

Knowledge On Morphology Of Deciduous Teeth Among Dental Students - A Cross Sectional Survey

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ABSTRACT :

BACK GROUND :

Deciduous teeth is the official term for baby teeth , milk teeth (or) primary teeth. Deciduous teeth start developing during the embryonic stage and commonly begin to come in about 6 months. They are usually lost and replaced by permanent teeth and also remain functional for many years in the absence of their permanent teeth .

AIM:

To evaluate the knowledge about morphology of deciduous teeth among undergraduates.

MATERIALS AND METHODS:

A survey was conducted among dental students on morphology of deciduous teeth. The questionnaire was distributed through an online survey link (google forms). Responses were collected , results were calculated and statistically analysed through SPSS software.

RESULTS :

There were 100 responses collected from dental UG students for this survey. From the responses collected, it is shown that first year students(48 %) were more knowledgeable about the morphology of deciduous teeth than second(9%),third (11%),final year students(13%) and interns(19%). The association between year of study and knowledge about morphology of deciduous teeth is evaluated by pearson chi square test yields P value of 0.693 which is statistically non - significant.

CONCLUSION :

It was concluded that first year students have more knowledge when compared to second, third , final year students and interns. This research had helped the students in filling the knowledge gap regarding morphology of deciduous teeth.

KEYWORDS: Morphology, Deciduous teeth, Novel method , Dental students

INTRODUCTION :

Deciduous teeth are also known as baby teeth, milk teeth or primary teeth. The colour of deciduous teeth is white, hence called milk teeth (1). Deciduous teeth start developing during the embryonic stage and commonly begin to come in about 6 months after birth (2,3).

There are 20 primary teeth - 10 upper and 10 lower and they are central Incisors, lateral incisors, canines, 1st molar, 2nd molar. They are usually lost and replaced by permanent teeth and also remain functional for many years in the absence of their permanent teeth (4).

The first teeth to erupt are mandibular central incisors at the age of 6 months and the last are the maxillary second molar at the age of 20 months. The first teeth to exfoliate are central incisors at the age of 7 and the last teeth to exfoliate are second molars at the age of 11 (4-6).

Deciduous teeth maintain the arch length and are important for the development of the child's speech and chewing. There are various differences between the primary and permanent teeth and the students are supposed to know to identify them during the clinical procedures. This is a novel technique study. Our team has extensive knowledge and research experience that has translated into high quality publications (7-26). Thus, the aim of this study is to assess the knowledge and awareness about deciduous teeth among dental undergraduate students.

MATERIALS AND METHODS :

This is a questionnaire based cross sectional study. The survey was conducted among 100 dental students in a private dental college. Questions were prepared and distributed among dental students through online based survey forms (ie.,google forms). The responses were collected and tabulated in MS excel sheet and data entered in SPSS software and the results were represented in a bar graph and pie charts. Chi square was used to analyze and comparative bar graphs were plotted and it is statistically significant only if the P value is less than 0.05.

THE QUESTIONNAIRE IS AS FOLLOWS :

- 1.Do you know the other names of deciduous teeth ?
- 2.Do you know which of the following teeth are absent in deciduous teeth ?
- 3.Do you know which of the following is the colour of deciduous teeth ?
4. Do you know how the Maxillary 1st molar resembles ?
- 5.Do you know where the Tubercle of carabelli is present ?
- 6.Do you know about the resemblance of the primary mandibular second molar ?
- 7.Do you know which of the following is not true about deciduous teeth ?

8. Do you know which of the following primary teeth does not resemble any other teeth that appear strange and primitive?

9. Do you know which of the following is the length of the root of the mandibular canine ?

10. Do you know which of the following is the labio / bucco - lingual diameter of the crown of the first molar in maxilla?

RESULTS :

There were 100 responses from dental UG students for the survey. In our study, the majority 78.22% of the population weren't aware about other names of the deciduous teeth and 21.78% of the population were aware of other names of deciduous teeth (**figure 1**). In our study, the majority 78.22% of the population were not aware that premolars are absent in deciduous teeth and 21.78% of the population were aware that premolars are absent in deciduous teeth (**figure 2**). Also, the majority 64.36% of the population weren't aware and 35.64% of the population were aware about the colour of deciduous teeth (**figure 3**). In our study, the majority 78.22% of the population were not aware and only 21.78% of the population were aware that the maxillary first primary molar is unique and does not resemble any other teeth (**figure 4**). In our study, the majority 63.37% of the population were not aware and only 36.63% of the population were aware that the tubercle of carabelli is present in the primary maxillary second molar (**figure 5**). In our study, the majority of 51.05% of the population were not aware and 48.51% of the population only were aware that the primary mandibular second molar resembles the permanent mandibular first molar (**figure 6**). Also, the majority of 61.39% of the population were not aware and only 38.61% of the population were aware about the roots of deciduous teeth (**figure 7**). In our study, the majority 66.34% were not aware and 33.66% of the population only were aware that the primary mandibular first molar doesn't resemble any other teeth and appears strange and primitive (**figure 8**). In our study, the majority 51.49% of the population were not aware and only 9.90% of the population were aware about the length of root of the canine in the mandible (**figure 9**). Also, the majority 81.19% of the population were not aware and only 18.81% of the population were aware about the labial / buccolingual diameter of the crown of the first molar in maxilla (**figure 10**). In our study, the association between the year of study and presence of the tubercle of carabelli was depicted as a bar graph with Pearson chi square test and P value is 0.142 which is statistically non - significant (**figure 11**). In our study, the association between years of study and primary teeth that do not resemble any other teeth that appear strange and primitive was depicted as a bar graph with Pearson chi square test and P value is 0.527 which is statistically non - significant (**figure 12**). In our study, the association between year of study and teeth that are absent in deciduous teeth was depicted as a bar graph with Pearson chi square test and P value is 0.693 which is statistically non - significant (**figure 13**).

