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KNOWLEDGE AND AWARENESS OF ORAL HYGIENE AMONG TEENAGERS -A QUESTIONNAIRE SURVEY

P.G. SUSHMA¹, BALAJI GANESH S^{2*}, AND S. KAVITHA³

- 1: Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, 160, Poonamallee High Road, Chennai Tamilnadu, India, 600077
- 2: Scientist, White lab-materials research center, Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, 160, Poonamallee High Road, Chennai Tamilnadu, India, 600077
- 3: Lecturer, Department of Biochemistry, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai. India, 600077

***Corresponding Author: E Mail: Dr. Balaji Ganesh S: balajiganeshs.sdc@saveetha.com**

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ABSTRACT

Dental awareness is needed for the assessment of the dental health of the population rather than individuals. There are many basic things to be known by teenagers about oral hygiene. Many teenagers are prone to tooth decay, plaque. The main components of good oral health maintenance are brushing, flossing, rinsing with mouthwash, seeing your dentist for a regular check-up, and eating a healthy diet. The aim of the study was to assess the knowledge and awareness on oral hygiene among teenagers in Chennai. A cross-sectional questionnaire was created which deals with awareness about dental care among teenagers in the Chennai population. This questionnaire comprised 15 questions and the sample size was 205. The survey

was done through google forms and was analyzed using statistical software SPSS. Based on the analysis it was clear that only 2-3rd of the population was aware of oral hygiene. There is a significant and positive linear correlation between knowledge and awareness about oral hygiene among teenagers of the Chennai population. The majority of the respondents had high knowledge and awareness with respect to oral health. Evidence-based reinforcement programs should be introduced to increase knowledge and awareness further.

Keywords: Dental knowledge, Brushing, Flossing, Teenagers

1. INTRODUCTION

During the past two decades, increasing levels of dental caries have been observed among teenagers in developing countries, in contrast to developed countries [1]. Although teenagers have a basic knowledge of dental health, such as the importance of proper brushing and diet in preventing dental caries, many fail to brush their teeth effectively and tend to consume cariogenic foods [2]. At the same time, teenagers are a critical period as a health practice during which teenage life usually persists during adult years [3, 4]. The oral health of an individual is a key indicator of overall health, well-being, and quality of life. It includes a wide range of diseases and conditions that include dental caries, Periodontal disease, Tooth loss, Oral cancer, Oral manifestations of HIV infection, Oro-dental trauma, and birth defects such as cleft lip and palate [5, 6]

To overcome the high prevalence of dental caries in developing countries, the need for a

community-oriented preventive program is emphasized. Oral health education is an integral part of these programs. Oral health education is believed to be a cost-effective method for promoting oral health if done through schools and colleges, where all the teenagers irrespective of socioeconomic status or ethnicity can be reached. According to previous research, it was observed that daily tooth brushing became more frequent after a community education program about oral hygiene [7]. Many people believe that they need to visit a dentist only if they experience pain or feel uncomfortable in their oral region, but regular dental visits can contribute to a lifetime of good oral health. Nowadays in dentistry, advances in diagnosis and treatment are more sophisticated and comfortable than ever [8]. Mouthwash helps to maintain oral health [9]. Aggressive periodontitis, pubertal associated gingivitis may occur in some cases during teenage [10,

11], where the inflammatory disease destroys the gingiva and other supporting structures around the teeth [12-14]. Thus it is very much important to maintain proper oral health to prevent further complications in teenagers [15].

In other studies based on the knowledge, attitude, and practice model of oral health education, the educational intervention significantly improved oral health practice . Oral health problems can directly or indirectly negatively impact the quality of life. Oral affliction, like pain experience, problems with eating, chewing, smiling and communication due to missing, discolored or damaged teeth restrict activities in school, colleges, work, mood, enjoyment leading to loss of many potential hours. Moreover, teenagers are the most vulnerable to behavioral risk factors influencing oral health like frequent consumption of sugar-rich diet/drinks, use of tobacco, and excessive consumption of alcohol. Previously our team had conducted numerous reviews [16, 17] and clinical [18, 19]. Hence, we carried out a study with the aim to assess the knowledge

and awareness of oral health practices among teenagers of Chennai population.

2. MATERIAL AND METHODS

The study is an online survey among the adult population with a sample size of 205 participants. A well structured questionnaire was prepared and circulated using an online Google forms link. The purpose of study was explained to the participants who took the survey. The total number of questions in the questionnaire was 17 questions. Data Analytics Data was entered into a spreadsheet using Excel version 16.37 (Microsoft Corp, Redmond, Wash). The data tabulation in excel was, according to S.no, education, qualification, Gender, knowledge, attitude, and practice about oral hygiene. The data which was collected was analyzed using Statistical Package for Social sciences (SPSS) software, version 1.0.0.1347 64 bit (IBM corp., NY, USA). The data were assessed by being subjected to descriptive analysis and chi square analysis. The data was represented by the means of bar graphs.

