Nat. Volatiles & Essent. Oils, 2021; 8(5): 8482-8497

Knowledge About Periodontal Diseases Among Undergraduates - A Cross Sectional Study

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ABSTRACT

BACKGROUND: Good oral hygiene is a key reason for maintaining the functional, structural, physiological state of well-being of an individual. Innovative techniques are being used to treat periodontitis. Periodontal disease includes gingivitis and periodontitis which eventually deteriorates the oral health when left untreated.
AIM: The aim of this present study is to assess the knowledge about periodontal disease among the undergraduate students.
MATERIALS AND METHODS : This is a questionnaire based cross-sectional study performed among 100 dental UG students in a private dental college. The data was collected and analysed using SPSS software version 23.
RESULT: In this present study, it is found that the third year students were more aware of the periodontal disease when compared to first, second and fourth year students. In our study, 38% of the respondents were aware of the signs of periodontal disease. Only 39% of the population were aware whereas 61% of the population were unaware of the initiating factor of periodontal disease. And 72% of them were aware of risk factors of periodontal disease. There exists an association between year of study and percentage of responses between the risk factors of periodontitis with p value 0.060 which is statistically significant.
CONCLUSION: It is concluded from the study that third year students have adequate knowledge about periodontal diseases. Better awareness and knowledge about periodontal diseases among dental students helps them in prompt diagnosis and treatment planning.

KEYWORDS: Gingivitis, Periodontitis, Recession, Risk factors, Innovative techniques.

RUNNING TITLE: Knowledge on periodontal disease among dental students

INTRODUCTION

Oral health is an important factor for maintaining structural, functional, psychological and physical health. It plays an important role in maintaining general health (1,2). Periodontal disease exists in varying degrees among all the age groups and as well as in both the genders, it is more common in males than females (3)(4). It can only be treated and not cured (5). Periodontal disease is a serious gum infection that damages gingiva and can destroy the jaw bone (6). Use of toothbrush and dental floss are preventive measures of periodontal disease (7). It is fairly preventable. It can cause poor oral hygiene and it can lead to tooth loss (8). It is a risk factor for heart and lung disease (9,10). If it is left untreated, it can cause tooth loss (11). The new literature suggests that there is a strong relationship between poor oral hygiene and declining periodontal health (12),(13).

Untreated periodontal disease leads to more complicated situations for oral cavity structures (14). The most common consequences of untreated periodontal disease are bone resorption, the mobility of teeth, and tooth loss (15). Bacterial plaque is the main cause of periodontal disease, initiation and progression of gingival and periodontal diseases may be caused by factors such as hormonal changes, poor changes, diabetes, smoking and stress (16). Common periodontal disease depends mainly on human behavior, and the control of these diseases is greatly supported by the fact that the etiological factors are well documented (17,18). Etiological factors that cause periodontal disease are age, smoking, stress, genetics, medication, clenching or grinding the teeth, poor nutrition and obesity (19). Prevention or reduction of periodontal disease may prevent the associated pain (4). Awareness and knowledge about periodontal disease among the dental UG students that can greatly contribute towards motivating patients for treatment and it also provides necessary referrals (20). Budding dentists must need to know about periodontal health which helps in providing the prompt treatment for the patients (21). Our team has extensive knowledge and research experience that has translated into high quality publications (22),(23),(20),(24),(8),(25),(26),(5),(27),(28),(6),(10),(29),(30),(31),(32),(33),(34),(35),(36). The aim of this present study is to assess the knowledge about periodontal disease among the undergraduate students.