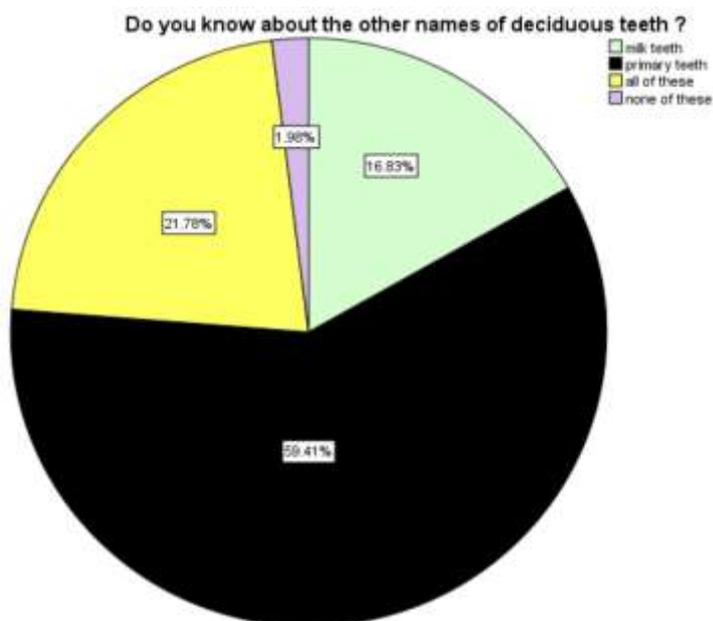


Figure 1 : Pie chart shows response for the other names for deciduous teeth. Light green represents milk teeth, Black represents primary teeth, lavender represents none of these, yellow represents all of these. Only 21.78% of the population were aware about other names of deciduous teeth whereas 59.41% (primary teeth) , 16.83% (milk teeth) , 1.98% (none of these) were unaware about the other names of primary teeth.

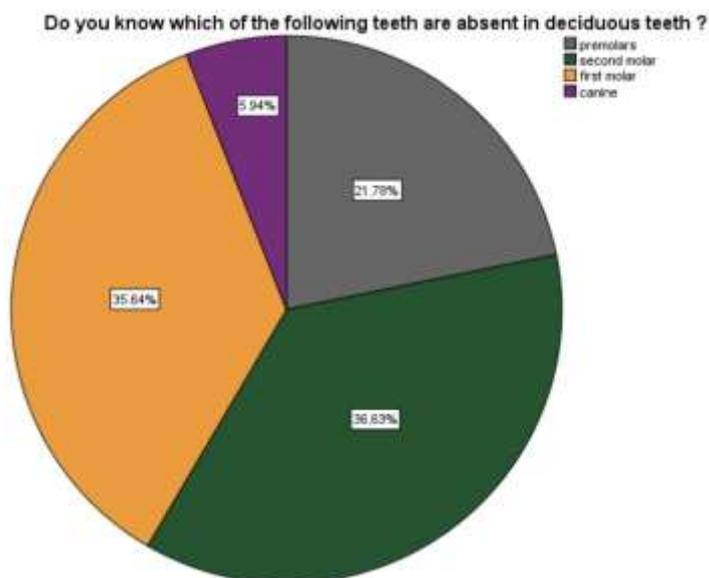


Figure 2: Pie chart shows response for the teeth that are absent in deciduous teeth . Grey represents premolars. Dark green represents second molars. Mustard yellow represents the first molars. Violet represents canines. Only 21.78% of the population were only aware that premolars are absent in deciduous teeth whereas 36.63% (second molars) , 35.64% (first molar) , 5.94% (canine) were unaware that premolars are absent in deciduous teeth.