3. RESULT AND DISCUSSION

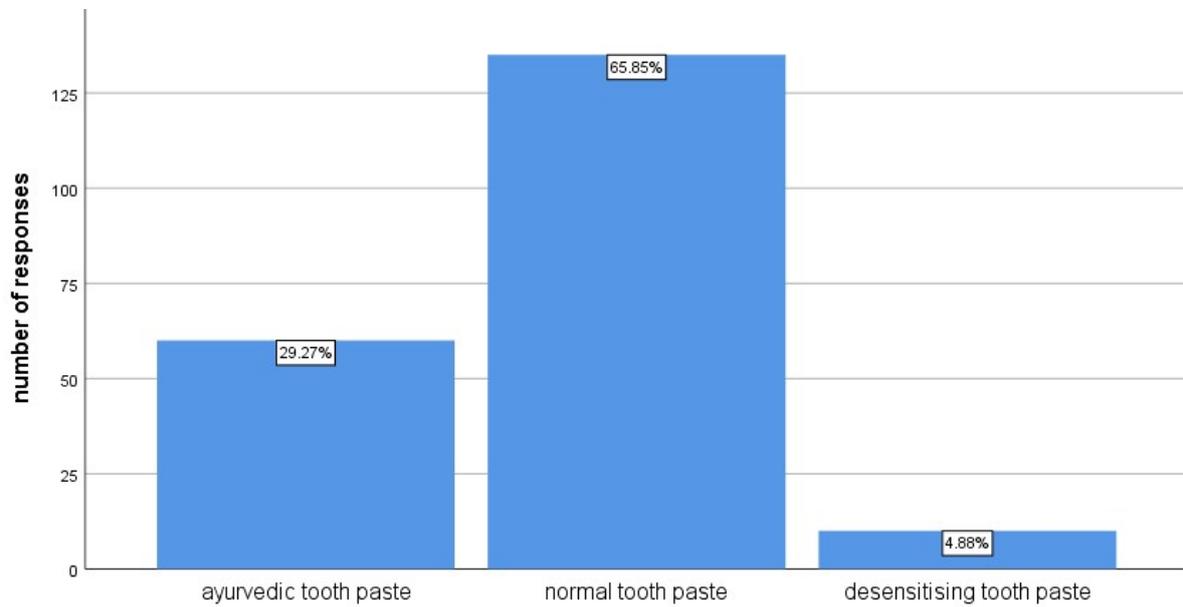


Figure 1 - Bar graph showing responses for choice on materials used for maintaining oral hygiene where X-axis represents the choice of materials used for maintaining the oral hygiene and the Y-axis denotes the number of respondents. Majority of the participants used normal tooth paste for maintaining oral hygiene (65.85%).

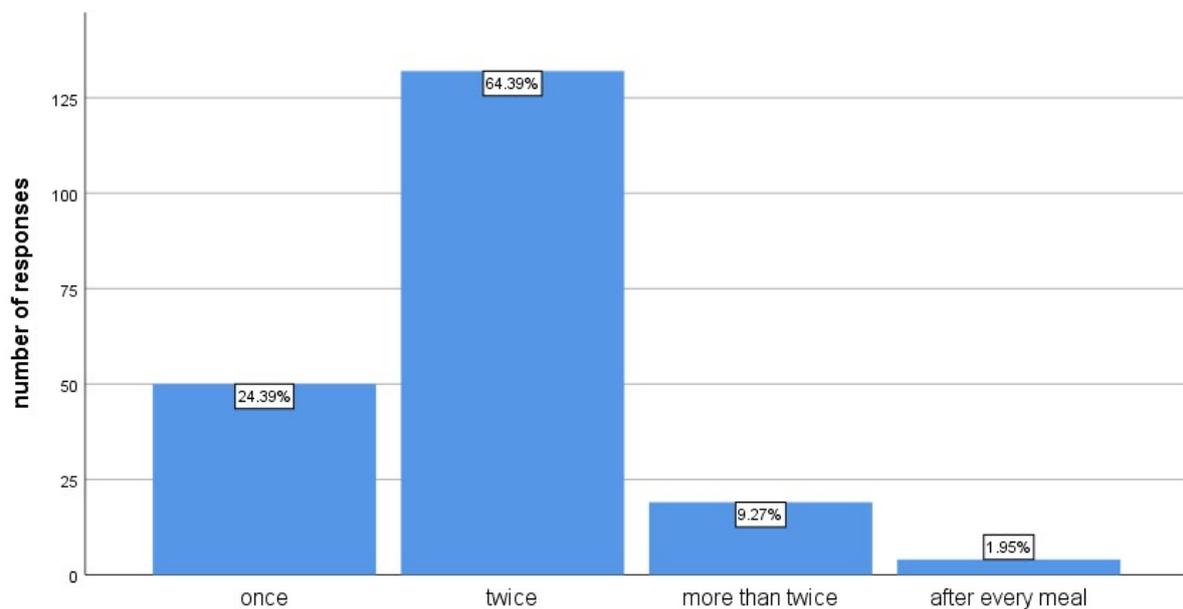


Figure 2 - Bar graph showing responses for question on frequency of brushing . The X-axis represents the frequency of brushing and the Y-axis denotes the number of respondents. Majority of the participants brushed twice a day (64.39%).

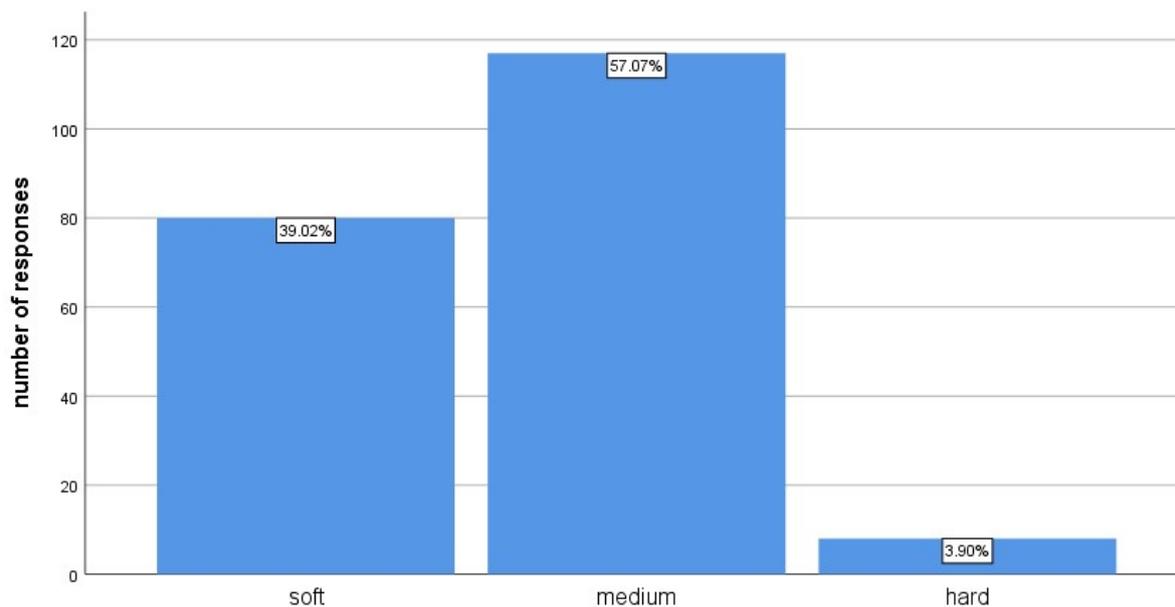


Figure 3 - Bar graph showing response for question about type of toothbrush preferred, where X-axis represents the types of toothbrush preferred by respondents and the Y-axis denotes the number of respondents. Majority of the respondents preferred medium bristle toothbrush (57.07%).

