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## KNOWLEDGE AND AWARENESS ABOUT DENTAL FLOSS USAGE AMONG STUDENTS

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### ABSTRACT

Dental floss is an oral hygiene maintaining tool which is made to clean the oral cavity. It is made up of soft thread so that it can easily clean in between the teeth. Dental floss is mostly useful for people who have slight gaps in between their teeth where usually food impaction takes place. This food impaction can lead to tooth decay. Dental floss can reach places in the oral cavity where tooth brushes can't reach. A cross sectional survey was conducted to evaluate awareness about dental floss usage among students. The study population had a sample size of 100. The questions are self administered and they are designed based on awareness. A set of 20 questions were prepared and distributed through online google forms. Most of the population were aware about the use of dental floss and the usage of dental floss when required. Nearly 97% of the study participants received advice from dentists to use dental floss. The study proves that the majority of the selected population were aware of dental floss and its uses. So this may help them to protect from the dental caries.

**Key words: Dental floss; Students; Teeth; Awareness; Knowledge**

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## INTRODUCTION

Dental floss or it's also known simply as floss is a cord of thin filament used to remove food and dental plaque from between teeth into areas which the toothbrush is unable to reach [1]. The use of floss is commonly recommended in order to prevent gingivitis and buildup of plaque. Namely, the American dental Association claims that up to 80% of plaque can be eliminated with this method, and flossing may confer a practical benefit in individuals with orthodontic devices like braces who can't help with brushing [2-4]. They need special devices like dental floss to remove food accumulation [3]. However, empirical scientific evidence demonstrating the clinical benefit of flossing is adjacent to routine toothbrushes and alone remains limited [5, 6]. Dental professionals recommend that a person floss once per day before or after brushing to reach the areas that the brush will not reach and allow the fluoride from the tooth paste to reach in between the teeth [7, 8]. Floss is commonly supplied in plastic dispensers that contain 100 m of floss. After pulling approximately 40 cm of the floss the user pulls it against the blade in the dispenser to cut it off [9]. Then the user strings the piece of floss on a fork-like instrument or holds it in between their fingers using both

hands with about 1 to 2 cm of the floss exposed. Usually most of the users use the hand method only for flossing [10-12]. Then the user guides the floss between each pair of teeth gently against the side of the tooth in a C shape and guides it under the gum line [13, 14]. Manufacturer companies of dental floss should do proper advertisement of usage of dental floss for users. Students should be aware of dental floss [15, 16]. Dentists should adequately recommend their patients to use dental floss and they should explain how to use them [17, 18]. Parents should also support their children to use dental floss on a day-to-day basis [8, 18, 19]. Dentists should make efforts and conduct camps explaining how to use dental floss for students [20]. The main aim of the study is to assess knowledge and awareness about dental floss usage among students.

## MATERIALS AND METHODS

A cross sectional survey was conducted to evaluate awareness about dental floss usage among students. The study population has a sample size of 100. The participants did the survey voluntarily and no incentives were given to them. The study was conducted in the month of May, 2020. The study was approved by the institutional review board. Informed consent was obtained from the

participants. The questions were prepared after extensive review of existing literature. The questionnaire was reviewed and amendments were made to improve clarity of pertinent questions and eliminate ambiguous responses. The survey instrument was a structured questionnaire with both open and close ended questions. It consists of a brief introduction regarding research objectives. 20 questions were circulated to the participants via google forms. Only

completely filled online forms were included in the study. The filled responses were verified by two reviewers and the collected data was entered on the same day. The entered data analysed using SPSS statistics 2.0. As a version used for statistical analysis. Descriptive statistics was performed to calculate frequencies of categorical variables by using chi square test.

## RESULT AND DISCUSSION

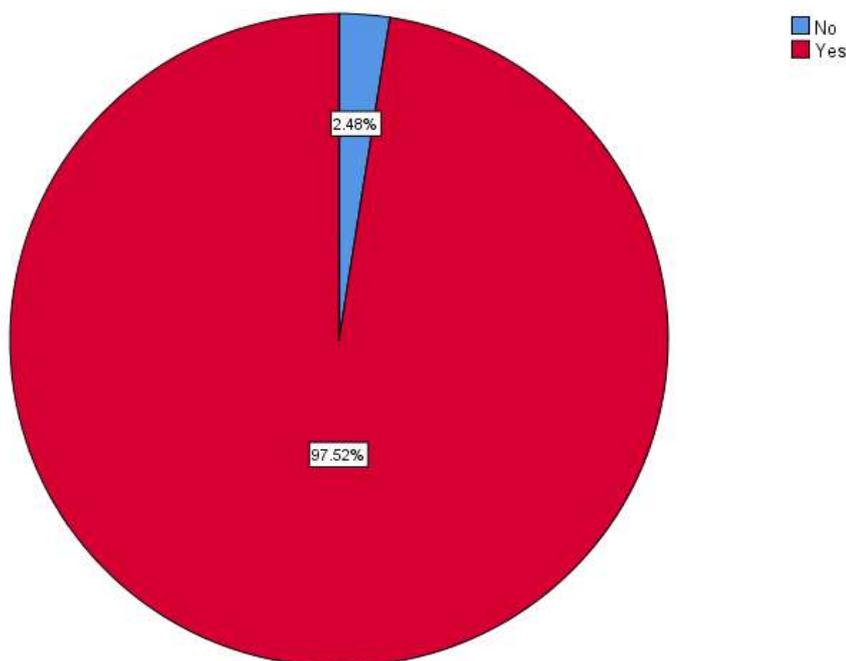


Figure 1: Pie chart depicts awareness among participants about the flossing and dental flossing. 97.52% of participants responded positively (red) and the remaining 2.48% responded negatively (blue).

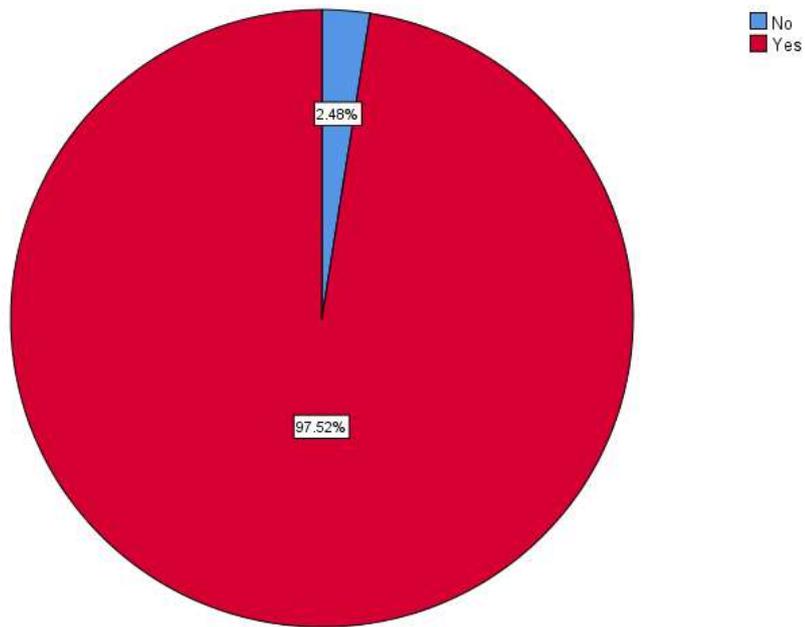


Figure 2: Pie chart depicts awareness among participants about role of dentist in advising participants about the dental floss. 97.52% of participants responded positively (red) and the remaining 2.48% responded negatively (blue).