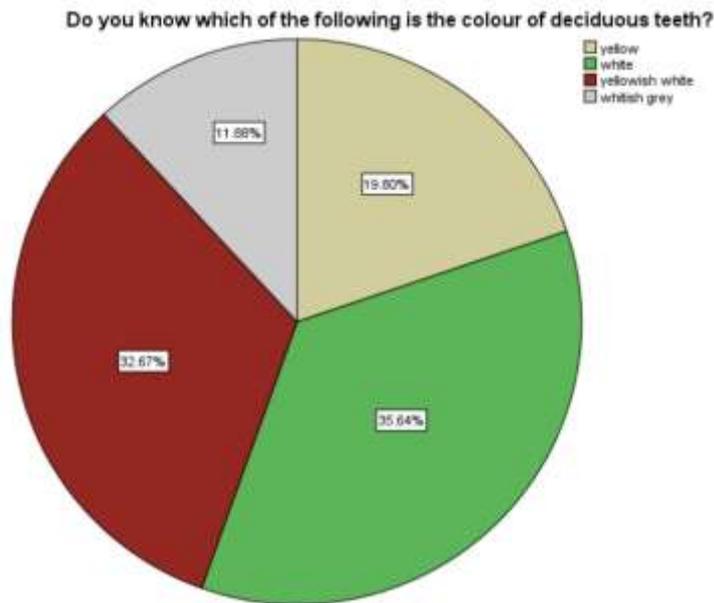


Figure 3 : Pie chart shows response for the colour of deciduous teeth. Cream colour represents yellow , leaf green represents white , maroon represents yellowish white , silver represents whitish grey. Only 35.64% of the population were aware that white is the color of deciduous teeth whereas 19.80% (yellow), 32.67% (yellowish white), 11.88% (whitish grey) were unaware that white is the colour of deciduous teeth .

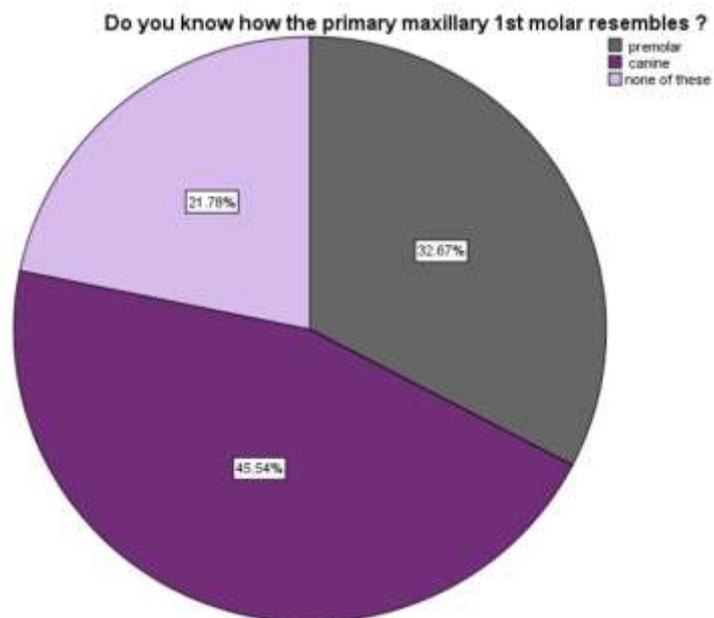


Figure 4 : Pie chart shows response for morphology of maxillary 1st primary molar. Grey represents premolar. Violet represents canine. Lavender represents none of these. Only 21.78% of the population were aware that a maxillary first primary molar is unique and it does not resemble any teeth whereas

32.67% (premolar) , 45.54% (canine) were unaware that a maxillary first primary molar is unique and it does not resemble any teeth .

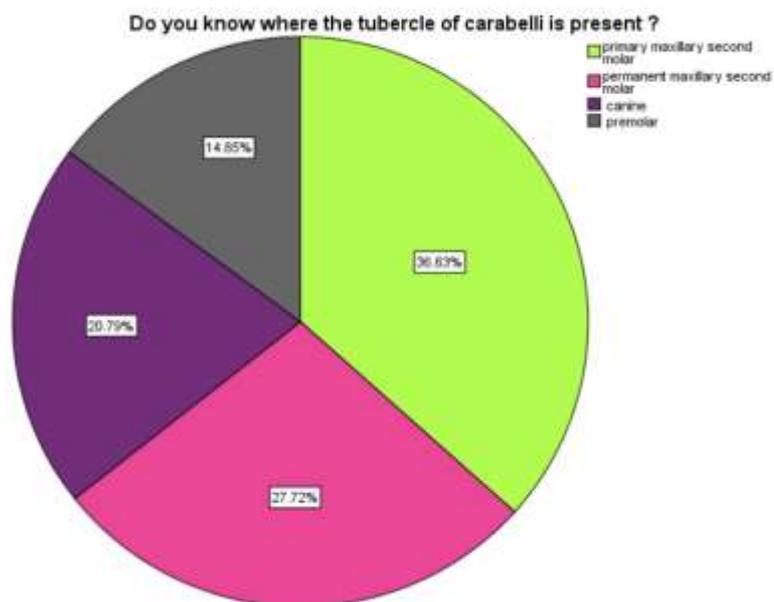


Figure 5 : Pie chart shows response for the presence of the tubercle of carabelli. Fluorescent green represents the primary maxillary second molar. Pink represents the permanent maxillary second molar. violet represents maxillary canine. Grey represents premolar. Only 36.63% of the population were aware whereas 27.72% (permanent maxillary second molar) , 20.79% (canine) , 14.85% (Premolar) were unaware that tubercle of Carabelli is present in primary maxillary second molar .

