

ORIGINAL ARTICLE

THE PREVALENCE AND KNOWLEDGE OF PERIODONTAL DISEASE AMONG DENTAL STUDENTS OF HILLA CITY, IRAQ

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ABSTRACT

Background: Periodontal disease is multifactorial disease that occurs due to bacterial activity more than the host-defense. Periodontitis is usually caused by accumulation of supra- and sub-gingival plaque, calculus, or both. This study aimed to examine the prevalence and knowledge of periodontal diseases in undergraduate dental students of dentistry college in Babylon university.

Materials & Methods: This was a cross-sectional study conducted at the Department of Pediatric Dentistry, Orthodontics, and Preventive Dentistry for measuring the periodontal disease prevalence in the fourth and fifth stage undergraduate dental students in Hilla city, Iraq. Sample of present study consisted of 308 undergraduate dental students aged 22 and 23 years who were selected through simple random sampling method during academic year 2021-2022. The prevalence of periodontitis in these students was measured by using CPITN codes index. And we used questionnaire to dental student about effective tips for prevention of periodontal disease.

Results: There was total 308 participants in this study, in which 152 were male and 156 were female. The outcome of present study has shown that the periodontal disease prevalence was 62%. The change in prevalence was found between males and females with the males having significantly higher disease rates than females, while no significant difference in two age groups that were examined. Also, we found a high level of knowledge of the effective tips to prevent periodontal disease among these students.

Conclusion: Periodontitis was found to be prevalent in dental students of University of Babylon, College of Dentistry. Also, good knowledge about effective tips to prevent periodontal disease among dental students.

KEY WORDS: Calculus; Dental students; Gingiva; Periodontal disease; Plaque; Prevalence.

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INTRODUCTION

Periodontal disease is common oral health problems in population. It affects the periodontal tissues that involve gingival tissue, alveolar bone and periodontal ligament. This inflammation can affect either the gingival tissue alone causing gingivitis or affect the gingival tissue and periodontal ligament causing periodontitis. Periodontal disease may cause teeth mobility and tooth

loss.¹ The periodontitis sometimes occur in population of different age.² The health care needs of populations can show an overview about the distribution of periodontal disease, gingival disease that is fluctuating in the severity. While gingival disease is very nearly a widespread finding in all population of all age groups, young people usually have lower percentage of periodontal disease and high percentage among middle and older population.³ And also found high mean of gingival index among male than female dental student.⁴

The most important part in the treatment of periodontitis is plaque control.⁵ Good oral hygiene and plaque control for each person need motivation by audiovisual aids and also need education about the most common factors that cause inflammation of periodontal tissue (periodontitis).^{6,7} The index used in this study for measuring prevalence of periodontal disease among dental student is CPITN (Community Periodontal Index for Treatment Needs). This index was progressed by (WHO) and (FDI) to determine status of periodontal

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health. This technique is simple for measuring the treatment needs (TNs) of a sample which is important in epidemiological studies for measuring the periodontal disease prevalence.^{7,8,9} Aim of study was to know the percentage of periodontal disease in dental students and knowledge about periodontal disease.

MATERIALS AND METHODS

This cross-sectional study was conducted at the Department of Pediatric Dentistry, Orthodontics, and Preventive Dentistry for measuring the periodontal disease prevalence in the fourth and fifth stage undergraduate dental students in Hilla city, Iraq. The sample of population recruited in this study involved undergraduate students aged 22 to 23 years old. The sample that was taken from undergraduate students was 308 for the academic year 2021-2022 who were randomly selected from the targeted group in 6 months duration, Sample selection carried through simple random sampling.¹⁰ The criteria used for sample selection include the following: the student should be free from systemic disease and should not have taken any medication that has an effect on periodontal tissue status. Excluding dental students who have systemic disease.

The index used in this study for measuring prevalence of periodontal disease among dental student is CPITN (Community Periodontal Index for Treatment Needs). This index was progressed by (WHO) and (FDI) to determine status of periodontal health. This technique is simple for measuring the treatment needs (TNs) of a sample which is important in epidemiological studies for measuring the periodontal disease prevalence.⁷⁻⁹

The criteria of CPTIN index were recorded by examination of all students that included in this study. The examination procedure in the present study followed WHO guidelines.¹⁰ In this index, Ainamo divided the mouth into 6 sextants for every person who were examined, and thus, the same protocol was used in this study. During examination, students' mouth was divided into 6 sextants and the highest score of each sextant was recorded using WHO CPITN-E probe in the examination. Data were recorded, analyzed, tabled and finally statistical analysis was performed using Microsoft excel 2016 . For significance detection; t test was used and P-value, the significant difference occurs when p value less than 0.05. The epidemiological investigation used in this study was cross-sectional (prevalence study) that measured the prevalence of the periodontal disease. It is based on a single examination at one point in time.