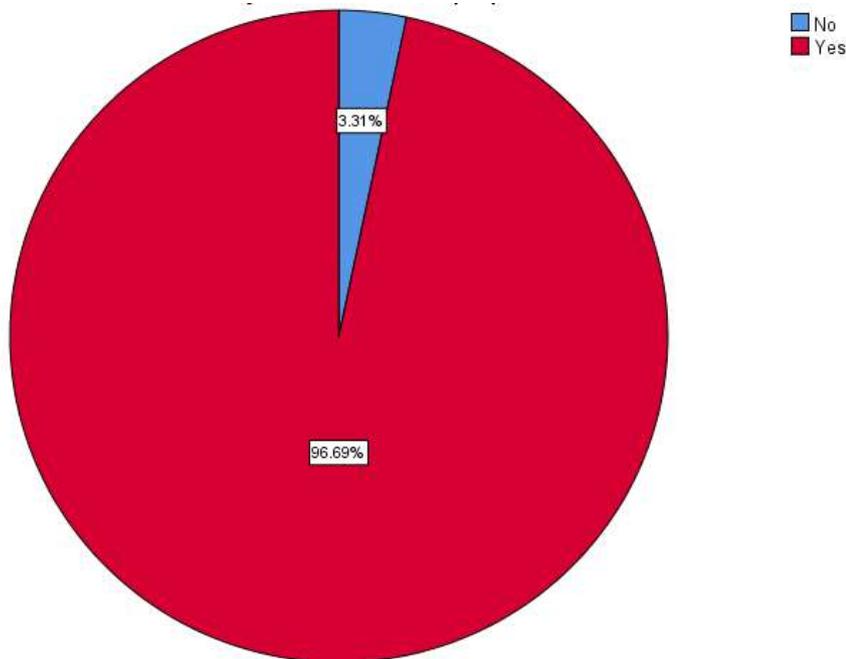


Figure 3: Pie chart depicts awareness among participants about the purpose of use of dental floss. 96.69% of participants were aware (red) and the remaining 3.31% were not aware (blue).

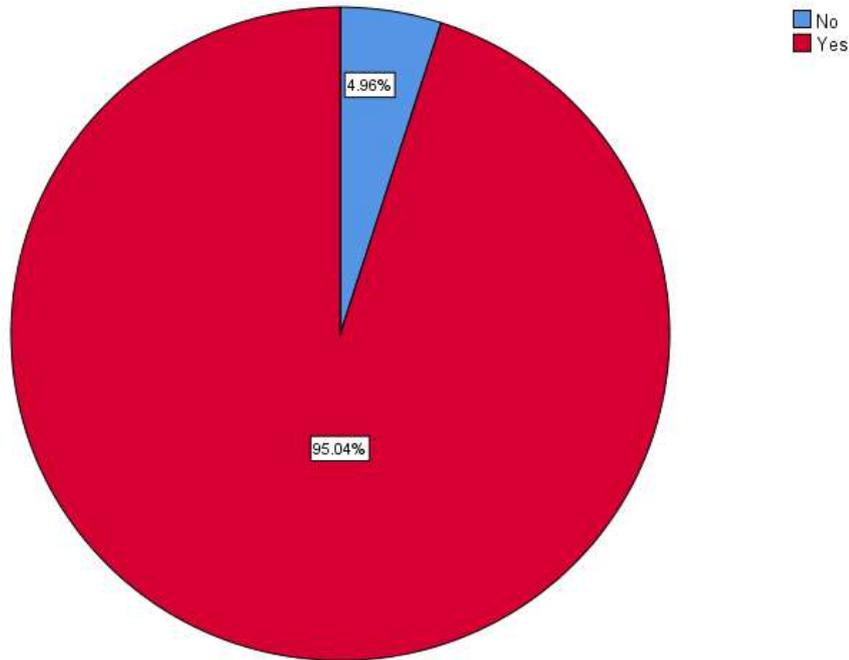


Figure 4: Pie chart depicts awareness among participants about the Perception on comparison between mouthwash and dental floss as an oral hygiene aid among participants. 95.04% of participants responded positively (red) and the remaining 4.96% responded negatively (blue).

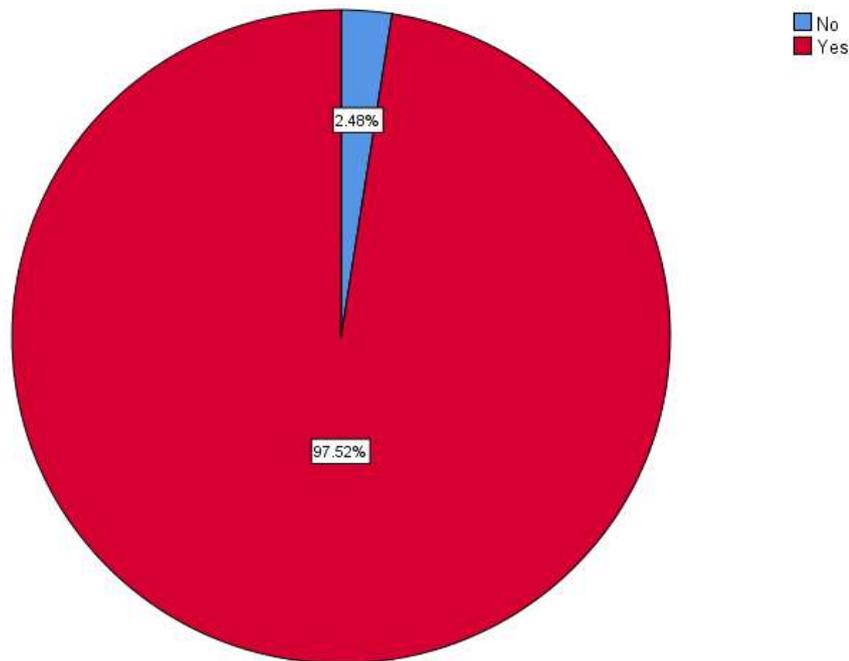


Figure 5: Pie chart depicts Awareness among participants about flossing in the process of prevention of dental caries. 97.52% of participants responded positively (red) and the remaining 2.48% responded negatively (blue).