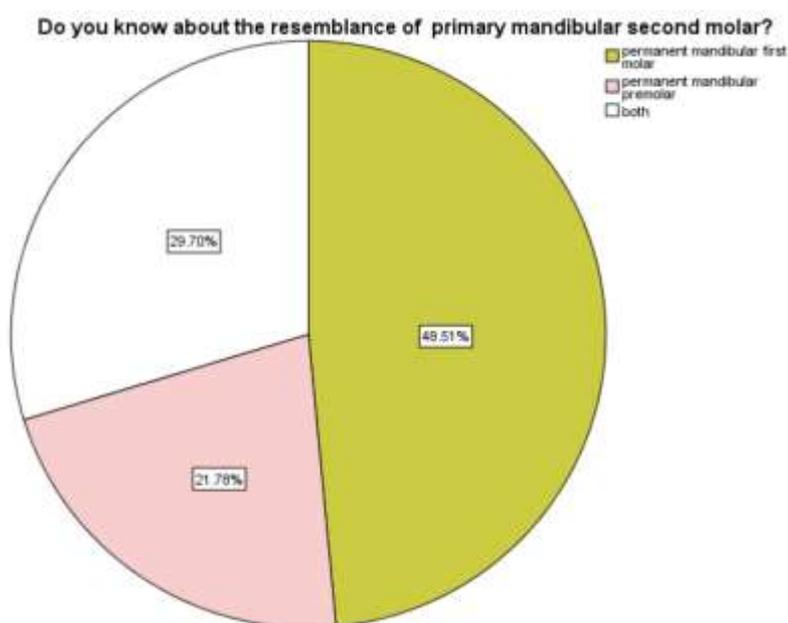


Figure 6 : pie chart shows response for the morphology of the primary mandibular second molar . peach represents a permanent mandibular premolar. Lime yellow represents the permanent mandibular first molar. white represents both. 48.51% of the population were aware whereas 21.78%

(permanent mandibular premolar) , 29.70 % (both) were unaware that primary mandibular second molar resembles permanent mandibular first molar .

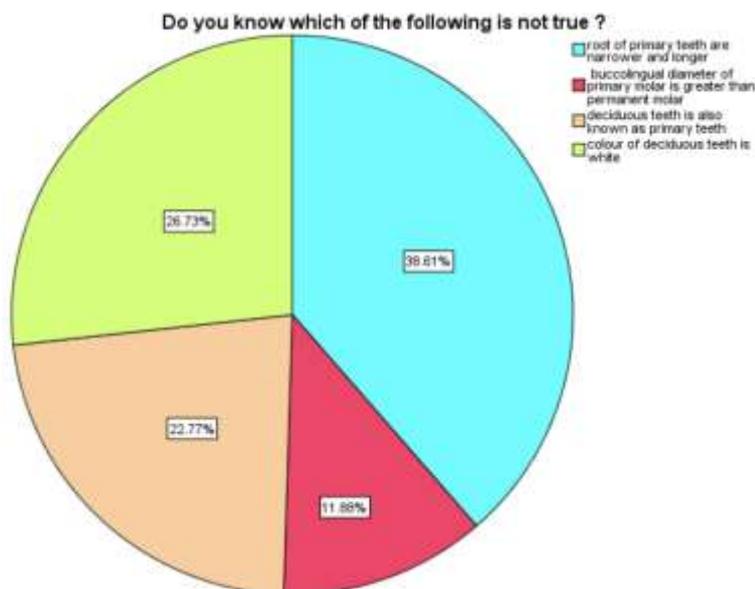


Figure 7 : Pie chart shows response for finding the false statement. Moon green represents the colour of deciduous teeth is white. Coral represents deciduous teeth and is also known as primary teeth. Cyan represents the root of primary teeth and is narrower and longer. Red represents buccolingual diameter of primary molar is greater than permanent. Only 38.61% of the population were aware whereas 26.73% (color of deciduous teeth is white) , 22.77% (deciduous teeth is also known as primary teeth) and 11.88% (buccolingual diameter of primary molar is greater than permanent molar) were unaware about the roots of deciduous teeth.

