

Awareness of Interdental Aids and Chemical Plaque Control among Dental Students

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Abstract:-

➤ *Aim:*

To evaluate the awareness of interdental aids and their use in daily oral hygiene.

➤ *Objective:*

To estimate the proportion of students who are aware of interdental aids.

➤ *Background:*

Knowledge regarding the oral health practice and behavior is inefficient. This makes it important to have an understanding of interdental cleaning practices among dental students.

➤ *Material and Methods:*

A questionnaire based study was conducted to know the knowledge and practice about interdental aids on 82 final year dental students of Thai Moogambigai dental college and hospital.

➤ *Results:*

About 88% of the students were aware on usage of interdental aids among which only 28% were aware of both dental floss and interdental brushes. On correlation between the awareness among brushing and use of chemical plaque control mouth washes only 56% of population was aware of time interval between the two techniques. No statistical significance was observed about knowledge on time duration of brushing, type of brushes, frequency, and purpose of brushing.

➤ *Conclusion:*

This data can serve as a guide to implement mass educative programs providing information regarding interdental cleaning.

Keywords:- Practice, Floss, Oral Hygiene, Periodontal Disease.

I. INTRODUCTION

The two most common oral diseases which are prevalent are dental caries and periodontal diseases. Integration of professional and self-care activities and the student's attitude and behavior play a vital role in development and prevention of oral diseases.^[1]

Progression towards good lifestyle changes and establishment of preventive oral health care programs are all some factors which lead to a proper oral hygiene.

Oral hygiene care involves brushing, inter-dental cleaning, and use of mouth wash and tongue hygiene. Elimination of interdental plaque is vital. Lack of acceptance among few dental students presents a major drawback for prevention of common oral diseases. The students play a significant authority over their family, relatives and the community around them in spreading health awareness.

Mechanical debridement using toothbrush won't be suffice to remove the interdental plaque because the bristles are inaccessible in interdental areas where plaque retention is maximum. This situation is contemplated thereby giving rise to use of dental floss. Use of dental floss alone can provide effective plaque removal. But dental students often fail to encourage the patients to use it as an adjunct.^[2]

II. MATERIALS AND METHODS

A self-administrated questionnaire was distributed to dental students. It consisted of 20 questions. This present study was carried out amongst 82 final year students from Thai moogambigai dental college. This study encompasses the students' knowledge, their perspective viewpoint about interdental aids and its interpretation for spreading oral hygiene awareness. The questionnaire also focused on the vocabulary for better understanding among the dental students. The students were briefed about the study and concern was obtained from them. Ethical committee approval was obtained from the university.^{[3][4]}

➤ *Statistical Analysis:*

The collected data were subjected to statistical analysis. Data were analyzed using SPSS software Version 26.0.

III. RESULTS

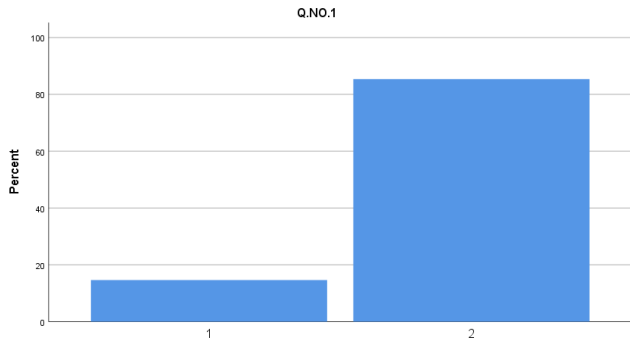


Fig 1

Responses from question number 1:
Are you aware of inter dental aids?

85.4% of the participants answered yes and 14.6% of the participants answered no for the question.