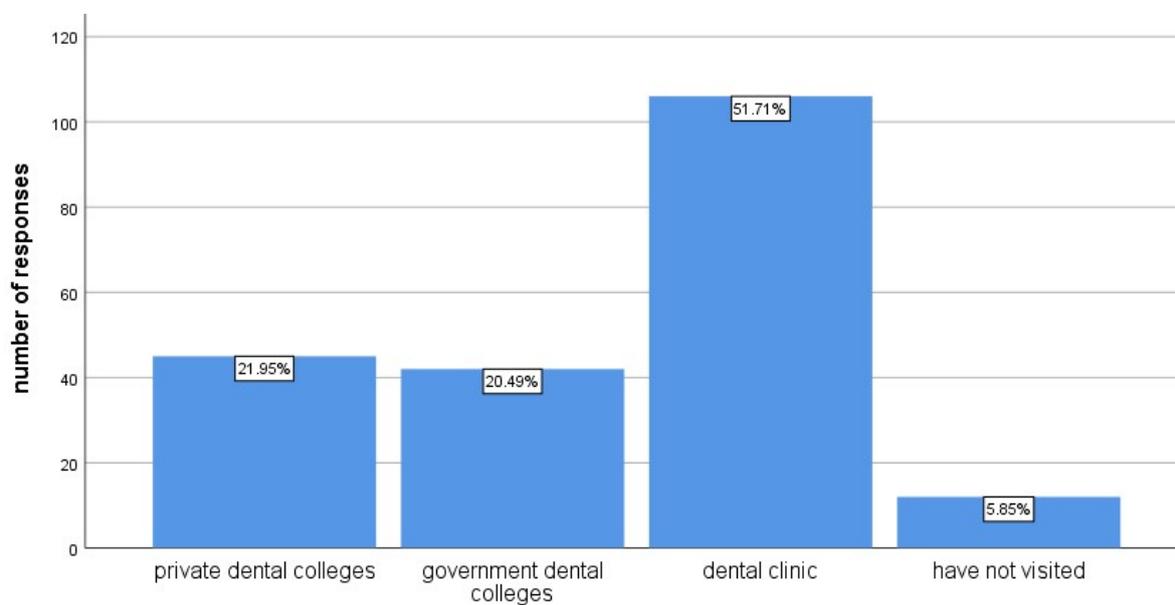


Figure 4 - Bar graph showing response for question about the source of dental care. The X-axis represents the source of dental care and the Y-axis denotes the number of respondents. Majority of the respondents preferred dental clinics as the source of dental care (51.71%).

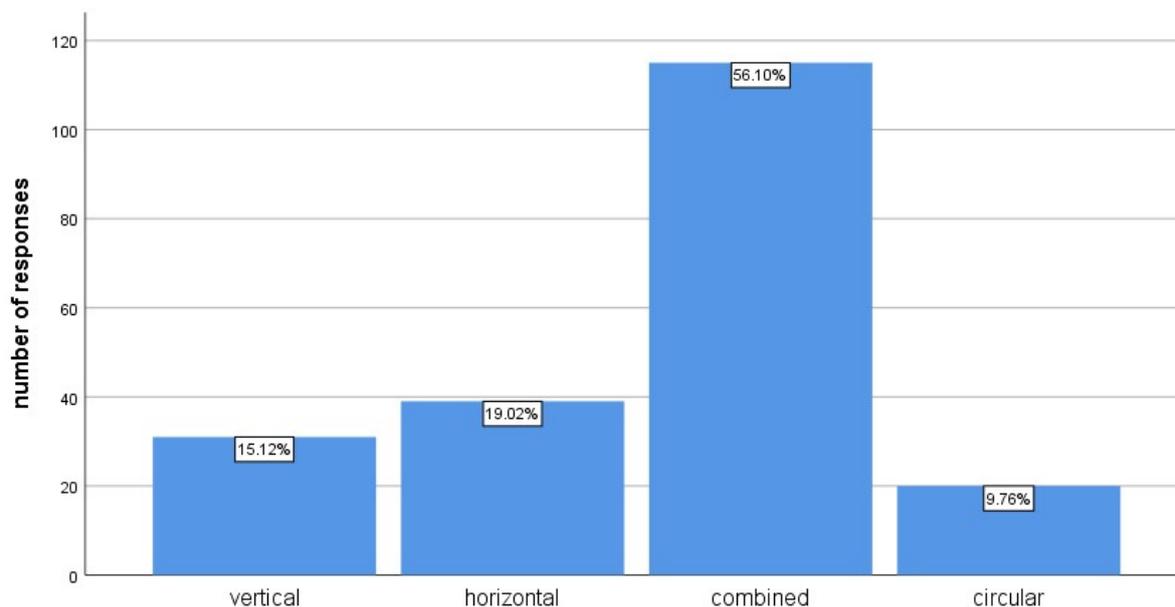


Figure 5-Bar graph showing response for question on type of tooth brushing methods followed, where X-axis represents the method of tooth brushing and the Y-axis denotes the number of respondents. Majority of the participants followed combined brushing techniques (56.10%).

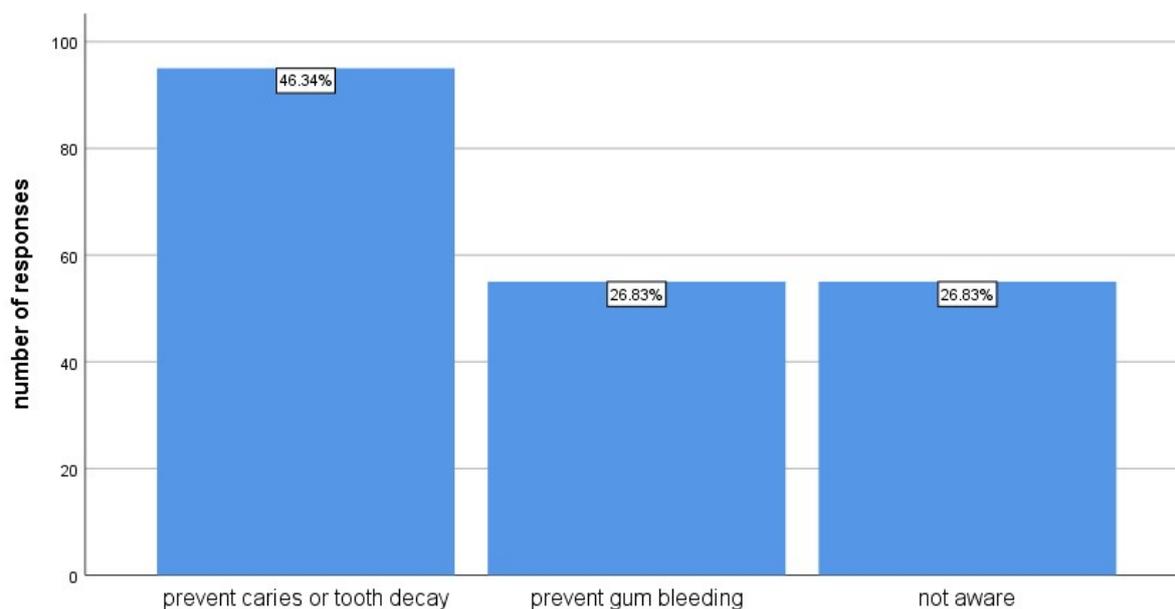


Figure 6-Bar graph showing response for question about the importance of fluoride in dental health, where X-axis represents the advantages of fluoride and the Y-axis denotes the number of respondents. Majority of the respondents were aware that fluoride prevents caries (46.3%).

