleansing Aids, Oral Prophylaxis, Dentist, Oral Health

[1,2]Assistant Professor, [7]Associate Professor and Head, Department of Oral Biology & Tooth Morphology, Dental Section, University College of Medicine & Dentistry, University of Lahore, Lahore, Pakistan

[3]Demonstrator, Department of Community Dentistry, [5]Demonstrator, Department of Pathology, [6]Demonstrator, Department of Oral and Maxillofacial Surgery, Azra Naheed Dental College, Superior University, Lahore, Pakistan.

[4]Assistant Professor, Department of Prosthodontics, Frontier Medical and Dental College, Bahria University, Abbottabad, Pakistan.

Corresponding author:

Ayesha Fahim, Dental Section, University College of Medicine & Dentistry, University of Lahore, Pakistan.
Email: ayeshafahim.af@gmail.com

How to cite this Article:

Shakeel S, Nayab T, Yousaf L, Hafeez A, Awan S, Paracha GM, Fahim A. Assessment of Knowledge, Awareness and Practice Related to the Use of Interdental Aids among Dental Patients of Lahore, Pakistan. Found Univ J Dent. 2023;3(1):28-35

INTRODUCTION

The most prevalent oral diseases are periodontitis and dental caries. Dental caries is an oral infectious disease which results in the demineralization of the tooth surface. Periodontal disease is a family of chronic inflammatory conditions affecting the supporting structures of teeth.[1] The key etiological factor for dental caries and periodontal disease is plaque and calculus. Dental plaque is an example of a biofilm in which a combination of bacteria is embedded in a matrix of salivary proteins and bacterial products.[2] Hence, maintenance of oral hygiene by removing bacterial

DOI:10.33897/fujd.v3i1.340

plaque is critical for preventive dentistry.[3]

Oral hygiene measures include proper brushing technique, use of interdental aids, and regular dental visits.[4] Tooth brushing is an effective methodology for facial and lingual surfaces however its efficacy is minimal in interproximal space. The interdental areas also known as interproximal space are filled by interdental gingiva below the contact point of adjacent teeth. This site is most prone to plaque accumulation because of the inability of the toothbrush to reach below-tight contact areas subsequently leading to gingival inflammation, periodontal disease and dental caries. Therefore, multiple mechanical tools are required to control residual plaque because tooth brushing alone is insufficient.[5]

Various interdental cleaning aids are used such as interdental brushes, dental floss and tapes, mouthwashes, water flossers and wooden stick.[6] Dental floss is a cord that is most beneficial for normal interdental space and tight contacts with the ability to remove 80% of plaque buildup from interproximal spaces.[7] Dental floss is reported as the most effective methodology for plaque removal in areas.[8] Both American and British dental associations have recommended the daily use of dental floss, but lack of knowledge, time and cost are reasons for refraining from its practice.[9] Interdental brushes have a handle with many bristles on steel wire and preferred choice by the patients because of their convenience to use.[10] Wood sticks are softwoods in different shapes to adapt to the interdental space whereas Oral irrigators are used to remove soft debris using a mechanical jet of water.[11] Hence, the cleaning of interdental space depends on the selection of tools, techniques and skills of a person carrying out the task. Moreover, they are time-consuming and require comprehension of the particular procedure. The practice of various interdental aids reflects an individual's oral health experiences, familial beliefs and cultural perspectives.[12] Furthermore, the attitude of an individual towards their oral profile determines its oral health. Previously conducted research was done in European and American countries with educated pupils. The data regarding patient knowledge and perception about interdental aids in poor countries with illiterate communities is scarce. Therefore, this study aims to evaluate the awareness and practice of interdental cleansing aids among dental patients of Lahore.

MATERIALS AND METHODS

A cross-sectional study was conducted among dental patients in different hospitals of Lahore from June 2022 to August 2022 to assess the understanding and utilization of interdental cleaning aids in the prevention of plaque with subsequently associated diseases. The study questionnaire consisted of 14 questions of which the first four were related to demographic data, six were asked to assess the concept/awareness and four were regarding the knowledge of interdental aids and their practice. A total of 244 participants responded to the questionnaire. Informed consent was obtained from each participant. Ethical approval was taken from the University College of Dentistry, University of Lahore. Patients aged 15-70 years either gender coming for dental treatment to the different dental hospitals of Lahore were included in this study. For children less than 15 years and special health care need patients, incomplete surveys were excluded from the study.