In this study we measured the knowledge of dental students about the effective tips to prevent periodontal disease among dental students by using questionnaire. The present study occurred according to principles of ethics. The protocol of this study and consent forms were approved by a local ethics committee.

RESULTS

The 308 examined students aged 22 to 23 years, 158

(51%) of them aged 22 years and 150 (49%) aged 23 years. With similar percentage for the gender, females constituted 51% and males 49%.

When periodontal health status among dental students was measured by using criteria of CPITN index, healthy periodontium was found to be 38%, while calculus had the highest percentage of 41% and the least percentage of 4% was found for pocket depth of 6 mm or more. After recording the highest scores of CPITN index by age, healthy periodontium was found to be 37% and 40% for students aged 22 and 23 years respectively. The least percentage was found for pocket depth of 6 mm or more to be 6.3% and 1% in 22- and 23-years old students respectively. This statistically significant difference was found between two age groups (Table 1).

Table 1: Distribution of dental students according to their highest scores of CPITN index by age

CPITN	Age 22 No. (%)	Age 23 No. (%)	Total
Healthy periodontium	58 (37%)	60 (40%)	118(38%)
Bleeding	10 (6.3%)	16 (11%)	26 (8.5%)
Calculus	62 (39%)	64 (43%)	126 (41%)
Pocket depth 4-5 mm	18 (11.4%)	8 (5%)	26 (8.5%)
Pocket depth 6 mm or more	10 (6.3%)	2 (1%)	12 (4%)
Total	158 (100%)	150 (100%)	308 (100%)

$P > 0.05$

The highest scores of CPITN index by gender was similarly recorded in which female students were found to have higher percentage of healthy periodontium and bleeding than males. On the other hand, females were found to have lower percentage of calculus, lower percentage of pocket depth than males (Table 2).

Table 2: Distribution of dental students according to their highest scores of CPITN index by gender

CPITN	Male No.(%)	Female No.(%)	Total
Healthy periodontium	52(34%)	66 (42%)	118 (38%)
Bleeding	8 (5%)	18 (12%)	26(8.5%)
Calculus	66 (43%)	60 (38.4%)	126 (41%)
Pocket depth 4-5 mm	16 (11%)	10 (6.4%)	26 (8.5%)
Pocket depth 6 mm or more	10 (7%)	2 (1.2%)	12 (4%)
Total	152 (100%)	156 (100%)	308 (100%)

$P > 0.05$

Table 3: Distribution of dental students according to answers for prevention of periodontal disease knowledge questions

Question	Fourth stage 22 years			Fifth stage 23 years		
	Yes	No	Do not know	Yes	No	Do not know
The effective tips for prevention of periodontal disease						
Use toothbrush	150	7	1	142	4	4
Use dental floss	140	15	3	148	1	1
Good nourishment	132	20	6	147	2	1
Do scaling and polishing in dental clinic	150	7	1	145	4	1
Use of mouthwash	144	8	6	142	4	4

P value > 0.05

The final variable investigated in this study was the students' answers for prevention of periodontal disease knowledge questions. The result show no significant difference between these groups of dental students in their answers (Table 3)

DISCUSSION

The periodontal disease prevalence in all forms in this study was found to be 62% and this high prevalence is probably due to many reasons including lack of motivation and stress of examinations or smoking in male students. The finding of this study agree with the results of another studies.¹²⁻¹⁵ According to scores of CPITN, the score 2 (calculus) is the most common code in the present study and the score 4 (Pocket depth 6 mm or more) is the less common code in this study. This finding partly agrees with the studies done by peeran study and Dhaifullah study.^{16,17} Other findings obtained in this study were in partial agreement and disagreement with another studies. Of these, the high periodontal disease prevalence was found in male students than females and there was significant difference between them. The underlying cause could be due to good oral hygiene habits practiced by females compared males. This result was in agreement with the results of Bhardwaj study⁸, while it disagrees with another study by pol et al study¹³, that found no difference statistically significant in prevalence of periodontitis between gender.

In many previous studies, females were found to have better periodontal health than males. This was attributed to the facts that females usually pay more attention for their esthetic, and as teeth are part of their esthetic, they usually take care of them into greater extent, and thus, had more regular visits to the dentist; Therefore, they had better periodontal health. On the other hand, males usually tend to practice more bad habits such as smoking. These are crucial factors in developing periodontitis.¹⁸

At this study, Questionnaire was used for measuring knowledge of dental students regarding the effective measure to prevent periodontal disease. Our results showed that high percentage of dental students knew the preventive measures of periodon-

tal disease and this knowledge belong to their high level of education. The result of present study was also agreed with finding of other studies done by Kawamura studies.^{19,20}

CONCLUSION

The results of our study concluded that periodontal disease prevalence among undergraduate dental students is relatively high with males being affected into greater extent than females. The level of knowledge of the effective measures to prevent periodontal disease among these students was also high which belongs to their high education level. Limitation of study was, not to include all the students in dentistry college.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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