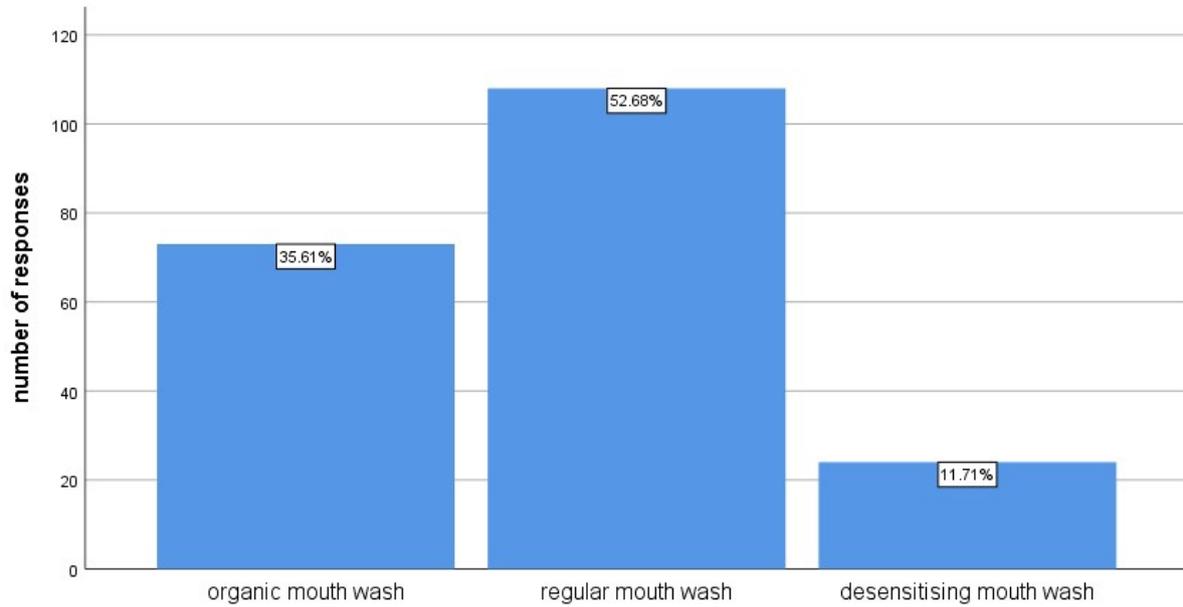


Figure 7-Bar graph showing response for question on type of mouthwash preferred.The X-axis represents the type of mouthwash preferred and the Y-axis denotes the number of respondents. Majority of the respondents preferred regular mouthwash (52.68%).

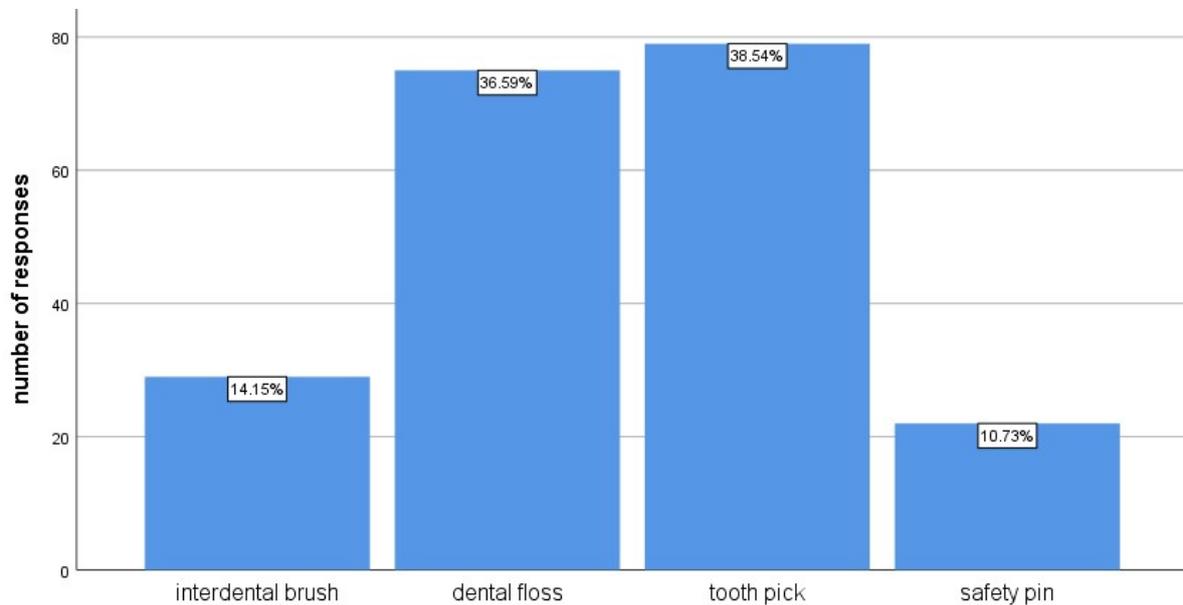


Figure 8-Bar graph showing responses for questions of oral hygiene aids used in case of food impaction where X-axis represents the oral hygiene aid used and the Y-axis denotes the number of respondents. Majority of the respondents used toothpick to remove food impaction(38.54%)