A self-administered, anonymous validated questionnaire was used for the collection of data. It included four questions related to the demographic data (age, gender, and educational status), six questions regarding the awareness of interdental aids, and four questions about the use of interdental aids. Educational status was classified as uneducated, high school, bachelor and master. For the questions related to knowledge, the responses collected were agree, disagree, and don't know and regarding utilization of interdental aids, responses consisted of 'yes' or 'no'.

An electronic copy of the questionnaire was prepared in English language using Google forms (Alphabet Inc., Mountain View, CA, USA). A short electronic link was created and distributed through WhatsApp). Statistical analyses were carried out using the SPSS 23 software. Qualitative variables were presented with frequency and per cent. A Chi-square test was applied to see the association between qualitative variables and a $p < 0.05$ was considered statistically significant.

RESULTS

A total of 244 participants (n=244) filled out the questionnaire. The distribution of participants according to age was 52.5% of age 15-29 years, 35.7% were between 30-54 years and 11.9% were 55-70 old.

DOI:10.33897/fujd.v3i1.340

According to gender, 61.5% were male and 38.5% were female (Table 1). Considering education 11.9% were illiterate, 29.9% of participants have studied up to high school whereas 46.7% were bachelor and 11.5% had completed their master's have participated in this study (Table 2). Table 1 and 2 presents the percentage distribution of age, gender and education with almost similar responses to each of the 10 questions of the questionnaire except (Q3 and Q5). Results of Q3 showed that adults, older, illiterate, high school and masters knew about the concept that brushing can clean the interproximal area of teeth whereas bachelors and young had no such concept. It was clear from table 1 and table 2, Q5 that only patients who are young with bachelor's and master's degrees knew about dental floss whereas the majority of patients only had a concept of toothpicks as an interdental cleaning aid.

Table 1: Percentage of knowledge of interdental aids according to age and gender

Questions	Options	Young	Adult	Older	Female	Male
		N=129	N=87	N=29	N=150	N=94
Q1. How do you clean your teeth?	Charcoal	0.78%	1.15%	0.00%	1.33%	0.00%
	Miswak	2.34%	6.90%	20.69%	2.67%	11.70%
	Salt	0.00%	1.15%	0.00%	0.67%	0.00%
	Toothbrush and toothpaste	96.88%	90.80%	79.31%	95.33%	82.30%
Q2. Which surfaces of the tooth are difficult to clean?	Buccal	7.81%	13.79%	6.90%	12.00%	6.38%
	Don't feel any difficulty	2.34%	21.84%	34.48%	11.33%	15.96%
	Interproximal/in-between teeth	41.41%	11.49%	6.90%	25.33%	28.72%
	Lingual/palatal	45.31%	49.43%	51.72%	47.33%	47.87%
	Occlusal	3.13%	3.45%	0.00%	4.00%	1.06%
Q3. Can a brush clean the interproximal area of the tooth?	Don't know	10.16%	18.39%	10.34%	14.00%	11.70%
	No	57.03%	35.63%	24.14%	44.67%	46.81%
	Yes	32.81%	45.98%	65.52%	41.33%	41.49%
Q4. Do you know the food that remains in between teeth is the reason for bad breath?	Don't know	5.47%	3.45%	3.45%	6.00%	2.13%
	No	9.38%	17.24%	13.79%	12.00%	13.83%
	Yes	85.16%	79.31%	82.76%	82.00%	84.04%
Q5. If food gets stuck between teeth what is the way to clean this area?	Brushing	3.91%	10.34%	0.00%	6.67%	4.26%
	Dental floss	50.78%	29.89%	13.79%	42.00%	34.04%
	Interdental brushes	0.78%	0.00%	0.00%	0.67%	0.00%
	Never used	0.78%	2.30%	3.45%	0.67%	3.19%
	Pin	3.13%	6.90%	3.45%	4.67%	4.26%
	Toothpick	40.63%	50.57%	79.31%	45.33%	54.26%
Q6. Do you use dental floss?	Never	44.53%	62.07%	26.44%	52.00%	59.57%
	Occasionally	46.88%	34.48%	5.75%	42.00%	34.04%
	Regularly	8.59%	3.45%	1.15%	6.00%	6.38%
Q7. Are you using other types of brushes to clean between teeth?	Don't know	39.84%	75.86%	25.29%	58.00%	55.32%
	No	44.53%	17.24%	6.90%	28.00%	38.30%
	Yes	15.63%	6.90%	1.15%	14.00%	6.38%
Q8. Do you use mouthwash?	Never	43.75%	48.28%	18.39%	42.67%	53.19%
	Occasionally	42.19%	34.48%	12.64%	40.67%	36.17%
	Once daily	10.94%	12.64%	0.00%	11.33%	8.51%
	Twice daily	3.13%	4.60%	2.30%	5.33%	2.13%