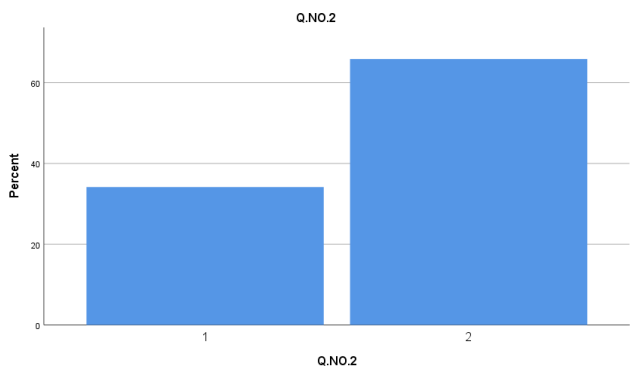


Fig 2

Responses from question number 2:

What are the interdental aids you are aware of?

About 65.9% of the participants were aware of the interdental aids and 34.1% of the participants were not aware.

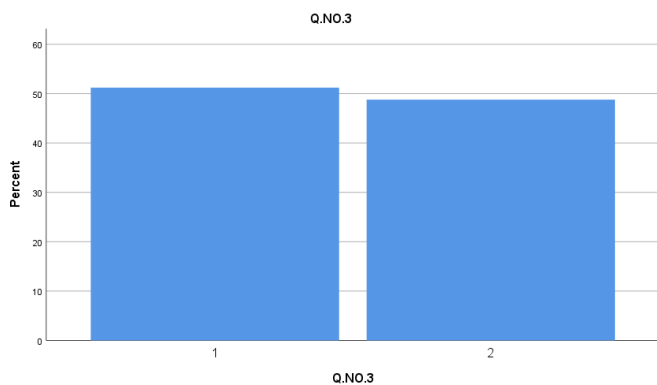


Fig 3

Responses for question number 3:

What brushing technique do you prefer for patients with periodontitis?

51.2% of the participants gave the wrong answer and about 48.8% of the participants gave the right answer as modified bass technique.

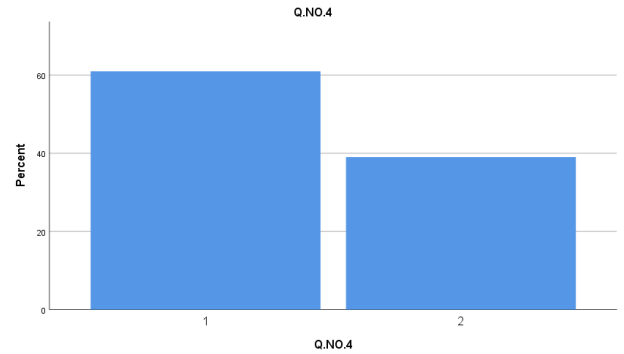


Fig 4

Responses for question number 4:

What is the percentage of chlorhexidine in Indian mouthwashes?

About 39% of the participants gave the right answer which is 0.2% and 61% of them gave the wrong answer.

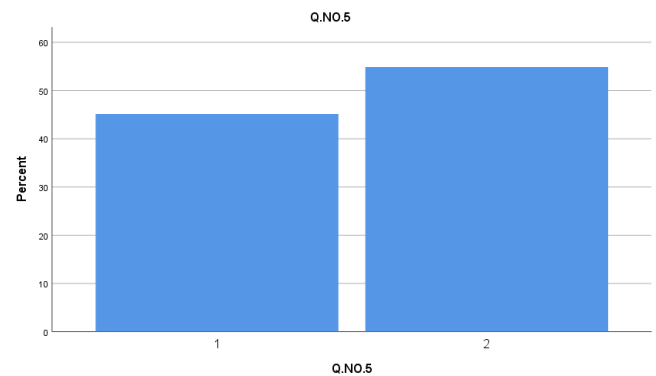


Fig 5

Responses for question number 5:

Major causes of periodontitis?

About 54.9% of the participants gave the right answer as poor oral hygiene; hormonal imbalance and diabetes are all major causes. 45.1% of them gave the wrong answer.

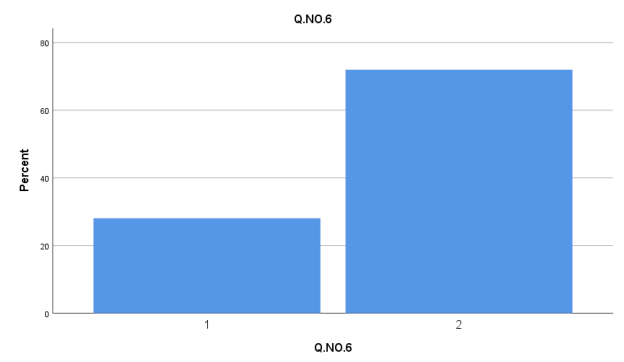


Fig 6

Responses from question number 6:
Once in how many months would you prefer to change the tooth brush?