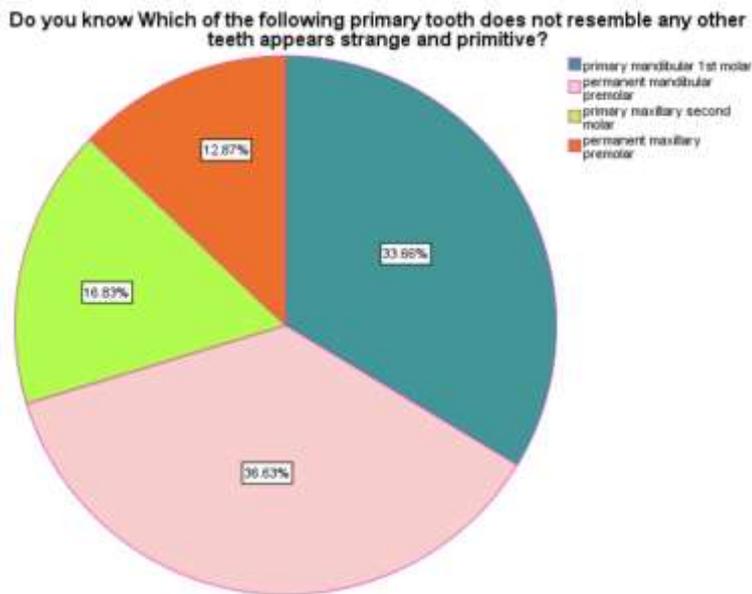


Figure 8 : Pie chart shows response for the primary tooth that doesn't resemble any other teeth and appears strange and primitive. Fluorescent green represents the primary maxillary second molar. Teal represents the primary mandibular first molar. Peach represents the permanent mandibular premolar. Orange represents the permanent maxillary premolar. Only 33.66% of the population are aware whereas 16.83% (primary Maxillary second molar) , 12.87% (permanent maxillary premolar) , 36.63% (permanent mandibular premolar) were unaware that the Primary mandibular first molar is the primary tooth that does not resemble any other teeth appears strange and primitive.

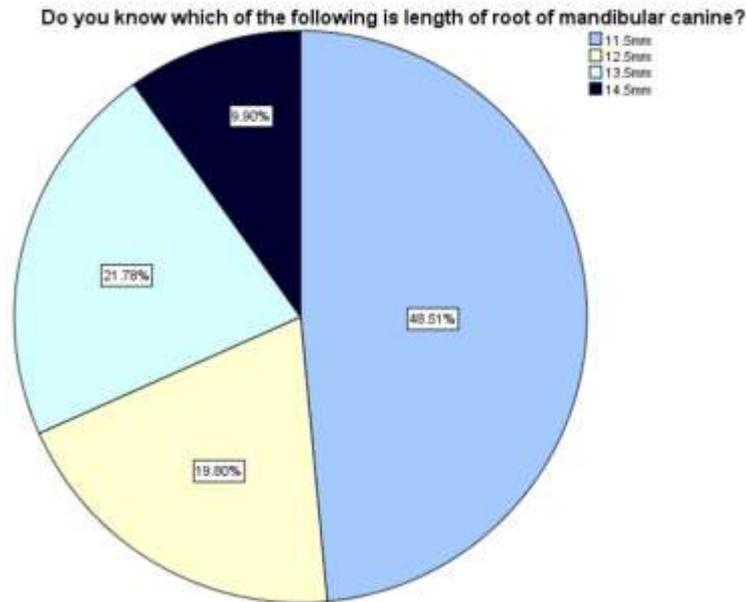


Figure 9 : Pie chart shows response for the length of the root of the canine in the mandible. Light yellow represents 12.5mm. Prussian blue represents 14.5mm. Light cyan represents 13.5mm. Ice blue represents 11.5mm. Only 48.51% of the population were aware whereas 19.80% (12.5mm), 21.78% (13.5mm), 9.90% (14.5mm) were unaware about the length of root of the mandibular canine.

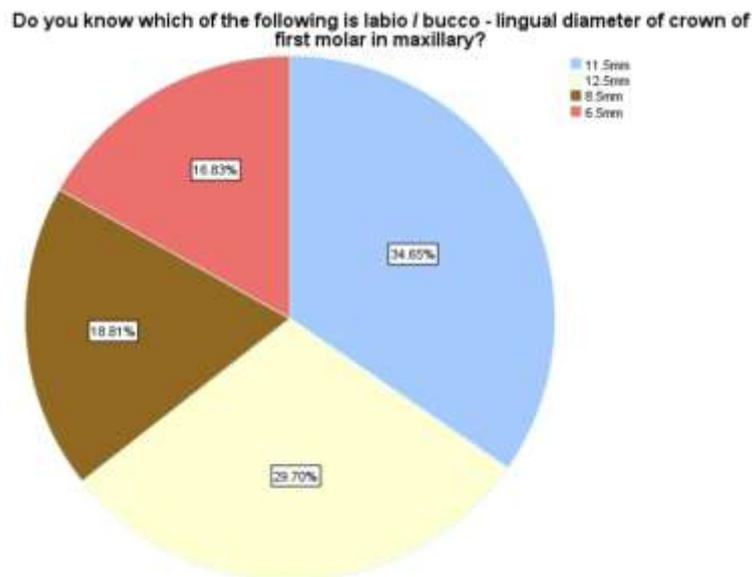


Figure 10 : Pie chart shows response on the labio / bucco lingual diameter of the crown of the first molar in maxilla. Ice blue represents 11.5mm. Light yellow represents 12.5mm. Brown represents 8.5mm. Deep pink represents 6.5mm. Only 18.81% of the population were aware whereas 16.83% (6.5mm), 34.65% (11.5mm), 29.70% (12.5mm) were unaware about the buccolingual diameter of the crown of the maxillary first molar.