DOI:10.33897/fujd.v3i1.340

Q9. Source of information about interdental aid?	Book and magazines	3.13%	0.00%	0.00%	1.33%	2.13%
	Dentist	62.50%	51.72%	12.64%	57.33%	53.19%
	Don't know	21.09%	33.33%	17.24%	26.00%	34.04%
	Parents	0.00%	1.15%	0.00%	0.67%	0.00%
	Physician	0.78%	0.00%	0.00%	0.67%	0.00%
	Social media	12.50%	13.79%	3.45%	14.00%	10.64%
Q10. Does accumulation of food between teeth lead to gingivitis?	Don't know	4.69%	4.60%	2.30%	5.33%	4.26%
	No	10.16%	12.64%	2.30%	10.67%	10.64%
	Yes	85.16%	82.76%	28.74%	84.00%	85.11%

Table 2: Percentage of knowledge of interdental aids according to education

Questions	Options	Illiterate	High school	Bachelors	Master
		N=29	N=73	N=114	N=28
Q1. How do you clean your teeth?	Charcoal	0.00%	1.37%	0.88%	0.00%
	Miswak	20.69%	8.22%	0.88%	7.14%
	Salt	0.00%	0.00%	0.88%	0.00%
	Toothbrush and toothpaste	79.31%	90.41%	97.37%	92.86%
Q2. Which surfaces of the tooth are difficult to clean?	Buccal	13.79%	13.70%	5.26%	14.29%
	Don't feel any difficulty	27.59%	21.92%	3.51%	14.29%
	Interproximal/in-between teeth	6.90%	9.59%	44.74%	17.86%
	Lingual/palatal	44.83%	52.05%	45.61%	46.43%
	Occlusal	6.90%	2.74%	0.88%	7.14%
Q3. Can a brush clean the interproximal area of the tooth?	Don't know	20.69%	20.55%	7.02%	10.71%
	No	20.69%	35.62%	59.65%	39.29%
	Yes	58.62%	43.84%	33.33%	50.00%
Q4. Do you know the food that remains in between teeth is the reason for bad breath?	Don't know	13.79%	1.37%	2.63%	10.71%
	No	10.34%	15.07%	10.53%	17.86%
	Yes	75.86%	83.56%	86.84%	71.43%
Q5. If food gets stuck between teeth what is the way to clean this area?	Brushing	6.90%	9.59%	2.63%	7.14%
	Dental floss	3.45%	20.55%	57.89%	46.43%
	Interdental brushes	0.00%	1.37%	0.00%	0.00%
	Never used	3.45%	2.74%	0.88%	0.00%
	Pin	20.69%	5.48%	0.88%	0.00%
	Toothpick	65.52%	60.27%	37.72%	46.43%
Q6. Do you use dental floss?	Never	79.31%	73.97%	37.72%	50.00%
	Occasionally	20.69%	24.66%	51.75%	42.86%
	Regularly	0.00%	1.37%	10.53%	7.14%
Q7. Are you using other types of brushes to clean between teeth?	Don't know	82.76%	83.56%	28.95%	75.00%
	No	17.24%	8.22%	56.14%	10.71%
	Yes	0.00%	8.22%	14.91%	14.29%
Q8. Do you use mouthwash?	Never	82.76%	57.53%	37.72%	17.86%
	Occasionally	13.79%	32.88%	45.61%	53.57%
	Once daily	3.45%	1.37%	14.91%	21.43%
	Twice daily	0.00%	8.22%	1.75%	7.14%