MATERIALS AND METHOD

This is a questionnaire based cross-sectional study, circulated among UG dental students in a private dental college. Sample of this study includes 100 participants and was collected from the UG students of dental college. Participants were selected on the basis of simple random sampling. A total of 20 questionnaires were circulated among the UG dental students and then the result data was tabulated in google docs and then it was tabulated in MS Excel and then analysed in SPSS version 23 to get the data in the form of pie charts and bar charts. Chi square test 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 questionnaires are as follows:

(Data collection)

1. Are you aware of periodontal disease?
2. Do you think that periodontal disease is curable?

3. Which of the following do you think is the initiating factor of periodontal disease?
4. What of the following are the effective measures to prevent periodontal disease?
5. Which of the following do you think are the signs of periodontal diseases?
6. Which of the following do you think are the risk factors of periodontitis?
7. Between which age group does juvenile periodontitis occur?
8. Which pictorial representation depicts a healthy gingiva?
9. Which pictorial representation depicts type 1 recession?
10. Which of the following is the probing dept of severe periodontitis?

RESULT

The present study has observed that out of 100 study participants, 65% were first year, 10% were second year, 15% were third year, 10% were fourth (final) year students. According to our study, only 37% of the population were aware 63% of the population were unaware of periodontal disease (**Figure 1)**. Only 4% of the population were aware whereas 96% of the participants were unaware that periodontal disease is curable **(Figure 2).** And 39% of the population were aware whereas 61% of the population were unaware of the initiating factor of periodontal disease **(Figure 3)**. Majority 58% of the population were aware whereas 42% of the population were unaware of the effective measures to prevent periodontal disease **(figure 4)**. Majority 80% of the population are aware of signs of periodontal disease **(figure 5)** whereas the majority 72% of the population were aware of the risk factors of periodontitis **(figure 6)**. Majority 59% of the population were aware whereas 41% of the population were unaware of the age group of occurrence of juvenile periodontitis **(figure 7)**. However 100% of the population were aware of pictorial representation of healthy gingiva **(figure 8)** whereas 54% of the population were aware of pictorial representation of type 1 recession **(figure 9)**. Only 24% of the population were aware whereas 76% of the population were unaware of probing depth of severe periodontitis **(figure 10)**. The bar graph represents the association between year of study and the respondents who were aware about the effective measures to prevent periodontal disease, pearson chi square test was done and the p value is 0.114 and hence it is statistically not significant **(figure 11)**. The bar graph represents the association between year of study and the respondents depicting the risk factors of periodontitis, pearson chi square test was done and the p value is 0.060 and hence it is statistically not significant **(figure 12)**. The bar graph represents the association between year of study and the respondents who were aware about the occurrence of juvenile periodontitis, pearson chi square test was done and the p value is 0.020 and hence it is statistically significant **(figure 13)**.

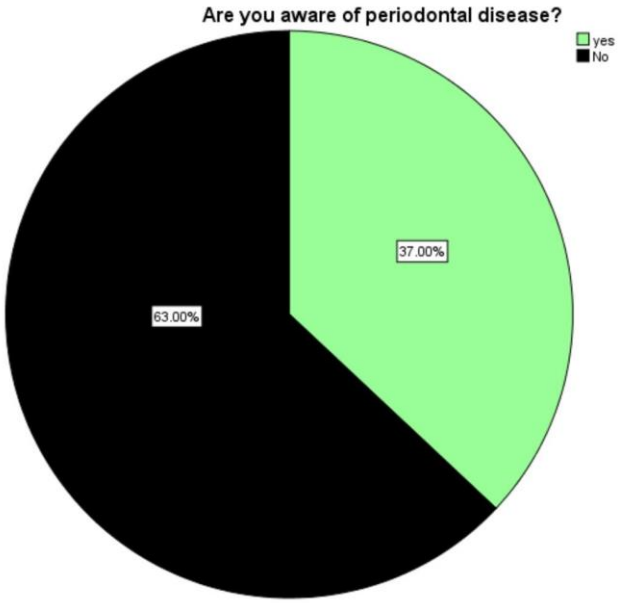

Figure 1: The pie chart shows the percentage of response for the awareness of periodontal disease. Here Black indicates "No", Apple green indicates "Yes". Only 37.00% (Yes) of the population were aware whereas 63.00% (No) of the population were unaware of periodontal disease.