About 72% of the students gave the right answer which is 3 months and about 28% of them gave the wrong answer.

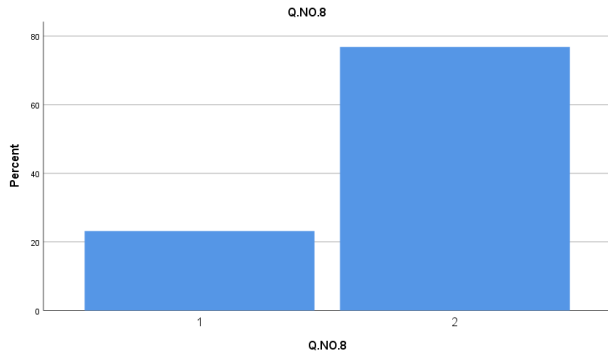


Fig 7

Responses from question number 8:
How many minutes of brushing do you prefer?

About 76.8% of the participants chose the right answer which is 2 minutes and 23.2% of the participants chose the wrong answer.

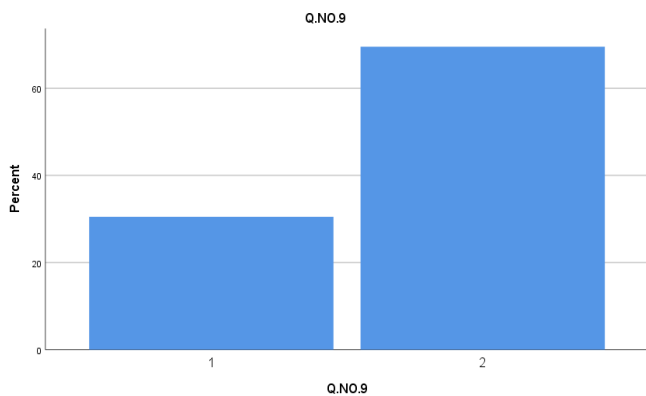


Fig 8

Responses from question number 9:
Would you prefer using mouthwash regularly?

About 69.5% of the students chose yes while the other 30.5% of them chose no.

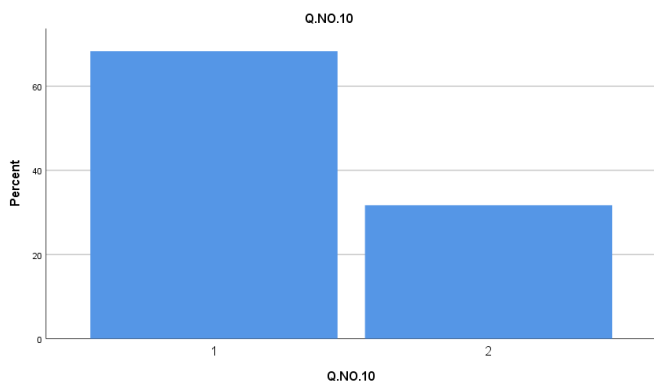


Fig 9

Responses from question number 10:
How much time interval must be given between brushing and mouth washing?

About 68.3% of the students chose the wrong answer while other 31.7% of them chose the right answer which is 30 minutes.

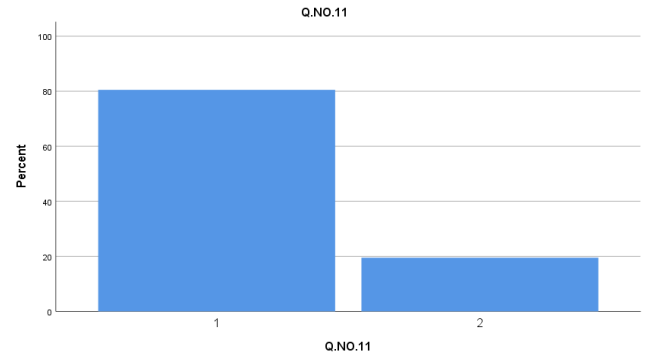


Fig 10

Responses from question number 11:
Why should an ideal duration be given between brushing and mouth washing?