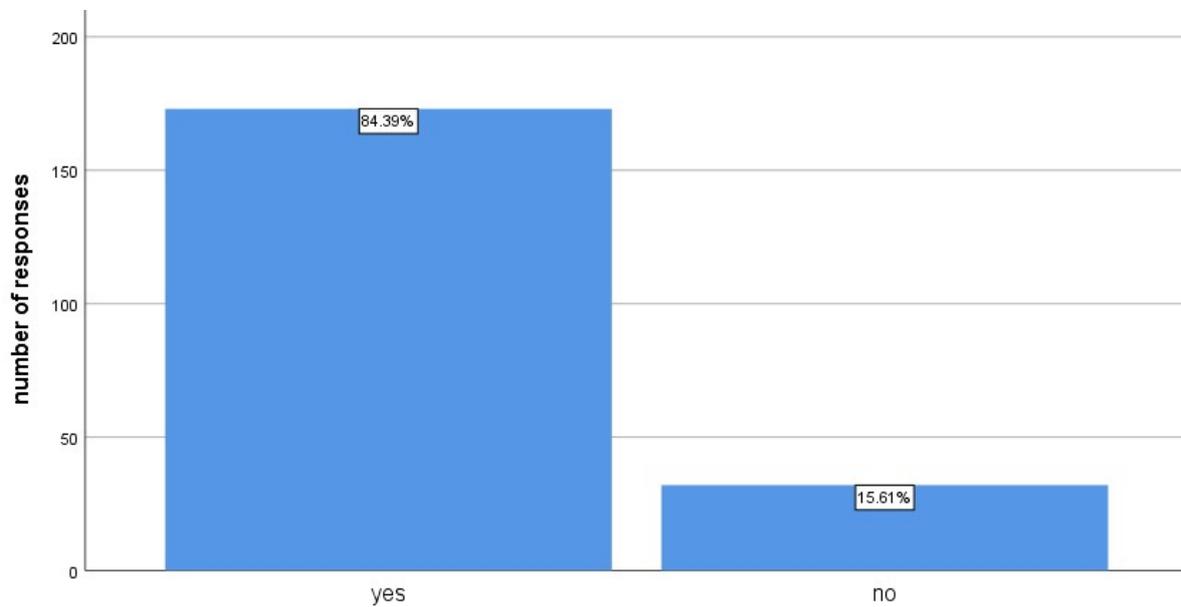


Figure 9- Bar graph showing responses for question ‘do you clean your tongue’ where X-axis represents the various responses on cleaning the tongue and the Y-axis denotes the number of respondents. Majority of the participants (84.4%) said that they regularly clean their tongue.

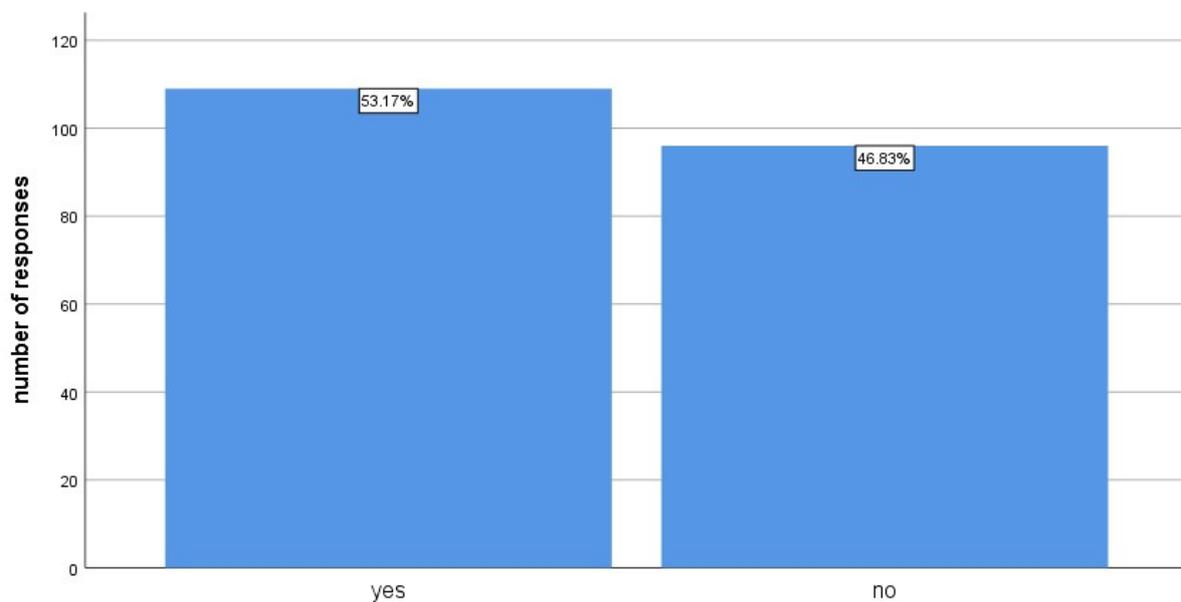


Figure 10- Bar graph showing responses for question ‘have you ever noticed bad smell from your mouth’ where X-axis represents the various responses on observing bad smell from mouth and the Y-axis denotes the number of respondents. Majority of the respondents (53.2%) said yes, they observe a bad smell from their mouth.

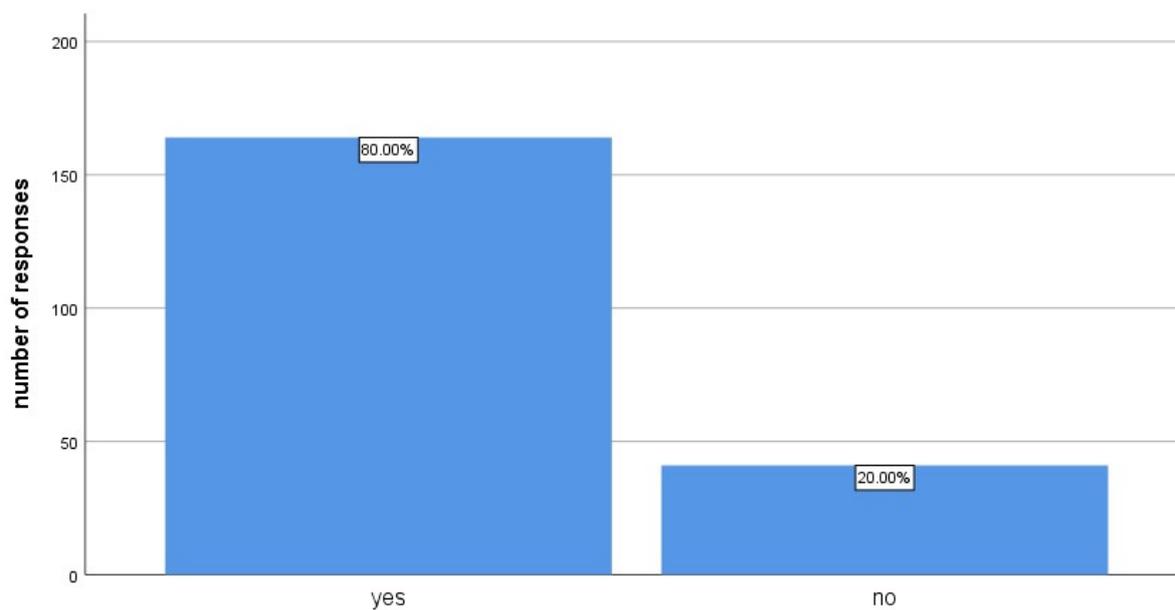


Figure 11-Bar graph showing responses for question ‘do you think oral hygiene is related to systemic health’ where X-axis represents the various responses on the fact that oral hygiene is related to systemic health and the Y-axis denotes the number of respondents.Majority of the respondents(80%) accepted the fact that oral health is related to systemic health