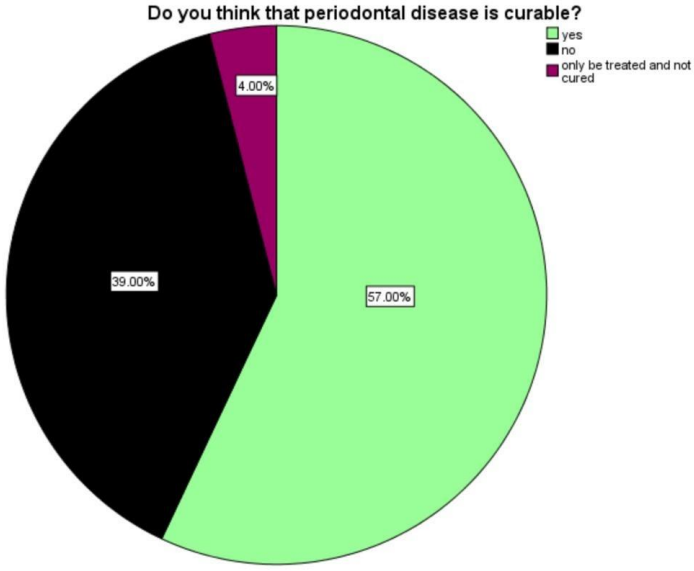

Figure 2 : Pie chart shows the percentage of response for whether "periodontal disease" is curable. Here black indicates "No", Apple green indicates "Yes", Maroon indicates Periodontal disease can only be treated and not cured. Only 4.00% (Only be treated and not cured) of the population were aware whereas 57.00% (Yes), 39.00% (No) were unaware whether periodontal disease is curable.

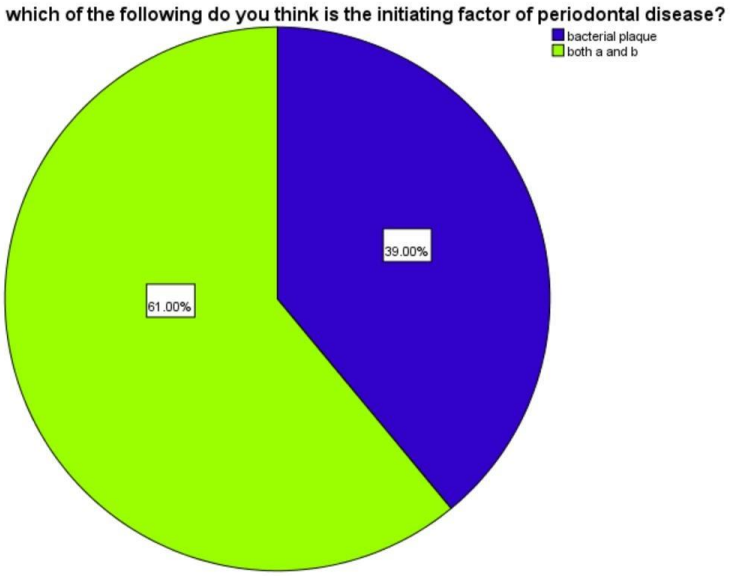

Figure 3 : The pie chart shows the percentage of response for the initiating factor of periodontal disease. Here Fluorescent green indicates Both bacterial plaque and dental calculus, Dark blue indicates Bacterial plaque. Only 39.00% (Bacterial plaque) of the population were aware whereas 61.00% (Both a and b) were unaware of the initiating factor of periodontal disease.