About 19.5% of the students chose the right answer i.e. to inhibit the bicationic effect and 80.5% of them chose the wrong answer.

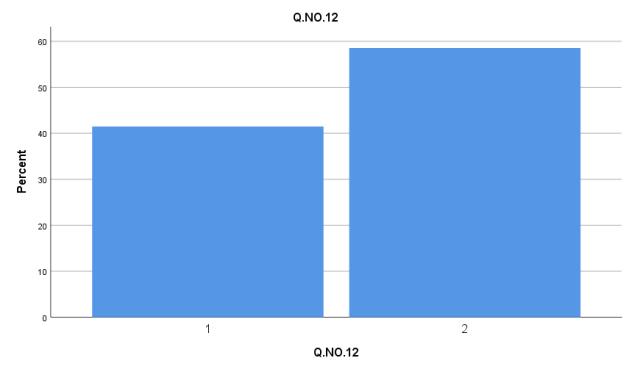


Fig 11

Responses from question number 12:
Which type of mouth wash do you prefer for patients with periodontitis?

About 58.5% of the students chose the right answer and 41.5% of them chose the wrong answer.

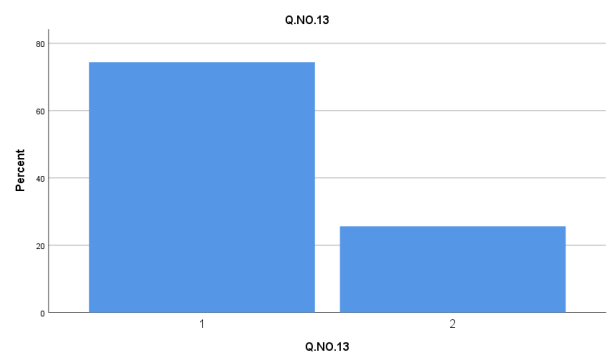


Fig 12

Responses from question number 13:
What is the main disadvantage of chlorhexidine in long term usage?

About 74.4% of the students gave the wrong answer and about 25.6% gave the correct answer as carcinogenic and bad breath.

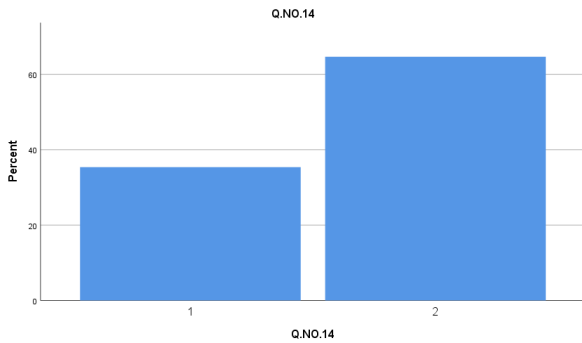


Fig 13

Responses from question number 14:
What kind of bristles do you prefer for patients with periodontitis?

About 64.65% of the participants gave the right answer which is soft bristles while the other 35.4% of the students gave the wrong answer.

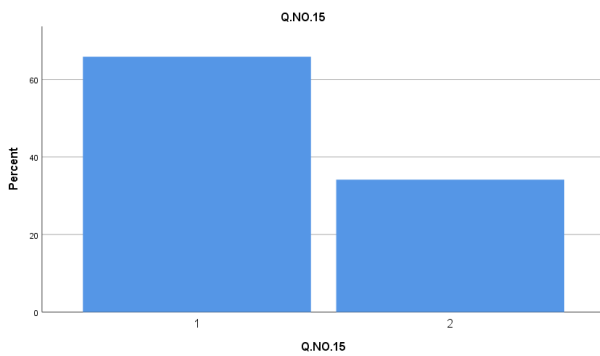


Fig 14

Responses from question number 15:
Do you think electronic toothbrushes are effective than manual tooth brushes?