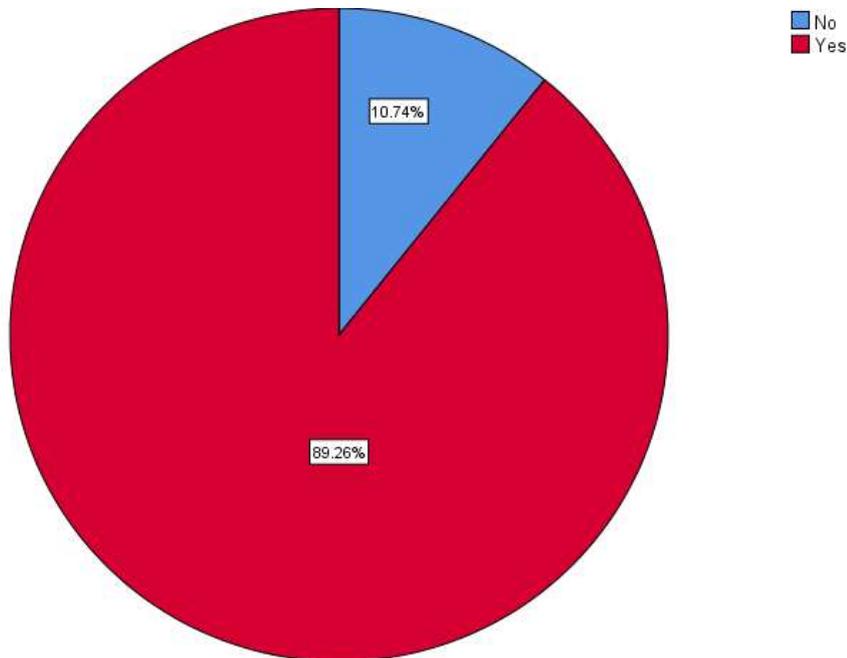


Figure 6: Pie chart depicts Awareness among participants about Perception of participants about comparison between floss and tooth brushing. 89.26% of participants responded positively (red) and the remaining 10.74% responded negatively (blue).

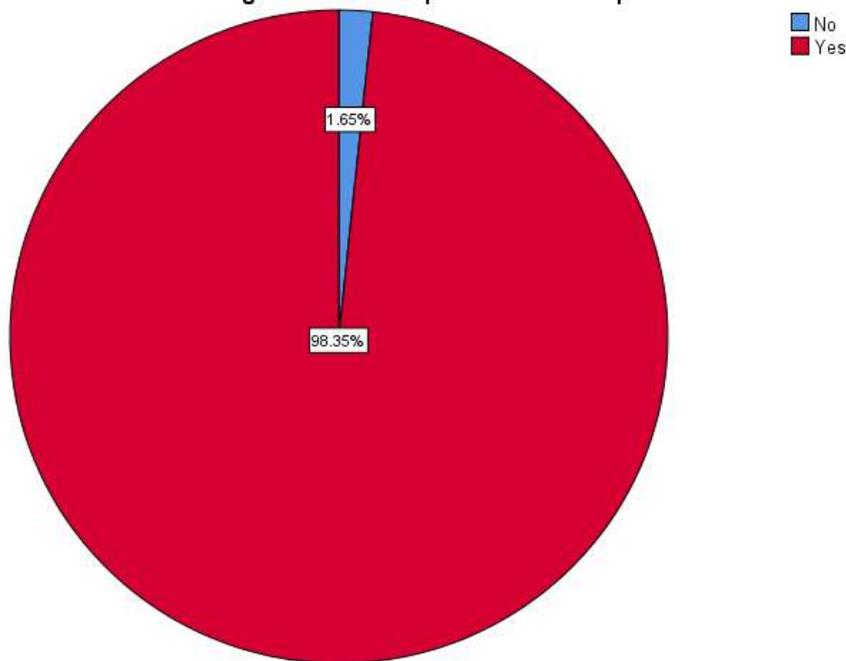


Figure 7: Pie chart depicts awareness among participants about the role of flossing in reducing food impaction. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

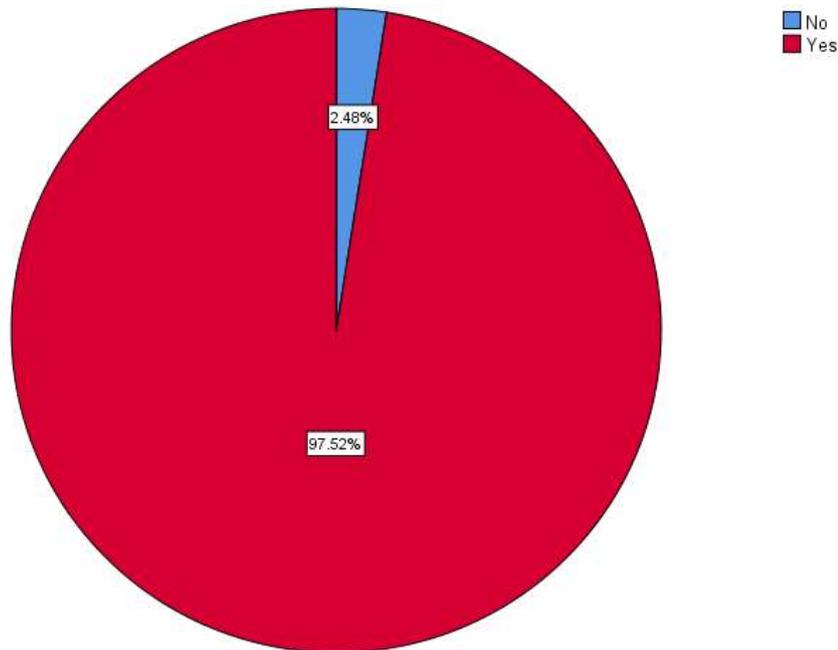


Figure 8: Pie chart depicts awareness among participants about role of dental floss in removing plaque in the process of prevention of dental caries. 97.52% of participants were aware (red) and the remaining 2.48% were not aware (blue).

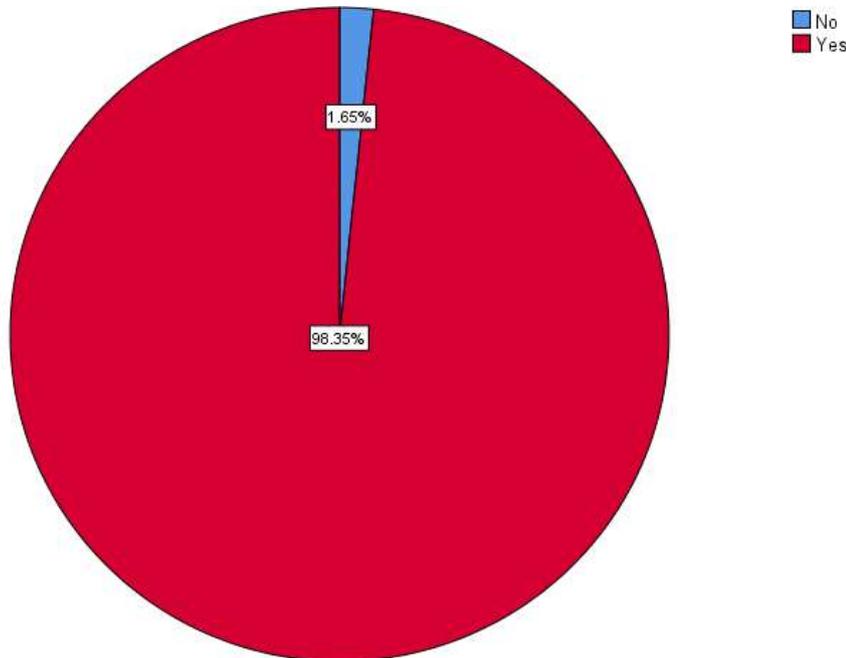


Figure 9: Pie chart depicts awareness among participants about perception towards tooth brushing not accessible to all areas of oral cavity and the need for dental floss to clean those areas. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