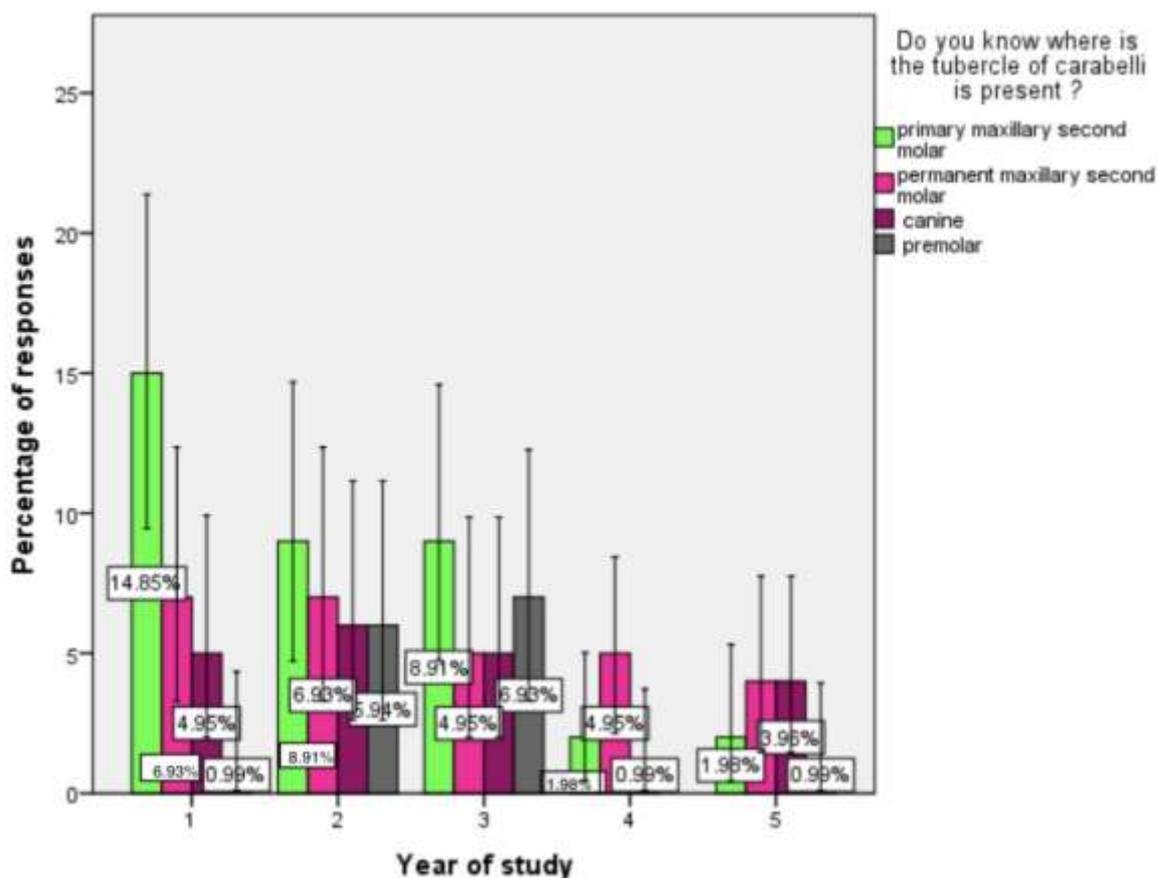


Figure 11 : Bar graph depicts the association between presence of tubercle of carabelli and year of study which shows the knowledge regarding presence of tubercle of carabelli. X - axis represents year of study and Y - axis represents percentage of responses. Fluorescent green represents the primary maxillary second molar. Pink represents the permanent maxillary second molar. violet represents maxillary canine. Grey represents premolar. Most of the 1st year students (14.85%) were more aware than the 2nd year and 3rd year students (8.91%) that tubercle of carabelli is present in primary maxillary second molar. Pearson chi square test was done and P value is 0.142 which is statistically non- significant.