About 65.9% of the students gave the wrong answer while the other 34.1% of the students chose the right answer.

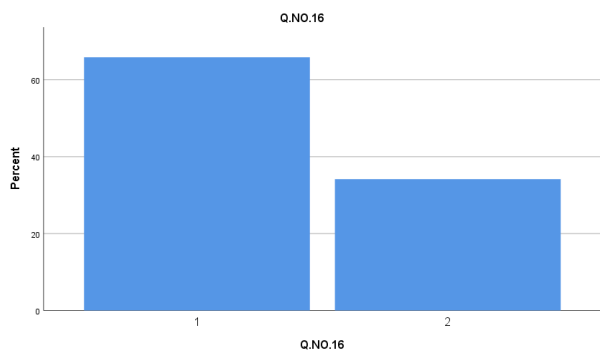


Fig 15

Responses from question 16:
Do you prefer tongue cleaners for patients with oral thrush?
65.9% of the students gave the wrong answer and 34.1% of the students gave the right answer

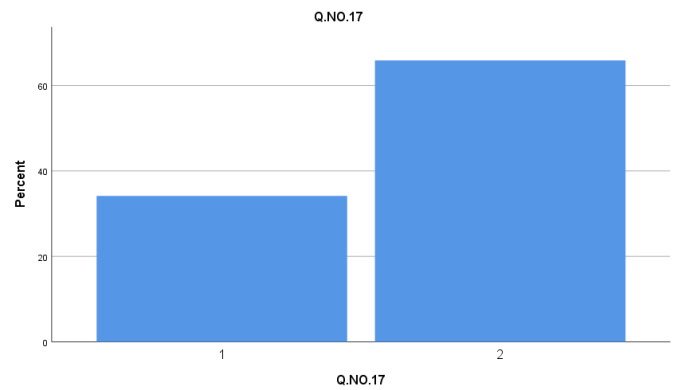


Fig 16

Responses from question number 17:
What do you think is the main purpose of brushing?
65.9% of the participants chose the right answer which is biofilm removal and about 34.1% of the other participants chose the wrong answer.

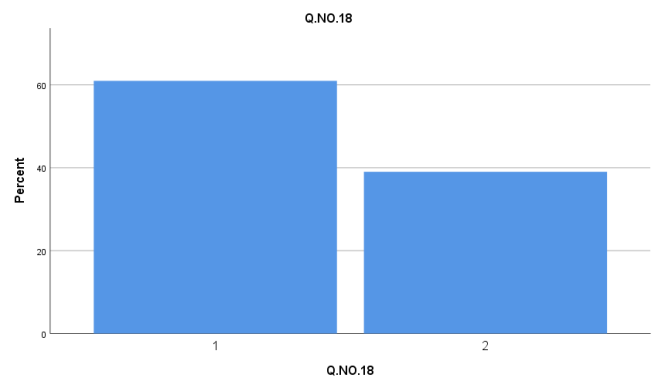


Fig 17

Responses from question number 18:
Disadvantages of not using inter dental aids?
61% of the students chose the wrong answer and the other 39% of the students chose the right answer.

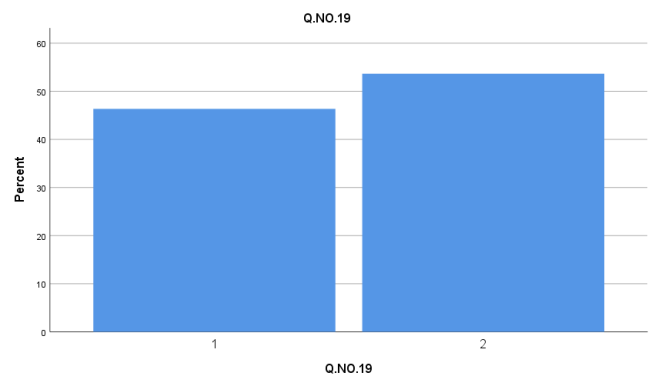


Fig 18

Responses from question number 19:

Which one of the ingredients is not present in the dentifrices?

53.7% of the participants chose the right answer which is resin and the other 46.3% of the participants chose the wrong answer.