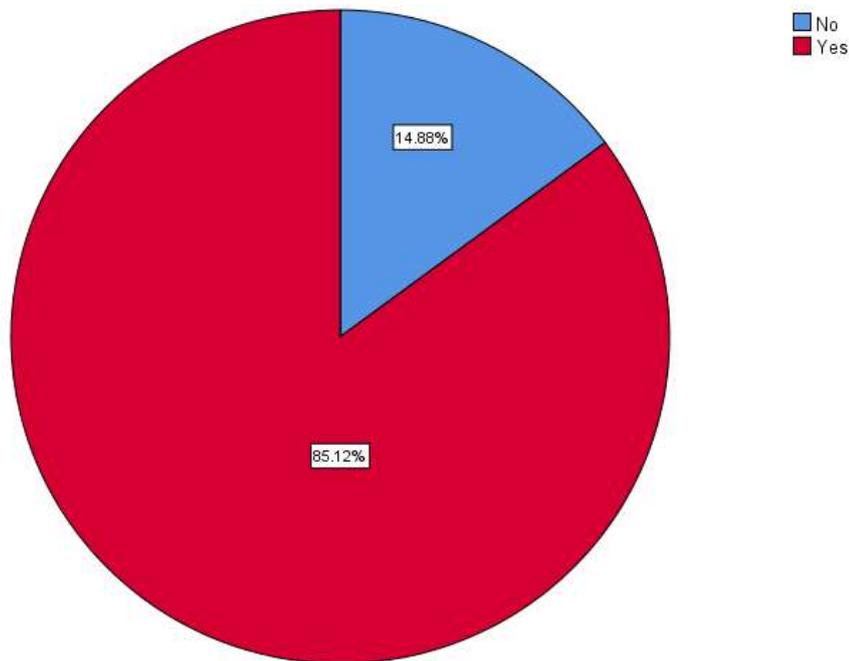


Figure 10: Pie chart depicts awareness among participants about perception of the population in reusing dental floss. 85.12% of participants responded that they will reuse (red) and the remaining 14.88% responded that they will not (blue).

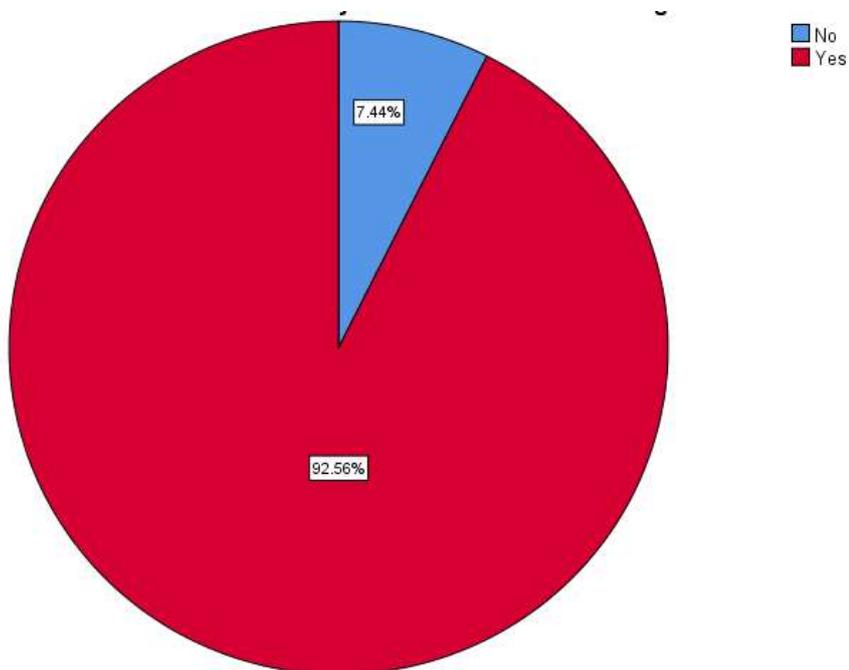


Figure 11: Pie chart depicts awareness about the methods of flossing. 92.56% of participants responded positively (red) and the remaining 7.44% responded negatively (blue).

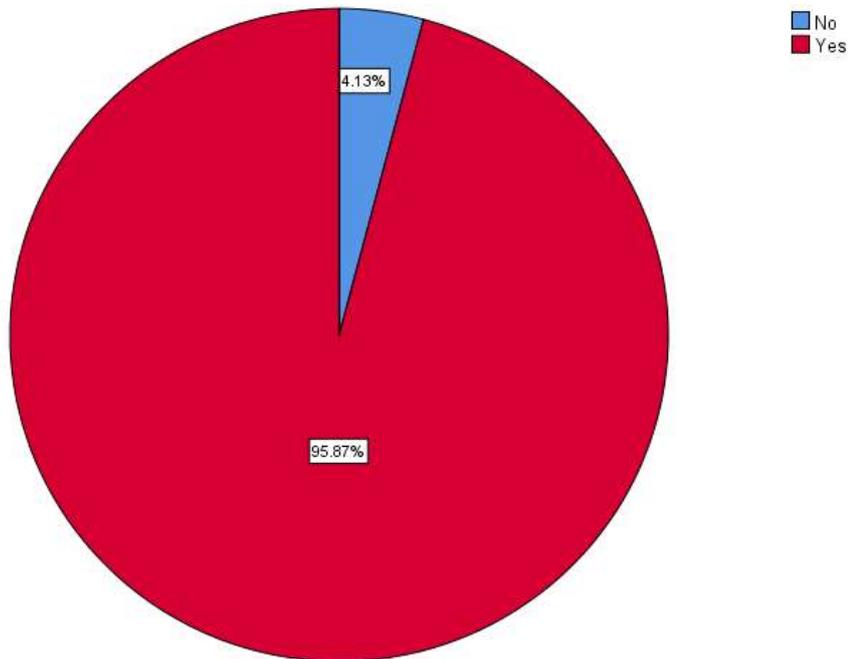


Figure 12: Pie chart depicts awareness about the methods of flossing. 92.56% of participants responded positively (red) and the remaining 7.44% responded negatively (blue).