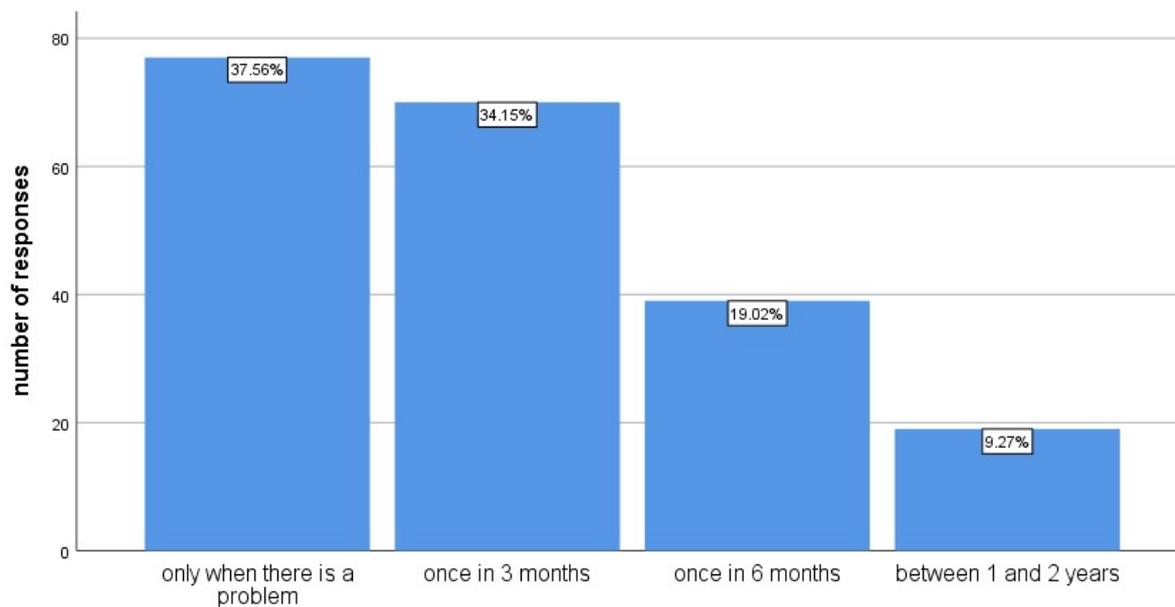


Figure 12-Bar graph showing responses for the question ‘how often do you visit a dentist’ where X-axis represents the various responses on frequency of visiting a dentist and the Y-axis denotes the number of respondents.Majority of the respondents (37.6%) visit the dentist only when there is a problem

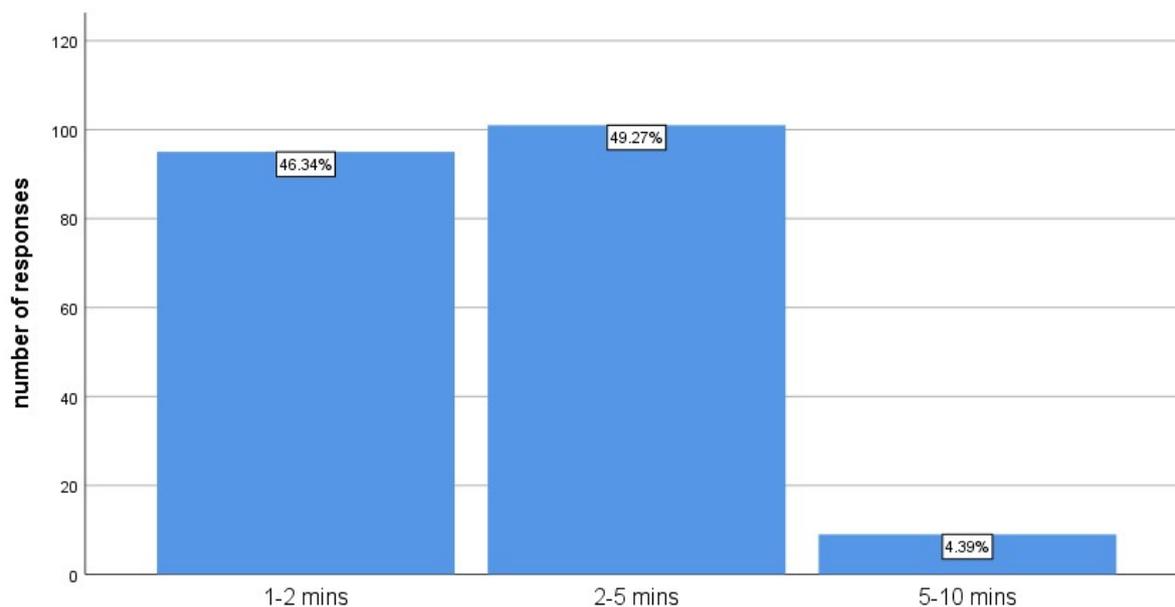


Figure 13 - Bar graph showing responses for question ‘what is the time period of brushing your teeth’ where X-axis represents the various responses on duration of brushing teeth and the Y-axis denotes the number of respondents. Majority of the respondents said the period of brushing teeth is 2-5 mins (49.3%).