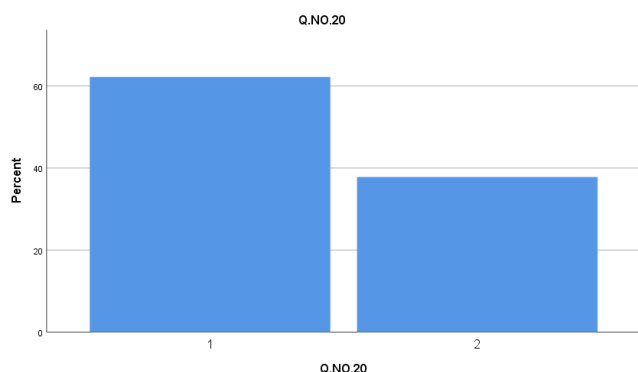


Fig 19

Responses from question number 20:

Who discovered tooth brush?

62.2% of the participants chose the wrong answer and the other 37.8% of the other participants chose the right answer which is William Addis.

IV. DISCUSSION

The removal of inter-proximal plaque is considered to be important for the maintenance of gingival health, prevention of periodontal diseases and reduction of caries. Unfortunately, the tooth brush is relatively ineffective at removing inter-proximal plaque and therefore patients need to resort to additional home care techniques such as interdental aids and chemical plaque control.

The above results are obtained from the students in a private dental college in Chennai. Chlorhexidine in mouthwashes play a very important role as an adjunct to interdental aid. A majority of students did not know the correct percentage of chlorhexidine in Indian mouthwashes which is 0.2%. This might be due to lack of knowledge among the dental students about interdental aids. Also, unfortunately about 61% of the dental students were unaware of the dis-advantages of using chlorhexidine over a long period of time. While in reality, though chlorhexidine is very effective in maintaining the oral health among people, patients have reported with staining of tooth surfaces after a long time usage of chlorhexidine or might also lead to alteration of taste or it might also lead to tartar formation. This might be due to lack of proper knowledge about the usage. They should be briefed about the instructions for usage.^[5] They should be made to aware that it need not be used on a long term basis if they have a proper maintenance.

More than half of the students did not know the correct brushing technique for patients with periodontitis. Also, unfortunately, the majority of students did not know that the tooth brush should be changed once in 3 months.

This might be due to unawareness among the dental students about the dental problems caused due to prolonged usage of the same toothbrush more than 3 months. Wearing of enamel and dentine can be dramatically increased if toothbrushing follows an erosive challenge for a long period of time. It is also known to cause gingival abrasion. They should be educated about these facts.^[8]

Fortunately, the majority of the students are aware of the duration of brushing which will increase the knowledge among the patients treated by these dental students which definitely benefit the patients who are unaware of the dis-advantage of over brushing.^{[11][12]}

The recent study results shows that , about 68.3% of the participants did not know the time interval needed between brushing the teeth and using a mouth wash after brushing. The students are not aware that if mouthwashes are used right after brushing the teeth, it might wash away the fluoride in the toothpaste left on the teeth surface which will inadvertently lower the anticaries, remineralization and antibacterial effects of fluoride. Hence there should be at least 30 minutes time gap between the usages as fluorides play a very important role in prevention of dental caries.

About 65.9% of the students are not aware that electronic toothbrushes are more effective than the manual toothbrushes. This shows that the students are lacking knowledge about the advancements among the dental aids and their effects.

Also, majority of the students answered "yes" when asked if they will prescribe tongue cleaners for patients suffering from oral thrush. While in real, the usage of tongue cleaners in patients with oral thrush might actually aggravate the problem. Again, this might be due to lack of proper knowledge about the usage of dental aids among the dental students.^[9]

Class 2 caries are more common in patients who do not use inter-dental aids in their regular dental hygiene practice. Also, about 61% of the dental students did not know the dis-advantages of not using the inter-dental aids.^[9] This might again be due to lack of knowledge about the importance of inter-dental aids.

William Addis discovered tooth brush about 62% of the participants were unaware of the discoverer of tooth brush.