DOI:10.33897/fujd.v3i1.340

Q9. Source of information about interdental aid?	Book and magazines	3.45%	0.00%	2.63%	0.00%
	Dentist	20.69%	49.32%	64.04%	75.00%
	Don't know	72.41%	39.73%	16.67%	7.14%
	Parents	0.00%	0.00%	0.00%	3.57%
	Physician	0.00%	0.00%	0.00%	3.57%
	Social media	3.45%	10.96%	16.67%	10.71%
Q10. Does accumulation of food between teeth lead to gingivitis?	Don't know	17.24%	4.11%	2.63%	3.57%
	No	13.79%	15.07%	7.89%	7.14%
	Yes	68.97%	80.82%	89.47%	89.29%

Table 3 showed that there was a statistically significant association among all the groups with Q1 and Q6. Whereas Q2, 3, 5 and 8 showed significant association with age as compared to gender which showed nonsignificant results with all the questions except Q1. It was obvious from the results that education has a strong association with all the questions with a *p*-value statistically significant.

Table 3: Association of age gender and education with the knowledge of interdental aids

Questions	***p*-value**		
Statistically Significant Association	**Age**	**Gender**	**Education**
Q1. How do you clean your teeth?	0.013*	0.020*	0.030*
Q2. Which surfaces of the tooth are difficult to clean?	<0.001*	0.310	<0.001*
Q3. Can a brush clean the interproximal area of the tooth?	0.001*	0.864	0.001*
Q4. Do you know the food that remains in between teeth is the reason for bad breath?	0.506	0.349	0.048*
Q5. If food gets stuck between teeth what is the way to clean this area?	0.002*	0.373	<0.001*
Q6. Are you using other types of brushes to clean between teeth?	<0.001*	0.081	<0.001*
Q7. Do you use mouthwash?	0.429	0.312	<0.001*
Q8. Source of information about interdental aid?	0.056	0.631	<0.001*
Q9. Does accumulation of food between teeth lead to gingivitis?	0.902	0.930	0.025*

**Statistically significant ($p < 0.05$)*

DISCUSSION

Oral hygiene is essential for the maintenance of oral health therefore its knowledge and awareness among patients must be emphasized. Interdental cleaning aids are fundamental for maintaining oral health and avoiding many oral diseases. The present study was planned to raise awareness, understanding and practice of interdental aids among patients of Lahore. In this study, 92.62% of the subjects used toothbrushes and toothpaste to brush their teeth that were in accordance with a study conducted in Saudi Arabia where 96% of subjects used toothbrush and toothpaste.[13] This is reflected from these findings that the general public has only a concept of toothbrushes and toothpaste as only tooth cleaning aid probably because in Asian countries our health services emphasize only toothbrushes and there is still a need of raising awareness about other interdental aids. In our study, 47.5% of the people assumed that it was more difficult to brush the lingual surface and the response was similar to a study conducted in Saudi Arabia in which 42% have given the same statement.[13]

This study revealed that no interdental aids were used by 54.92% of the participants as compared to the study

DOI:10.33897/fujd.v3i1.340

conducted by researchers in Saudi Arabia which showed that only 16% of participants practised interdental aids.[14] It has been shown from our study that 6.15% practised interdental aid regularly and this response is less than a study conducted in India where 18% of patients practised interdental aids regularly.[15] Among interdental aids, It is clear from our results that 6.15% of patients use dental floss regularly and 39.93% occasionally as compared to the same study conducted in India where regular use of dental floss is 2% and 18% of subjects use it occasionally. Their study also showed that 86% of the people stated that brushing the interproximal surface was more difficult whereas our study showed different responses in which only 26.6% had this concept.[15] This may be due to the reason that interproximal surfaces are not easily accessible and also people had no idea of brushing techniques so there is a need for dental education programs all over the country to meet dental hygiene standards.