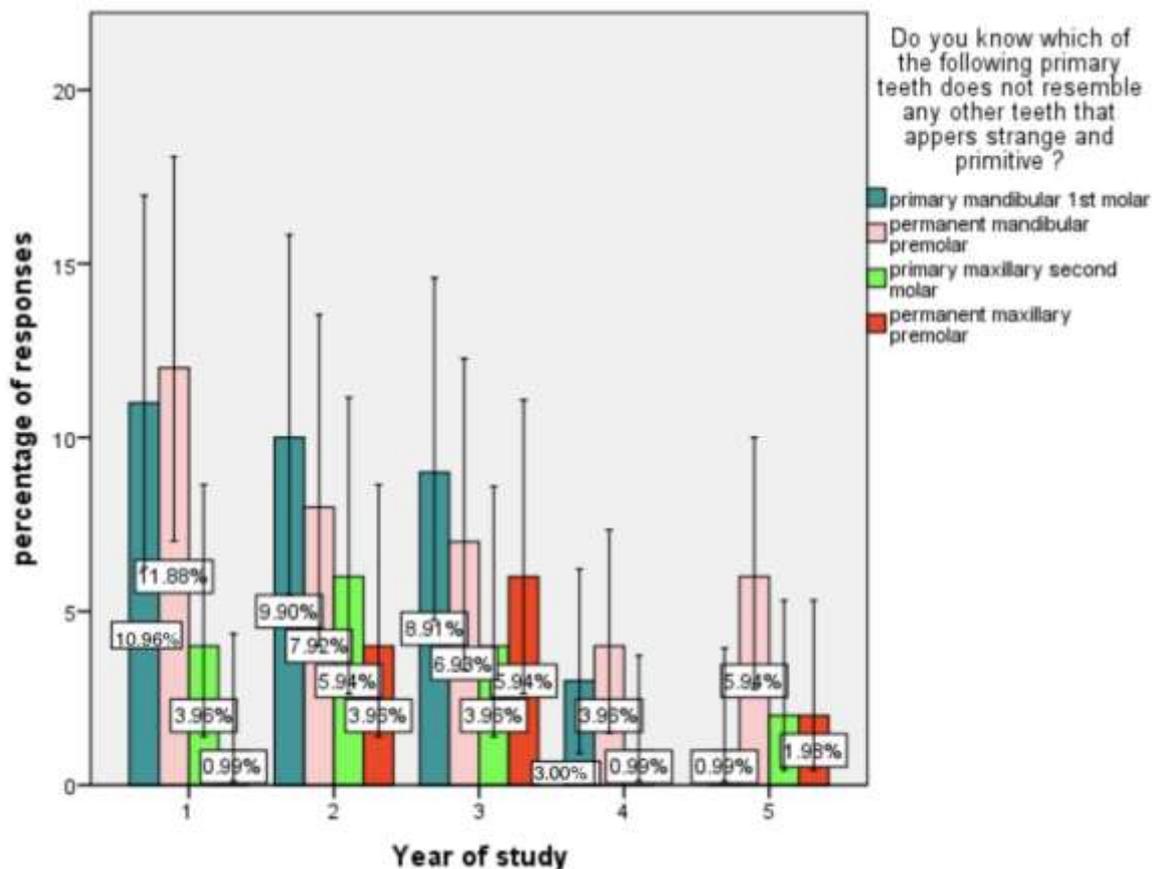


Figure 12 : Bar graph depicts association between primary teeth that do not resemble any other teeth that appear strange and primitive and year of study which shows knowledge regarding primary teeth that does not resemble any other teeth that appear strange and primitive. X-axis represents year of study and Y-axis represents percentage of responses . Fluorescent green represents the primary maxillary second molar. Teal represents the primary mandibular first molar. peach represents the permanent mandibular premolar. Orange represents the permanent maxillary premolar. Most of the 1st year students (10.96%) were more aware than the 2nd year students (9.90%) that the primary mandibular first molar is the primary teeth that do not resemble any other teeth that appear strange and primitive. Pearson chi square test was done and P value is 0.527 which is statistically non-significant.