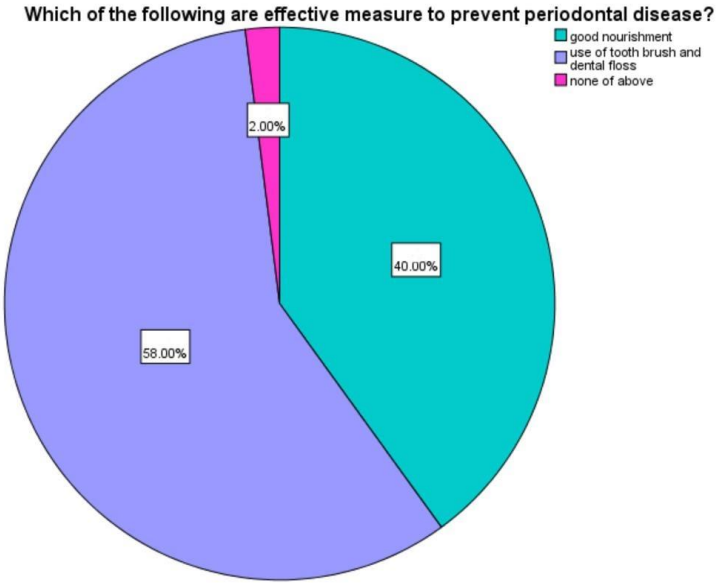

Figure 4 : The pie chart shows the percentage of response for the effective measure to prevent periodontal disease. Violent indicates Use of toothbrush and dental floss, Apple green indicates “Yes”, Maroon indicates none of the above. Majority 58.00% (Use of toothbrush and dental floss) of the population were

aware whereas 40.00% (Good nourishment), 2.00% (None of these) of the population were unaware of the effective measures to prevent periodontal disease.

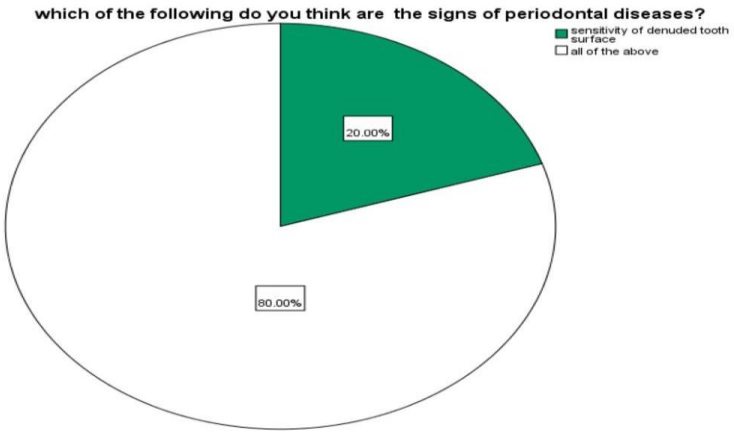

Figure 5 : The pie chart shows the percentage of signs of periodontal disease. Here, Dark green indicates Sensitivity of the denuded tooth surface, White indicates All of the above. Majority 80.00% (All the above) of the population were aware whereas 20.00% (Sensitivity of denuded tooth surface) of the population were unaware of the signs of periodontal disease.

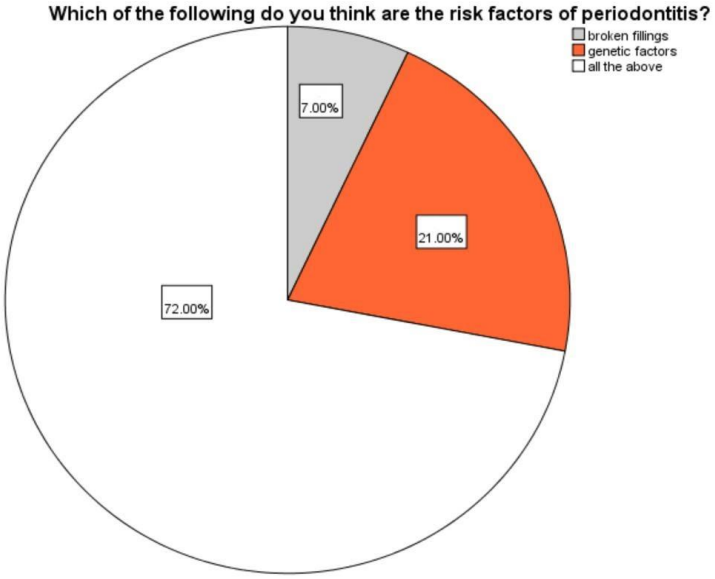

Figure 6 : The pie chart shows the percentage of response for the risk factors of periodontitis. Orange indicates genetic factors, grey indicates broken fillings whereas white indicates all of the above. Majority 72.00% (all the above) of the population were aware whereas 21.00% (Genetic factor), 7.00% (Broken fillings) of the population were unaware of the risk factors of periodontitis.