Another study showed that 64% of females had a perception and knowledge of the use of dental floss as compared to the male perception of 60% which is different from our results in which males had 59.57% as compared to females' perception of 52%.[16] It was evident from our study that only educated people have a basic understanding that food accumulation between the teeth would lead to bad breath (p-value 0.048) which is in accordance with a study conducted in Nepal that showed that 59.9% of participants had an idea that poor oral hygiene leads to bad breath.[4] Regarding the use of mouth wash our study clearly showed that only educated people were using mouthwash (p-value< 0.001) and these results are similar to a study conducted in India in 2016 that only a few students knew the use of mouthwash.[17] In our study it is apparent that only educated patients had an idea that food accumulation between teeth could lead to gingivitis (p-value = 0.025) compared to another study in which only a few people knew that Interdental Cleaning is important for good gingival and periodontal health.[18] Our survey gave a clear concept that only a few percentages of patients had an idea of interdental toothbrushes which is in accordance with a study conducted by Kakkad and his associates in North Bengalore.[19]

Regarding the source of information about interdental aid, the present study depicted that only young, educated patients and mostly females who visited dentists had an understanding of interdental aid. A study conducted in Australia showed that more than two-thirds of women 67.5% reported brushing twice a day with the practice of using other oral hygiene products including 40.7% mouthwash, 42.7% dental floss and also sugar-free gums (35.7%). These results showed that knowledge and concept of interdental aids other than a toothbrush are more in western countries. It may be due to the reason that people had their regular dental checkups with the dentist every six months where they also give dental education and awareness about these interdental cleaning methods.[20]

CONCLUSION

The concept and practice of other oral hygiene aids among patients of Lahore showed that the majority of people were unaware of interdental cleansing aids other than a toothbrush. Therefore, this study will help to increase the understanding and practice of different interdental cleaning aids among the general population in future. This can only be possible by planning dental education programs throughout the country so that our general public has a clear concept of brushing techniques and the use of other interdental aids. There is a crucial need for researchers, healthcare workers and policymakers to develop effective dental healthcare strategies to address this important yet neglected aspect of dental care in Pakistan. This will lead to the prevention of dental problems and thus helps in maintaining the oral health of patients.

DISCLAIMER

None.

CONFLICT OF INTEREST

None to declare.

ETHICAL STATEMENT

The study was conducted in accordance with the declaration of Helsinki and with the approval of the Institutional Review Board at Azra Naheed Dental College, Superior University, Lahore. (Ref: ANDC/RAC/134/26/22)

FUNDING DISCLOSURE

The author(s) received no financial support for the research, authorship, and/or publication of this article.

AUTHORS CONTRIBUTION

Conception and design of the study: S. Shakeel, T.

DOI:10.33897/fujd.v3i1.340

Nayab

Acquisition of data: L. Yousaf, A. Hafeez, G.M. Paracha

Analysis and interpretation of data: S. Awan, A. Fahim

Drafting of the manuscript: S. Shakeel, T. Nayab

Critical review of the manuscript: L. Yousaf, A. Hafeez

Approval of the final version of the manuscript to be published: S. Shakeel, T. Nayab, L. Yousaf, A. Hafeez, S. Awan, G.M. Paracha, A. Fahim