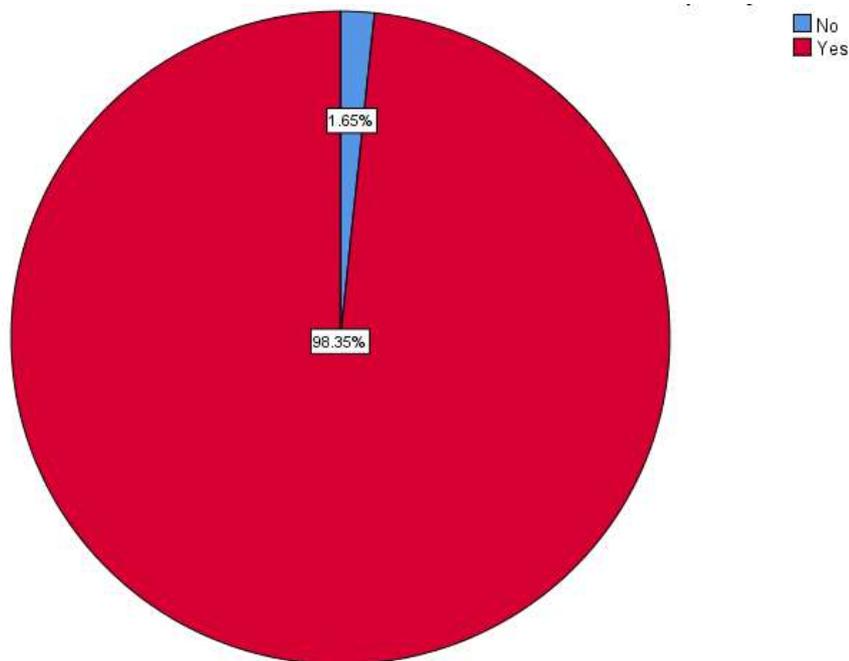


Figure 13: Pie chart depicts awareness about the knowledge on flossing frequently. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

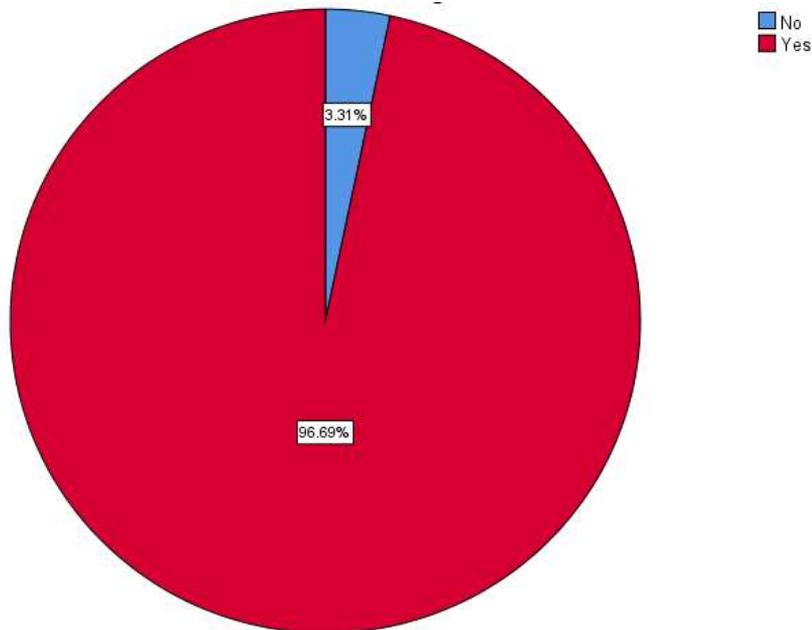


Figure 14: Pie chart depicts awareness about the perception that dental floss is good for adolescents. 96.69% of participants responded positively (red) and the remaining 3.31% responded negatively (blue).

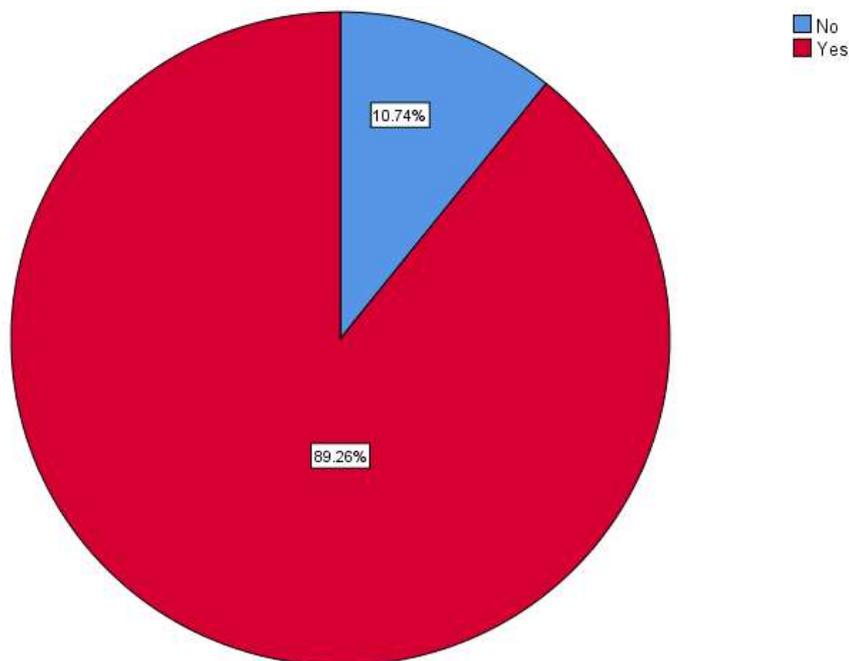


Figure 15: Pie chart depicts awareness about the awareness among students about usage of dental floss. 89.26% of participants responded positively (red) and the remaining 10.74% responded negatively (blue).

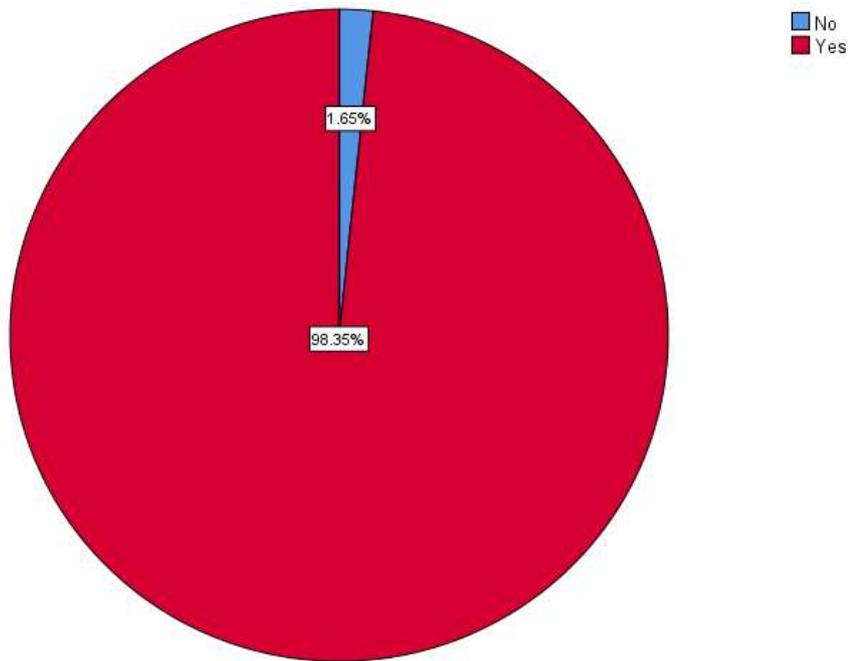


Figure 16: Pie chart depicts awareness about the initiative taken by parents to teach children about how to use dental floss. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