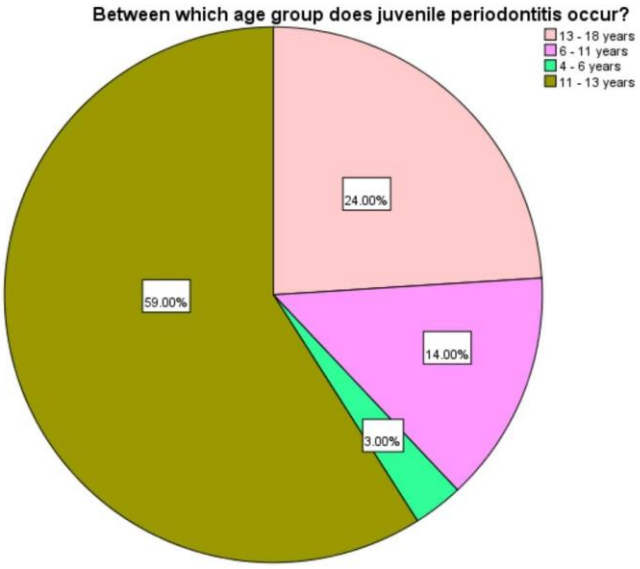

Figure 7 : The pie chart shows the percentage of response for the occurrence of juvenile periodontitis. Olive green indicates 11-13 years, Moon green indicates 4-6 years, Deep lavender indicates 6-11 years, Peach represents 13-18 years. Majority 59.00% (11-13 years) of the population were aware whereas 3.00% (4-6 years), 14.00% (6-11 years), 24.00% (13-18 years) of the population were unaware of the age group of occurrence of juvenile periodontitis.

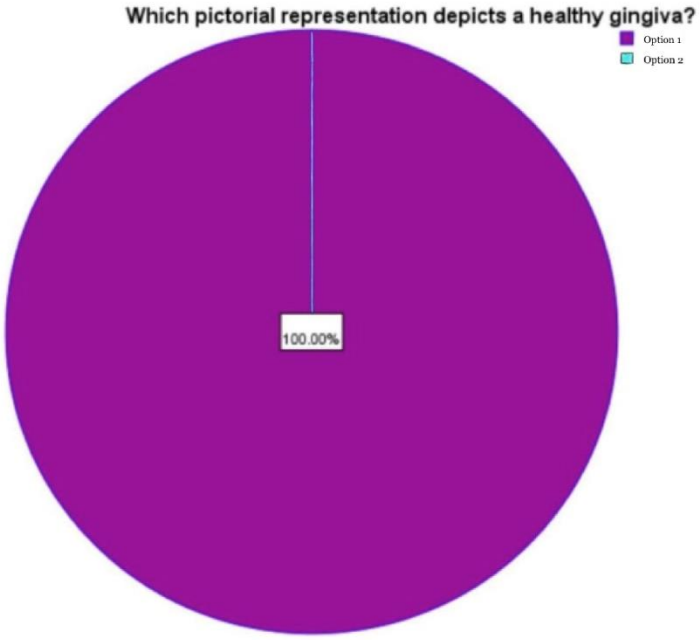

Figure 8 : The pie chart shows the percentage of response for healthy gingiva. Here Violet indicates Option one (Healthy gingiva), Sea green indicates Option two (Gingivitis). Here, 100.00% (option 1) of the population were aware of pictorial representation of healthy gingiva.