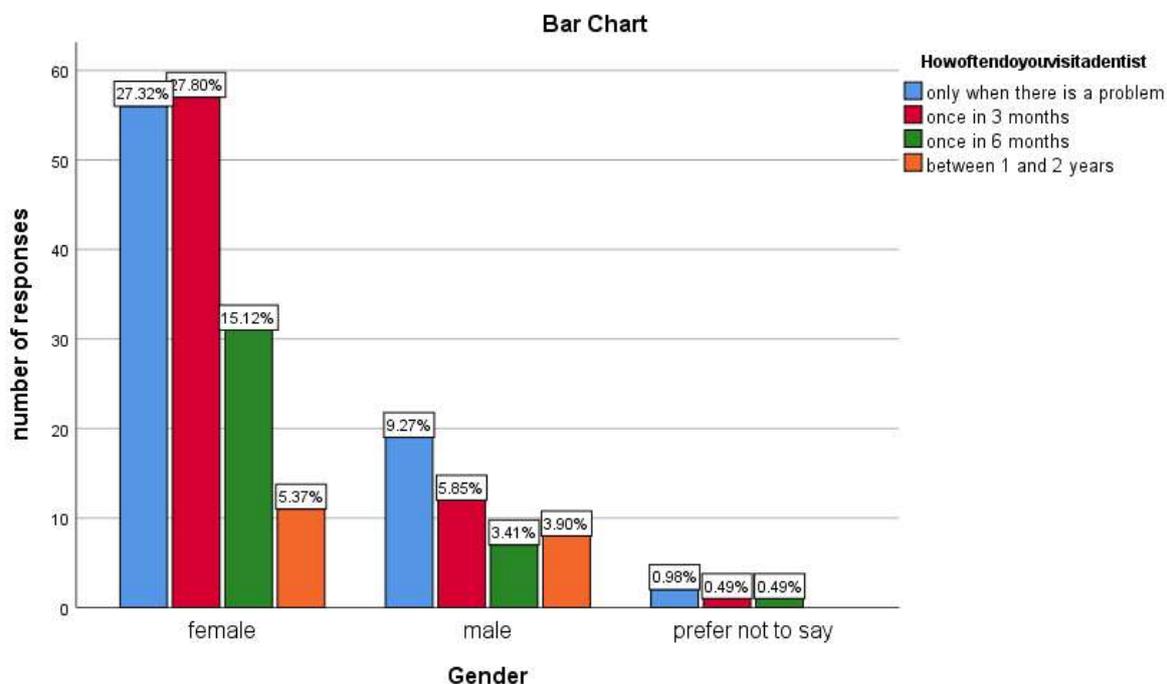
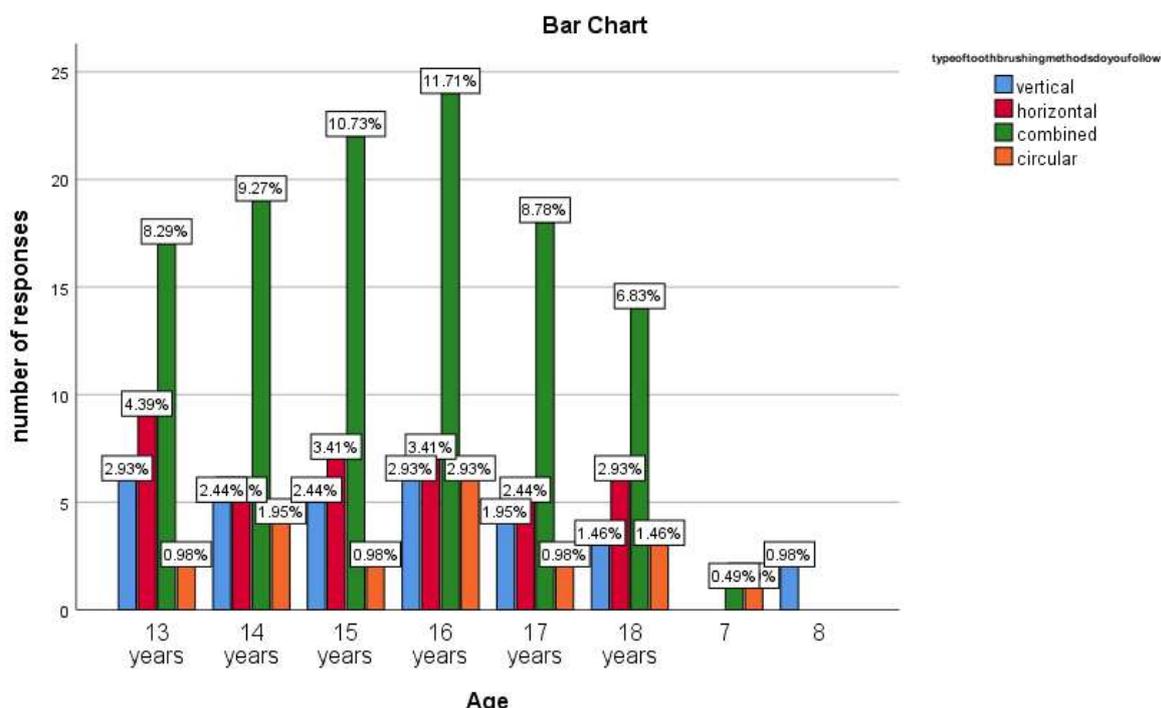
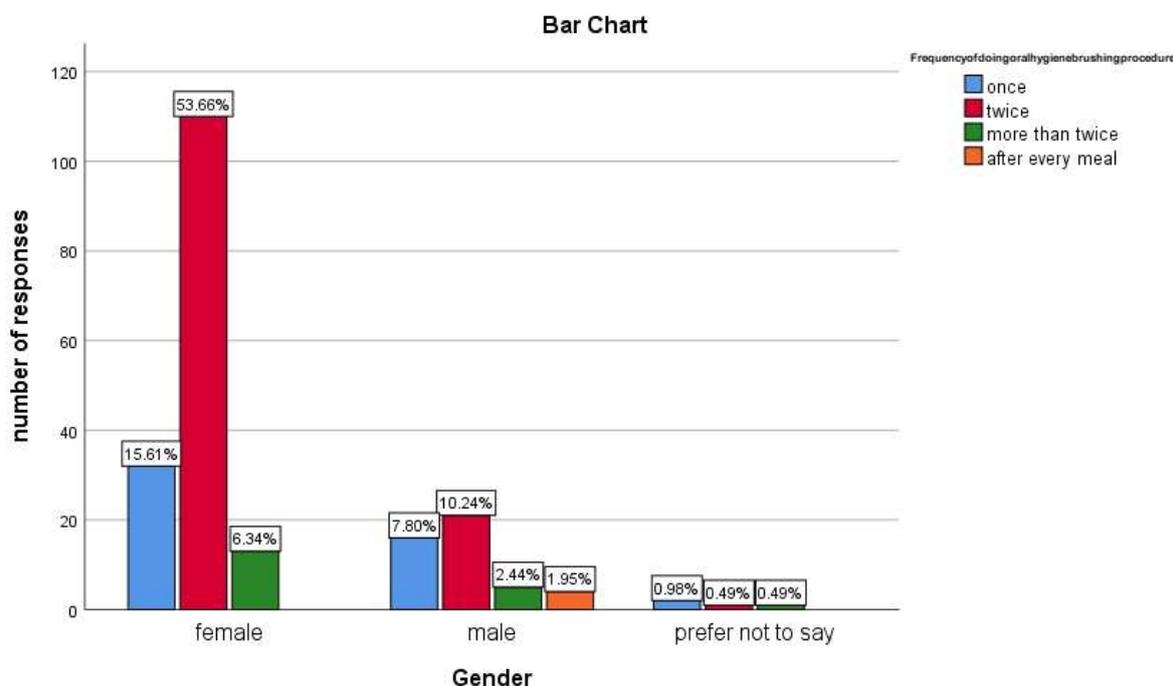