REFERENCES

1. Hegde R, Awan KH. Effects of periodontal disease on systemic health. Dis Mon. 2019;65(6):185-192.
2. Jakubovics NS, Goodman SD, Mashburn-Warren L, et al. The dental plaque biofilm matrix. Periodontol 2000. 2021;86(1):32-56.
3. Shah N, Mathur VP, Jain V, et al. Association between traditional oral hygiene methods with tooth wear, gingival bleeding, and recession: A descriptive cross-sectional study. Indian J Dent Res. 2018;29(2):150.
4. Baniya BK, Bista S, Sangwan N, et al. Assessment of Knowledge, Attitude, and Practices of Adjunctive Oral Hygiene Aids Brushing Among Medical and Dental Students in UCMS, Nepal. J Univers Coll Med Sci. 2022;10(01):45-49.
5. Bushehab NME, Sreedharan J, Reddy S, et al. Oral Hygiene Practices and Awareness of Pregnant Women about the Effects of Periodontal Disease on Pregnancy Outcomes. Int J Dent. 2022;2022.
6. Shankar P, Kumar A, Kumari CB, Mahendra J, Ambalavanan N. A Review On Mechanical Plaque Control Agents Used In Periodontics. Ann Rom Soc Cell Biol. 2020;24(1):1132–7.
7. Ng E, Lim LP. An overview of different interdental cleaning aids and their effectiveness. Dent J. 2019;7(2):56.
8. Silva C, Albuquerque P, de Assis P, Lopes C, Anníbal H, Lago MCA, Braz R. Does flossing before or after brushing influence the reduction in the plaque index? A systematic review and meta-analysis. Int J Dent Hyg. 2022;20(1):18-25.
9. Nascimento EB, Rodrigues R, Manso MC. Prevalence of dental floss use in deciduous dentition: A systematic review and meta-analysis. Int J Dent Hyg. 2023;21(1):116-127.
10. Moretti AJ, Zhang S, Phillips ST, Williams K, Moss KL, Offenbacher S. Evaluation of a Curved Design Rubber Bristle Interdental Cleaner on Patients with Gingivitis. J Dent Hyg. 2020;94(1):6-13.
11. Bahlmann L, Frentzen M, Schroeder J, Fimmers R. Comparison of two interdental cleaning aids: A randomized clinical trial. Int J Dent Hyg. 2018;16 (2):e46-e51. doi: 10.1111/idh.12298.
12. Sharma AV, Mudgal M, Krishnan A, et al. Oral Hygiene-Aids & Techniques: Book Rivers. 2022.
13. Gufran K, Alanazi KM, Alanazi AK, Alqwiri AS, Alsubaie FM, Alotaibi NM. Self-Reported Knowledge and Practice of Interdental Aids among People of Riyadh, Saudi Arabia - A Cross-Sectional Study. J Pharm Bioallied Sci. 2021;13(Suppl 1):S280-S283. doi: 10.4103/jpbs.JPBS_737_20.
14. Kumar S, Tadakamadla J, Areeshi AYBH, Tobaigy HAWM. Knowledge and attitudes towards HIV/AIDS among dental students of Jazan University, Kingdom Saudi Arabia. Saudi Dent J. 2018;30(1):47–52.
15. Mahtani AA, Lakshmanan R. Awareness of Interdental Aids and thier Regular Use in Daily Oral Hygeine-A Questionnaire based Study. J Pharm Sci Res. 2017;9(2):202.
16. Wong TY, Tsang YC, Yeung KWS, Leung WK. Self-Reported Gum Bleeding, Perception, Knowledge, and Behavior in Working-Age Hong Kong Chinese-A Cross-Sectional Study. Int J Environ Res Public Health. 2022;19(9):5749. doi: 10.3390/ijerph19095749.
17. Kote S, Dadu M, A R S, Ds A, Arora D. Knowledge, Attitude and Behaviour for Choosing Oral Hygiene Aids among Students of Management Institutes, Ghaziabad, India. West Indian Med J. 2013;62(8):758-63.
18. Malla S, Shrestha R, Dhami B, Gupta S, Deo S. Knowledge and practices of periodontal health and oral hygiene among BDS students. J Nepalese Soc Periodontol Oral Implantol. 2017;1(2):51-4.
19. Kakkad DN, Murali R, Krishna M, Yadav S, Yalamalli M, Kumar AV. Assessment of oral hygiene knowledge, attitude, and practices among

DOI:10.33897/fujd.v3i1.340

engineering students in north Bangalore: A cross-sectional survey. Int J Sci Study. 2015;3(1):84-9.

20. George A, Johnson M, Blinkhorn A, Ajwani S, Bhole S, Yeo AE, et al. The oral health status, practices and knowledge of pregnant women in south-western Sydney. Aust Dent J. 2013;58(1):26-33.