V. CONCLUSION

In conclusion, the survey conducted among the dental students of a dental college at Chennai shows that the dental students are not fully aware of inter dental aids and it's importance. This may be due lack of information and the wrong beliefs among the dental students about inter dental cleaning.

➤ *Recommendation:*

Formulate strategies to develop and implement new techniques to improve knowledge among dental students about the importance and development of dental aids.

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TABLES AND ILLUSTRATION

QUESTION	TOTAL/MEAN	OBSERVED/S.D	SIGNIFICANCE LEVEL	SIGNIFICANCE	P VALUE
Q1	1.85	.356	S.E-0.334511	YES	<0.05
Q2	1.66	.477	.00575	YES	<0.05
Q3	1.49	.503	.197	NO	>0.05
Q4	1.39	.491	.190	NO	>0.05
Q5	1.55	.501	.00249	YES	<0.05
Q6	1.72	.452	.049	NO	>0.05
Q7	1.63	.485	.00402	YES	<0.05
Q8	1.77	.425	.064	NO	>0.05
Q9	1.70	.463	.175	NO	>0.05
Q10	1.32	.468	.00311	YES	<0.05
Q11	1.20	.399	.144	NO	>0.05
Q12	1.59	.496	.072	NO	>0.05
Q13	1.26	.439	.00243	YES	<0.05
Q14	1.65	.481	.127	NO	>0.05
Q15	1.34	.477	.000284	YES	<0.05
Q16	1.34	.477	.211	NO	>0.05
Q17	1.66	.477	.211	NO	>0.05
Q18	1.39	.491	.119	NO	>0.05
Q19	1.54	.502	.391	NO	>0.05
Q20	1.38	.488	.180	NO	>0.05

The chi-square statistic is 386. 262. The p-value is .0001. The result is significant at $p < .05$.

Table 1:- Table showing the significance levels and Correlations between the variables by Pearson coefficient correlation analysis.

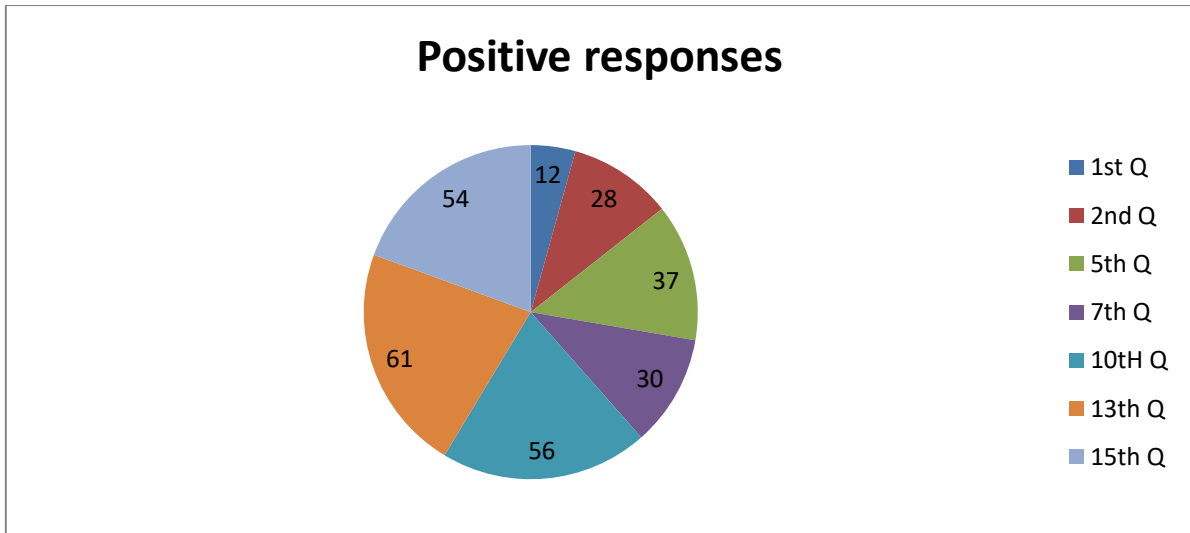


Fig 20:- Pie Diagram showing the percentage of significant response to the questions on interdental aids