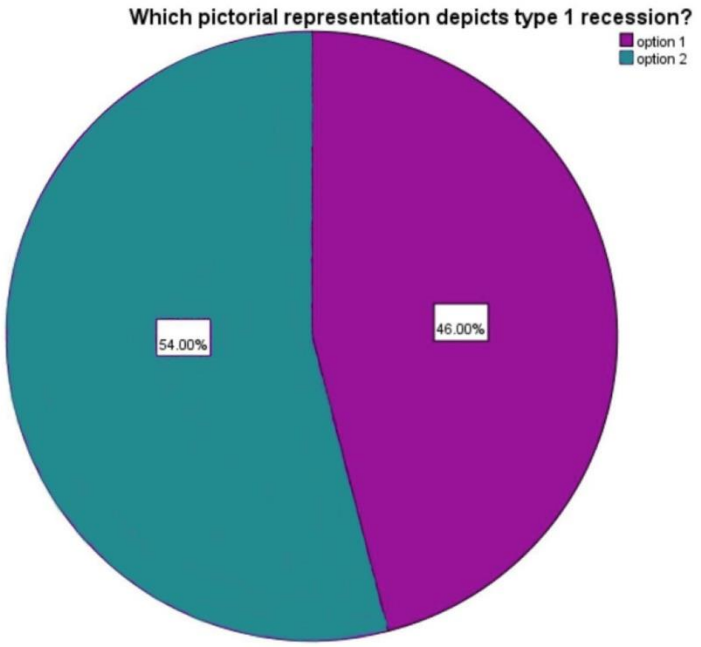

Figure 9 : The pie chart shows the percentage of response for type 1 recession. Here Violet indicates Type 2 recession, Sea green indicates Type 1 recession. Majority 54.00% (option 2) of the population were aware whereas 46.00% (option 1) of the population were unaware of pictorial representation of type 1 recession.

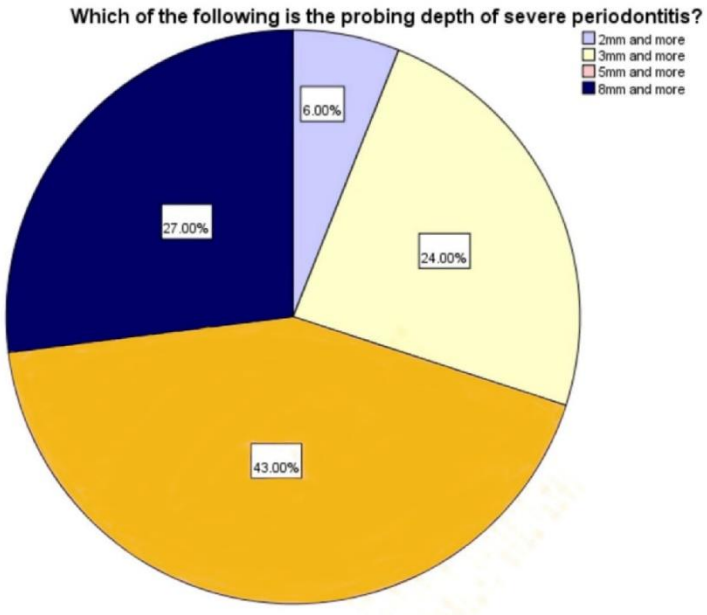

Figure 10 : The pie chart shows the percentage of probing depth of severe periodontitis. Prussian blue indicates 8mm and more, Ice blue indicates 2mm and more, Cream yellow represents 3mm and more

and Gold represents 5mm and more. Only 24.00% (3mm and more) of the population were aware whereas 43.00% (5mm and more), 27.00% (6mm and more), 6.00% (2mm and more) of the population were unaware of probing depth of severe periodontitis.