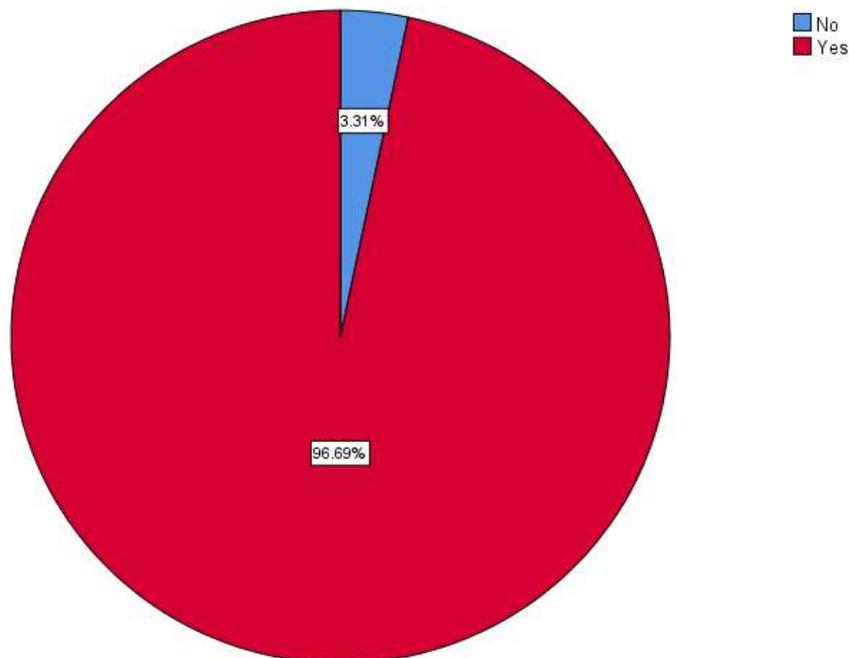


Figure 17: Pie chart depicts awareness about the companies manufacturing dental floss. 96.69% of participants responded positively (red) and the remaining 3.31% responded negatively (blue).

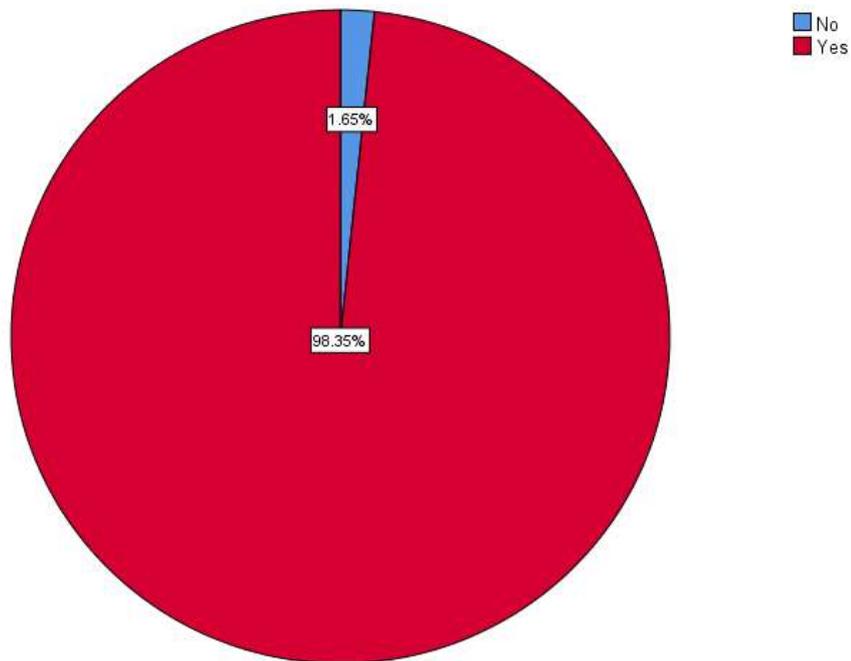


Figure 18: Pie chart depicts awareness among participants about dental floss provided by a dentist. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

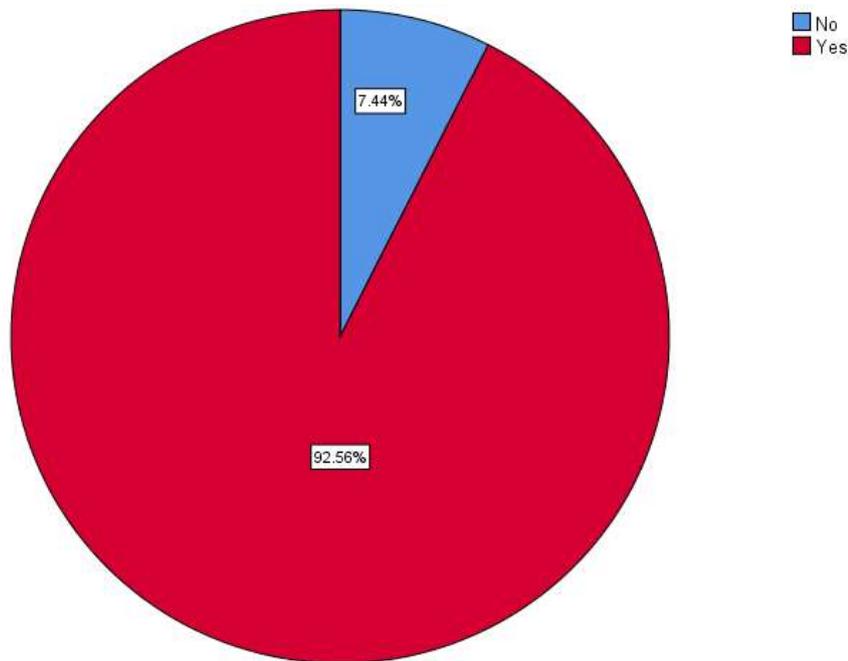


Figure 19: Pie chart depicts awareness about the knowledge on frequency of flossing among participants. 92.56% of participants responded positively (red) and the remaining 7.44% responded negatively (blue).

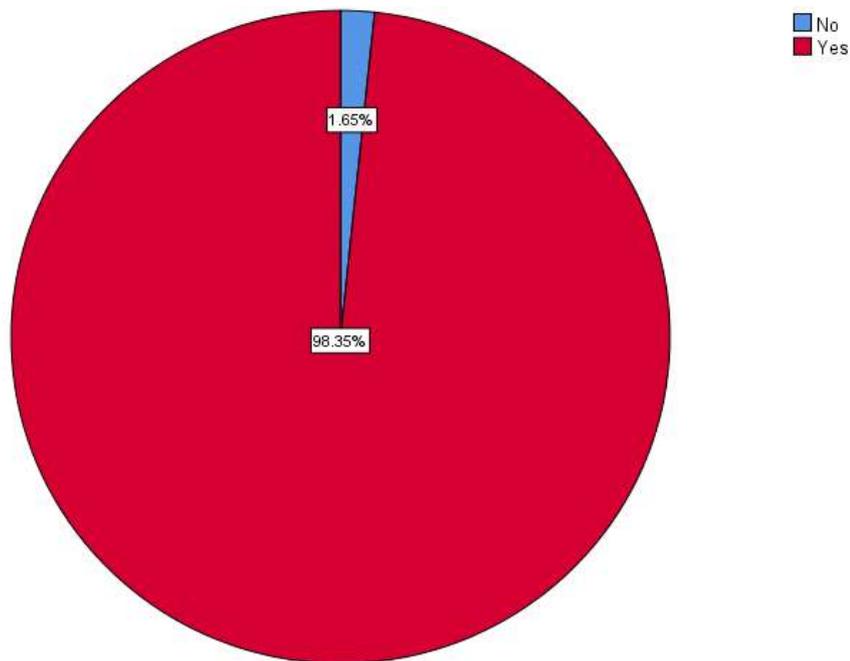


Figure 20: Pie chart depicts the perception about success rate of the survey. 98.35% of participants responded positively (red) and the remaining 1.65% responded negatively (blue).