Figure 14 - This graph depicts the association between gender and “how often they visited the dentist” X axis represents gender and Y axis represents the number of responses; Most of the females visited the dentist once in 3 months (red colour) and most of the males visited the dentist only when there is a problem (blue colour). Chi-square test done. p value=0.35, p >0.05, hence statistically insignificant.



Age
 Figure 15 - This graph represents the association between age and type of tooth brushing method followed. X axis represents age in years and Y axis represents the number of responses. Most of the teenagers used a combined method (green colour) of both horizontal and vertical toothbrushing. Chi square test done, p value = 0.49, $p > 0.05$, hence statistically insignificant.



Gender
 Figure 16 - This graph represents the association between gender and the frequency of brushing. X axis represents gender and Y axis represents number of responses. Most females brushed their teeth twice (red bar) when compared to males. Chi square test done, p value = 0.001, $p < 0.05$, hence statistically significant.

Figure 1 represents that 65.85% of people use normal toothpaste, 29.27% use ayurvedic toothpaste and 4.88% desensitising toothpaste [20]. **Figure 2** represents that the frequency of brushing was 24.4% did once, 64.4% did twice, 9.3% did more than twice and 1.9% said after every meal, most of the teenagers brushed their teeth twice, many factors can be attributed to this disparity, including lifestyle variations and cultural norms [21]. **Figure 3** represents that 39% preferred the soft type of toothbrush while 57.1% preferred the medium type of toothbrush and 3.9% preferred the hard type of toothbrush, hard type of toothbrush tend to be abrasive on the enamel and they can irritate the gums and actually push them away from teeth. **Figure 4** represents that 51.7% source of dental care was from dental clinics and 20.5% from government dental colleges and 22% from private dental colleges and 5.9% have not visited, most of the teenagers went to dental clinic for their dental treatments. **Figure 5** represents that 15.1% followed a vertical method of tooth brushing, 19% followed horizontal, 56.1% followed combined and 9.8% circular method, most of the teenagers preferred the combined type of tooth brushing technique. **Figure 6** represents that 46.3% were aware that fluoride prevents caries and tooth decay,

26.8% said it prevents gum bleeding and 26.8% said they are not aware, The most important effect of fluoride on caries incidence is through its role in the process of remineralization and demineralization of tooth enamel [22, 23]. **Figure 7** represents that 35.6% preferred organic mouthwash, 52.7% preferred normal mouthwash, and 11.7% used desensitizing mouthwash. **Figure 8** represents that 38.5% use toothpick to remove food impaction, while 36.6% use dental floss, 14.1% use an interdental brush and 10.73% used safety pins, most of the teenagers use dental floss to remove food impaction. This may affect your teeth in the long run and you may slowly begin to lose them. **Figure 9** represents that 84.4% of the population said that they regularly clean their tongue and 15.6% said they don't clean their tongue regularly, not brushing your tongue can make your gums weak and susceptible to bacteria attack. **Figure 10** represents that 53.2% said yes, they observe a bad smell from their mouth and 46.8%, said no they don't notice a bad smell in their mouth, bad breath is caused by odor-producing bacteria that grow in the mouth. When you don't brush and floss regularly, bacteria accumulate on the bits of food left in your mouth and between your teeth [24]. The sulfur compounds released by these bacteria

make your breath smell. **Figure 11** represents that 80% accepted the fact that oral health is related to systemic health while 20% did not accept this fact [25]. **Figure 12** represents that 37.6% visit the dentist only when there is a problem while 34.1% visit once in 3 months, 19% once in 6 months and 9.3% between 1 and 2 years, For most people, dentists recommend having a cleaning and checkup twice a year – every six months, to be precise [26]. **Figure 13** represents that 46.3% brush their teeth in 1-2 mins while 49.3% in 2-5 mins and 4.4% brush their teeth 5-10 mins, The American Dental Association recommends brushing your teeth twice a day with fluoride toothpaste for two minutes each time. **Figure 14** represents the association between gender and “how often they visited the dentist”, most of the females visited the dentist once in 3 months and most of the males visited the dentist only when there is a problem. **Figure 15** represents the association between age and type of tooth brushing method, the development of motor skills related to tooth brushing behavior seems to be age related [27]. **Figure 16** represents association between gender and the frequency of brushing, most number of females brushed their teeth twice when compared to males [28].

Based on the previous research by SN Goryawala [29], the results were found to be in contradiction with our current study because 82.1% participants brushed only once a day, but in our study, 64.4% brushed twice the possible reason for this contradiction is the knowledge about oral hygiene. Based on the previous research on Oral hygiene practices of non-dental nurses in a tertiary hospital in North-West Nigeria by Zainab F Ibrahim, Lawal O Teslim, Ibrahim Aliyu [30] the results were found to be in contradiction with the current study because 70% changed their brush between 1-3 months, but in our study, 45.6% changed their brush only between 3-6 months, the possible reason for this contradiction is lack of awareness about oral hygiene among the participants of our current study. Based on the previous research by Winner JJ *et al* [31] on the Oral Hygiene Maintenance in Children, the results were found to be in acceptance with our current study because cleaning of the tongue was regularly done in 82.8% of the respondents and in our study also 84.4% cleaned their tongue regularly. Limitations of this survey was less sample size. In the future, more inventions to maintain better oral hygiene and to educate more people about proper use and technique of oral hygiene maintenance can be done.

4. CONCLUSION

Within the limits of study, it can be concluded that the majority of the survey respondents had high knowledge, favourable attitude, and sound practices with respect to oral health. The study population exhibited a lack of awareness regarding the use of fluoride, the use of dental floss, and regular dental visits. Evidence-based reinforcement programs should be introduced to increase knowledge and awareness further among teenagers.

5. ACKNOWLEDGEMENT

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6. CONFLICT OF INTEREST: No Potential Conflict Of Interest Relevant To This Article Was Reported.

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