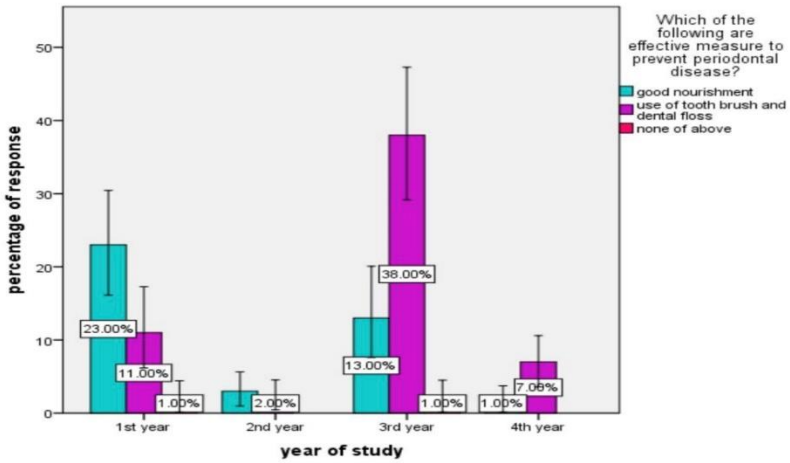

Figure 11 : Bar graph represents the association between year of study and the respondents who were aware about the effective measures to prevent periodontal disease. X-axis represents the year of study and Y-axis represents the percentage of responses overall. Violet colour depicts use of toothbrush and dental floss, Pink colour denotes none of these, Teal colour depicts good nourishment. Majority (38%) of the third years were aware of the effective measures to prevent periodontal disease when compared to the first years (11%). Pearson chi square test was done and the p value is 0.114 and hence it is statistically not significant.

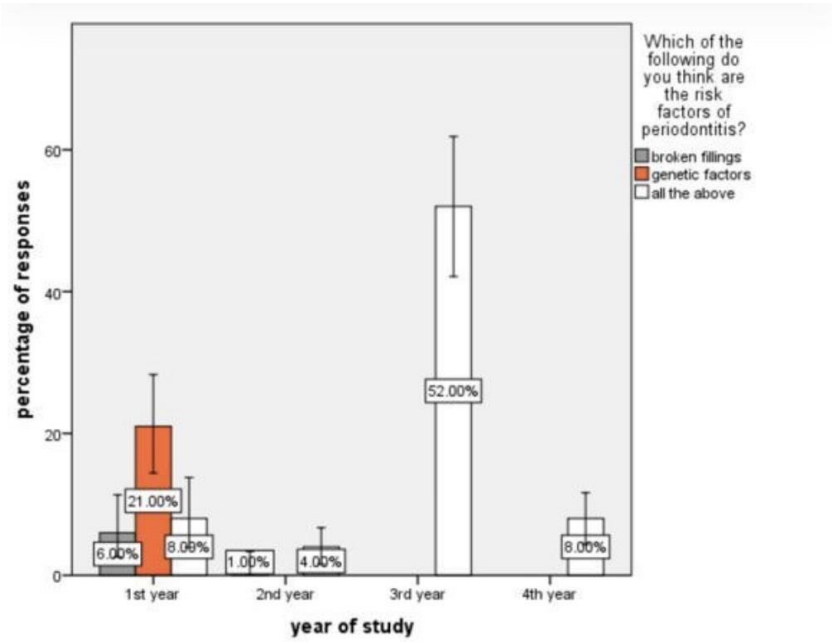

Figure 12 : Bar graph represents the association between year of study and the respondents depicting the risk factors of periodontitis. X-axis represents the year of study and Y-axis represents the percentage of responses overall. White colour depicts All of the above, Orange colour denotes recession 1, Grey colour denotes broken fillings. Majority (52%) of the third years were aware of the risk factors of periodontitis as compared to the fourth year (8%), first year (8%), and second year (4%). Pearson chi square test was done and the p value is 0.060 and hence it is statistically not significant.