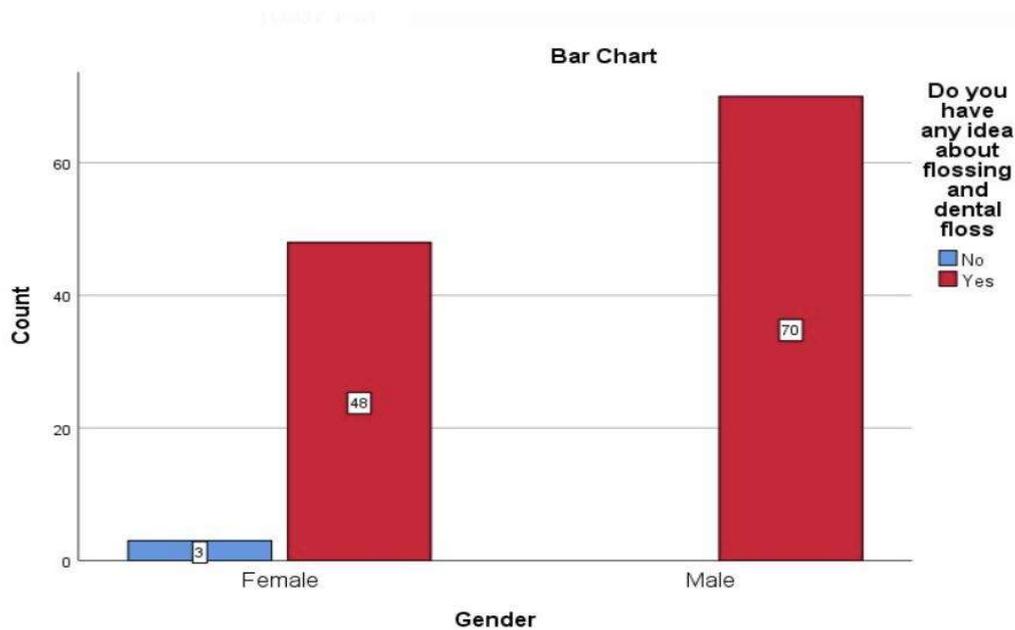
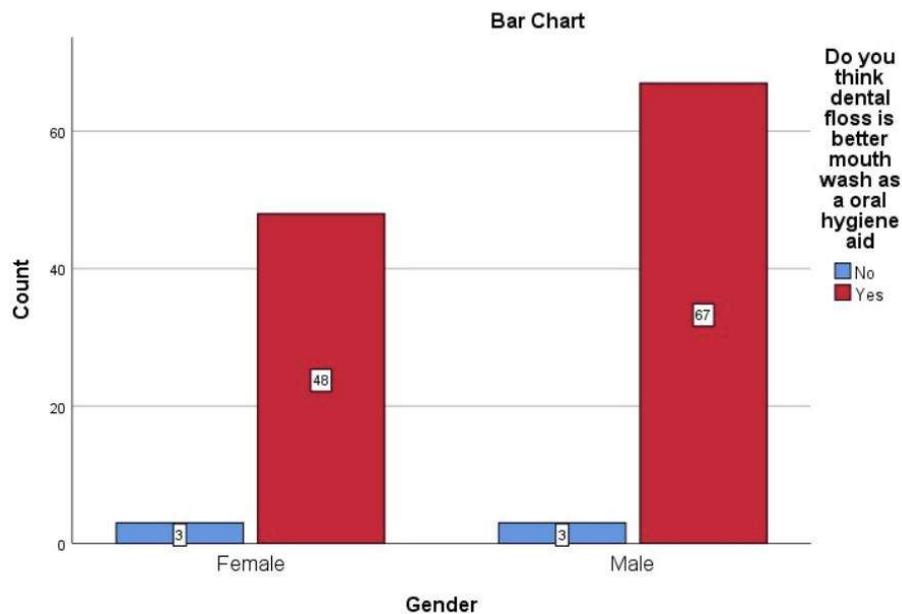
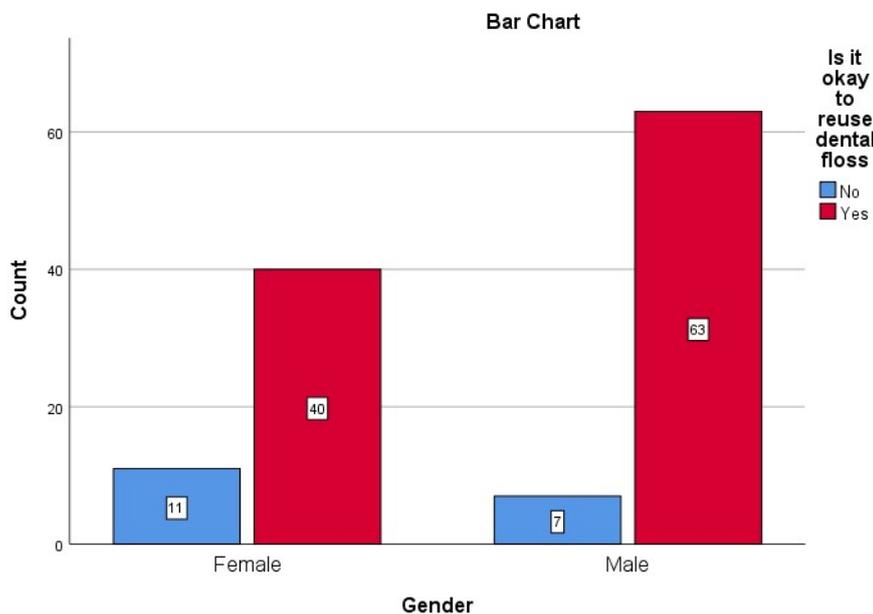