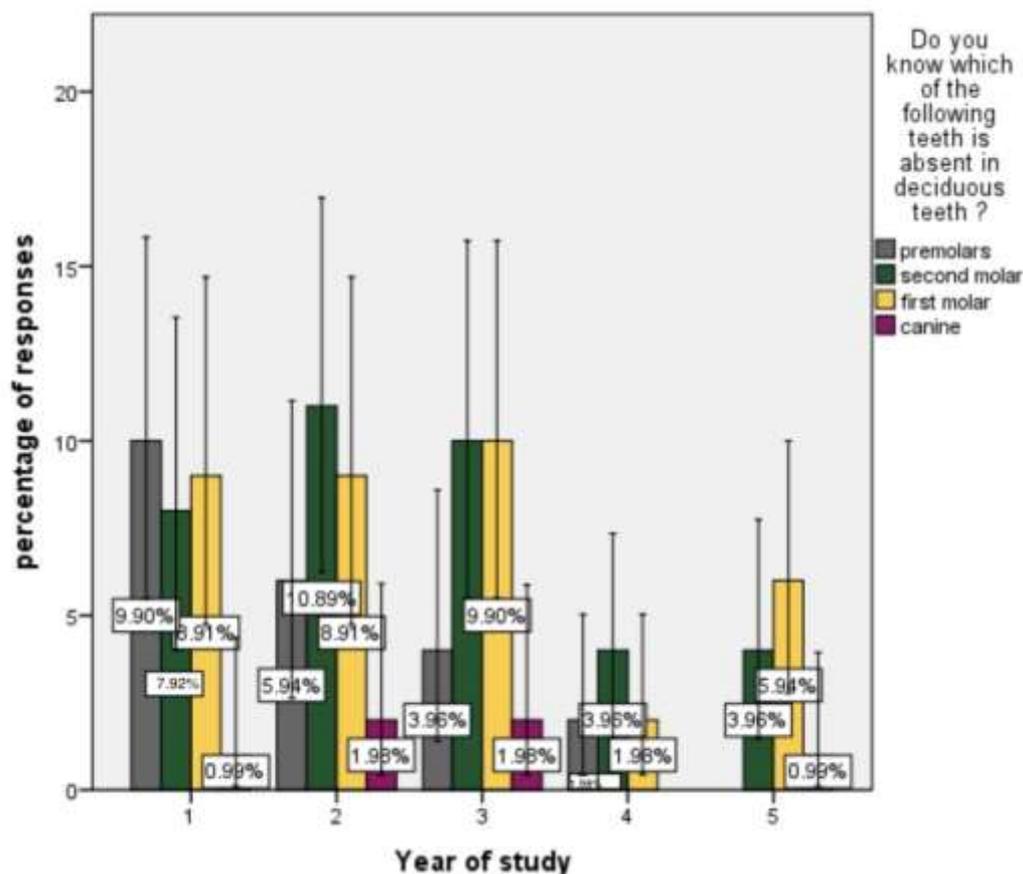


Figure 13 : Bar graph depicts association between teeth that are absent in deciduous teeth and year of study which shows knowledge regarding teeth that are absent in deciduous teeth. X-axis represents year of study and Y-axis represents percentage of response. Grey represents premolars. Dark green represents second molars. Mustard yellow represents the first molars. Violet represents canines. Most of the 1st year students (9.90%) were more aware than the 2nd year students (5.94%) that the premolars are absent in deciduous teeth. Pearson chi square test was done and P value is 0.693 which is statistically non - significant.

DISCUSSION :

In this present study, the first year students have adequate knowledge about morphology of deciduous teeth as compared to second year , third year , final year and interns. The first year students were more aware about the morphologies such as buccolingual diameter of maxillary crown, color of the teeth, tubercle of Carabelli than other students (27,28).

Primary mandibular first molar is strange and primitive. Primary mandibular first molar with an unusual morphology as a single root called pyramidal molar (29). In our study, only 33.66% (most of the 1st year students) of the population were aware that the primary mandibular first molar does not resemble any other teeth and it is strange and primitive (30). The colour of the primary teeth appear milky white and called so as milk teeth. In our study, only 35.64% of the population were aware about the color of deciduous teeth.

Tubercle of Carabelli is a dental morphological trait found on the mesiopalatal surface of maxillary deciduous second molar crowns (31). Tooth with Tubercle of Carabelli is susceptible to dental caries. Tubercle of Carabelli also interferes with banding techniques during fixed orthodontic therapy (32). In our study, only 36.63% (most of the 1st year students) of the population were aware about the tubercle of carabelli.

The primary mandibular second molar resembles the mandibular first permanent molar, except that the primary tooth (33). The most common morphology in primary mandibular second molar consists of 3 canals (two mesial and one distal) in 63% of the teeth examined. Normally mandibular first and second molars have two roots, one is mesial and the other is distal, and at least three main canals. The roots of the second molar can change from one to three. The buccal surface is divided into three cusps that are separated by mesiobuccal and distobuccal developmental grooves. The cusps are almost equal in size. In our study most, only 48.51% of the population were aware about the morphology of the primary mandibular second molar (34).

Deciduous teeth is the official term for baby teeth, milk teeth, or primary teeth and they start developing during the embryonic stage and then commonly begin to erupt in about 6 months after birth (35)(1). In our study, only 21.78% of the population were aware about the other names of deciduous. Thus, from the present study, the first year students have adequate knowledge about morphology of deciduous teeth as compared to second year, third year, final year dental students and interns whereas literature reveals that there was a good amount of knowledge among health care professional groups about morphology of deciduous teeth (36).

The sample size was small and the participants were selected by random sampling and they may not be representative of the entire population. This study can be conducted in offline mode rather than online so that the knowledge of the subjects could be analysed accurately. As most of the students need to know more information about morphology of deciduous teeth, it is advisable to have more activities like identification of deciduous teeth models during theory classes, giving exercises like carving of deciduous teeth.

CONCLUSION:

It is concluded that first year students were more aware about the morphology of deciduous teeth when compared to other undergraduate students. However, a large population must be included for such a study.

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CONFLICTS OF INTEREST :

The authors declare that there are no conflicts of interest in the present study .

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