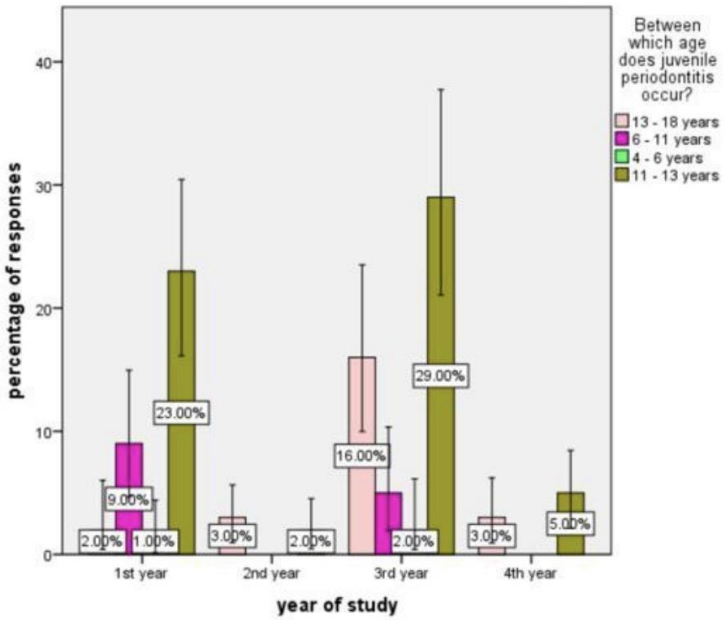

Figure 13 : Bar graph represents the association between year of study and the respondents who were aware about the occurrence of juvenile periodontitis. X-axis represents the year of study and Y-axis represents the percentage of responses overall. Olive green color depicts the age group between 11-13 years. Majority (29.00%) of the third years were aware of the age as 11-13 years for juvenile periodontitis when compared to the first year (23%), fourth year (5%), and second year students (2%). Pearson chi square test was done and the p value is 0.020 and hence it is statistically significant.

DISCUSSION

In our present survey, the majority of students' responses were from the first year (30.00%), pursued by their second (2.00%), third (4.00%), and fourth year (1.00%). This study found that 52.00% of third year students were aware of risk factors of periodontal disease, followed by 8.00% of fourth year students, 8.00% of first year students, 4.00% of second year students (35,37). As a result of the current study, it is evident that third year students are more aware of periodontal disease (38,39).

One of the important oral signs of diabetes is gingivitis and periodontitis (40). Patients with undiagnosed or poorly controlled diabetes mellitus type 1 or type 2 are at higher risk for periodontal

disease (32,41). In our study 72% of the population have responded that the risk factors of periodontal disease are diabetes, broken fillings and genetic factors (42,43). In a previous study, 70% of the participants believed that periodontal disease would cause tooth loss whereas in this study none of them have reported tooth mobility as a sign of periodontal disease (2,44). In a previous study, 95% of the population have reported that periodontal disease is preventable (2,39) whereas in this study only 4% of the participants have reported that periodontal disease can only be treated and not cured (31).

Gingival recession is the exposure of the root surface due to the apical migration of the marginal gingiva. Class I recession is marginal tissue recession, and does not extend to the mucogingival junction (MGJ) (45). In this study 54.00% of the population depicted the correct representation of type 1 recession (43,46). In the previous study only a low proportion of students could define dental plaque correctly whereas in our study only 39.00% of the population think that the initiating factor of periodontal disease is bacterial plaque (17,47).

Previous studies demonstrated that the university students had poor knowledge regarding the etiology of periodontal diseases as well as in the role of conventional treatment in maintaining good oral health by preventing the inflammatory process (48,49) whereas in the present study student third year students have adequate knowledge as compared to other year students (4,38). In the present study, 37.00% of the population have knowledge about periodontal disease and 63% of the population were aware of periodontal disease, however 100% of the population have correctly depicted the pictorial representation of a healthy gingiva.

The sample size was small and more sample size would be beneficial to assess the knowledge about periodontal diseases more accurately. The survey can be conducted in offline mode rather than online so that the knowledge of the subjects could be analysed accurately.

CONCLUSION

The study establishes that third year undergraduate students were more aware about periodontal disease. It could be better if the students understand correlating the theory and the clinical aspects and that would be enhanced by conducting more pictorial lectures and giving innovative handworks on periodontal disease for the students to make them understand the subject in depth.

ACKNOWLEDGEMENT

The authors would like to thank all the participants for their valuable support and
Saveetha Dental College, Saveetha Institute of Medical and Technical Science, Saveetha University for their support to conduct the study.

CONFLICTS OF INTEREST

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

SOURCE OF FUNDING

The present study was supported by the following agencies

- Saveetha Dental College,
- Saveetha Institute of Medical and Technical Science,

- Saveetha University
- S3 METETA Technologies Pvt Ltd

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