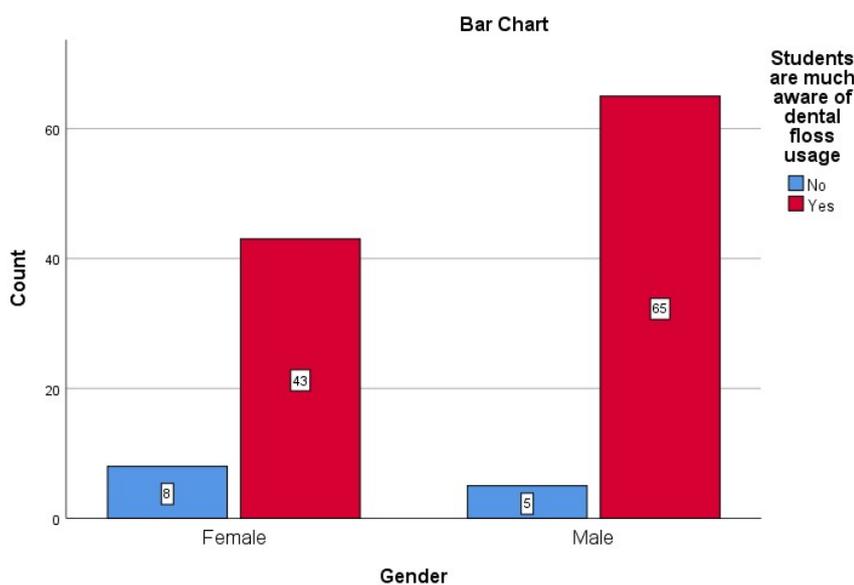
Figure 21: Bar graph representing association between gender and knowledge of dental floss. X axis represents the gender of study participants and Y axis represents the number of study participant's who were aware and not aware. All of the males are aware about the idea of flossing. Chi square test was done and the association was found to be significant, Pearson Chi square value: 4.222 , P value: 0.040 (<0.05) hence significant thereby indicating that awareness about flossing is all prevalent.



**Figure 22:** Bar graph representing association between gender and the respondents choice of either dental floss or mouthwash. X axis represents the gender of study participants and Y axis represents the number of study participants. Chi square test was done and the association yielded Pearson Chi square value: 0.160, P value: 0.69(>0.05) hence statistically not significant. Though many considered dental floss to be better than mouthwash, the results were statistically not significant.



**Figure 23:** Bar graph representing association between gender and attitude on reuse of dental floss. X axis represents the gender of study participants and Y axis represents the number of study participants. Chi square test was done and the association was not significant. Pearson Chi square value: 3.118, P value= 0.77(>0.05) hence statistically not significant. Though many considered reuse of dental floss was acceptable, it was statistically not significant.



**Figure 24:** Bar graph representing association between gender and awareness among students about dental floss. X axis represents the gender of study participants and Y axis represents the number of study participant's who were aware and not aware. Chi square test was done and the association was found to be statistically not significant. Pearson Chi square value: 2.246, P value= 0.13(>0.05). Though the majority of the students were aware of the dental floss usage, the results were statistically not significant.

The questionnaire is distributed and various responses collected for each and every question. The results were statistically studied and were analysed.

**Figure 1**, 97.52% responded positively (red) and the remaining 2.48% responded negatively (blue). **Figure 2**, 97.52% responded positively (red) that they are aware about the role of dentists in creating awareness concerned with dental floss and the remaining 2.48% responded negatively (blue) that they are unaware. From **Figure 3**, 96.69% respondents positively (red) that they are aware about the purpose of using dental floss and the remaining 3.31% responded negatively (blue) that they are unaware. From **Figure 4**, 95.04% responded positively (red)

that they are aware about the Perception on comparison between mouthwash and dental floss as an oral hygiene aid among participants and the remaining 4.96% responded negatively (blue) that they are unaware. From **Figure 5**, 97.52% responded as positively (red) that they are aware about flossing in the process of prevention of dental caries and the remaining 2.48% responded negatively (blue) that they are unaware. From **Figure 6**, 89.26% respondents positively (red) that they are aware about comparison between floss and tooth brushing and remaining 10.74% responded as negatively (blue) that they are unaware. From **Figure 7**, 98.35% respondents positively (red) that they are aware among participants about the role

of flossing in reducing food impaction and remaining 1.85% respondents negatively (blue) that they are unaware. From **Figure 8**, 97.52% responded positively (red) that they are aware among participants about role of dental floss in removing plaque in the process of prevention of dental caries and the remaining 2.48% responded negatively (blue) that they are unaware. From **Figure 9**, 98.35% responded as positively (red) that they are aware about perception towards tooth brushing not accessible to all areas of oral cavity and the need for dental floss to clean those areas and the remaining 1.65% respondents negatively (blue) that they are unaware. From **Figure 10**, 85.12% respondents positively (red) that they are aware among participants about perception of the population in reusing dental floss and the remaining 14.88% responded as negatively (blue) that they are unaware. From **Figure 11**, 92.56% responded as positively (red) that they are aware about the methods of flossing and 7.44% responded as negatively (blue) that they are unaware. From **Figure 12**, 95.87% respondents positively (red) that they are aware about the methods of flossing and remaining 4.13% responded as negatively (blue). From **Figure 13**, 98.35% responded positively (red) that they are aware about the knowledge on

flossing frequently and the remaining 1.65% responded negatively (blue) that they are unaware. From **Figure 14**, 96.69% responded positively (red) that they are aware about the perception that dental floss is good for adolescents and the remaining 3.31% responded as negatively (blue) that they are unaware. From **Figure 15**, 89.26% responded positively (red) that they are aware about the awareness among students about usage of dental floss and the remaining 10.74% responded negatively (blue) that they are unaware. From **Figure 16**, 98.35% responded positively (red) that they are aware about about the initiative taken by parents to teach children about how to use dental floss and 1.65% responded negatively (blue) that they are unaware. From **Figure 17**, 96.69% responded positively (red) that they are aware about about the companies manufacturing dental floss and remaining 3.31% responded negatively (blue) that they are unaware. From **Figure 18**, 98.35% responded positively (red) that they are aware about dental floss provided by a dentist and the remaining 1.65% responded negatively (blue) that they are unaware. From **Figure 19**, 92.56% responded positively (red) that they are aware about the knowledge on frequency of flossing among participants and 7.44% responded negatively (blue) that they are

unaware. From **Figure 20**, 98.35% responded positively (red) that they are aware about the success rate of the survey and reminding 1.65 people responded negatively (blue) that they are unaware. **Figure 21** representing the association between gender and knowledge of dental floss, p value was 0.040 ( $<0.05$ ) hence significant thereby indicating that awareness about flossing is all prevalent. **Figure 22** representing the association between gender and dental floss and mouthwash, P value: 0.69 ( $>0.05$ ) hence statistically not significant. **Figure 23** representing the association between gender and awareness about reuse of dental floss, P value= 0.77 ( $>0.05$ ) hence statistically not significant. **Figure 24** representing the association between gender and awareness among students about dental floss usage, P value= 0.13 ( $>0.05$ ). Though the majority of the students were aware of the dental floss usage, the results were statistically not significant.

In the present study (**Figure 3**) around 96.6% are aware of the use of dental floss. When compared with previous studies [2, 21], both the study results were similar. The responses of **Figure 6** in the current study when compared with previous study the survey results and responses of both the study were

agreeing with the results obtained [7, 11, 15, 22, 23]. It is evident from the **Figure 12** in the present study that about 95.5% of the participants believe that flossing leads to bleeding when compared with previous study the findings of present study correlates with the previous study results [7, 24]. In the current study **Figure 15** that around 89.26% students are aware about the usage of dental floss when compared with previous study the survey results were similar [14]. **Figure 17** of the present study was similar when compared with previous study [3, 4].

## CONCLUSION

Dental floss is mostly used by all age groups like children, adults, and old people. This survey helps to spread awareness about dental floss and its usage methods to the population. This study proves that most of the students and other selected populations are much aware of dental floss usage and its importance.

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