Age and gender distribution of community periodontal index of treatment needs - a record-based study

LALITHA RANI CHELLAPPA[1], L.LEELAVATHI[2*], P.JAYASHRI[3]

[1]Department of Public Health Dentistry, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Chennai, India.
[2,3]Senior Lecturer, Department of Public Health Dentistry, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Chennai, India.
*Corresponding Author,
Email ID: 151812002.sdc.saveetha.com[1], leelavathi.sdc@saveetha.com, jayashri.sdc@saveetha.com

Abstract: Gingivitis and periodontitis are two main periodontal diseases in which gingivitis is reversible and periodontitis is irreversible. Pocket depth and loss of attachment can distinguish gingivitis and periodontitis. Their distribution with age and gender and association is still a controversy. Aim of the study was to analyse the distribution of community periodontal health and its treatment needs among patients attending a private dental college in Chennai.CPITN index was used to measure the CPI scores and treatment needs of individual indexed teeth.This study included all CPITN index patient records from 18- 80 years old who visited from August 2019- March 2020 and a total of 112 records were reviewed. Descriptive statistics and chi square tests were used for statistical analysis.Gender distribution of the records showed that among 112 records 72.32% were males and 29.68 % were females. Bleeding (38.24%) was the most prevalent CPI score among the study population. Improvement of oral hygiene and scaling (44.04%) was commonly found treatment needs. Significant association was found between age and treatment needs of most of the index teeth . There was no significant association found between gender and CPI score or Treatment Needs of the index teeth. In the age group of 18 - 35 years, bleeding was found to be more prevalent; calculus was found to be more prevalent in the age groups 36-50 years and 51-80 years. Improvement of personal oral hygiene and scaling was the most prevalent treatment needs among all the age groups. Calculus was observed more prevalent among males and bleeding was common among females. Improvement of personal oral hygiene and scaling was the most prevalent treatment needs among both males and females.

Keywords: Periodontitis, CPITN, WHO probe, Age, Gender

INTRODUCTION

Periodontal infection is initiated by specific invasive oral pathogens that colonise dental plaque biofilms on tooth surfaces, and host immune response to inflammation plays a central role in disease pathogenesis(Saini *et al.*, 2009). Periodontitis is defined as an inflammatory response of supporting tissues of teeth caused by specific microorganisms resulting in progressive destruction of periodontal ligament and alveolar bone with periodontal pocket function , gingival recession or both(Newman *et al.*, 2011). Tissue destruction is caused by the immune response of the host. Variations in the host response may increase or decrease the susceptibility of different individuals to destructive periodontal disease.(Garlet, 2010; Benakanakere *et al.*, 2015) The clinical feature that distinguishes gingivitis and periodontitis is presence of periodontal pocket and loss of attachment. It is often accompanied by changes in colour, consistency, contour and presence of bleeding.(Kinane, 1999; Tonetti and Mombelli, 1999; Shiau and Reynolds, 2010)

Aging is a complex multifactorial process and older individuals have higher levels of gram negative bacilli as compared to younger individuals.(Hajishengallis, 2010; Wu *et al.*, 2016)Many studies have proven the association of oral microflora and oral diseases.(Pavithra, Preethi Pavithra and Jayashri, 2019; Mathew *et al.*, 2020a) . and their importance with aging and nutrition(Leelavathi, Thoudam and Anitha, 2015; Neralla *et al.*, 2019)Many studies have proved the importance of age with respect to dental caries and people's attitude and practice about dental caries.(Prabakar, John and Srisakthi, 2016; Patturaja, Leelavathi and Jayalakshmi, 2018; Pratha, Ashwatha Pratha and Prabakar, 2019; Samuel, Acharya and Rao, 2020a).There are also ways to prevent dental caries from occurring . studies have proven use of fluorides to prevent dental caries and use of antimicrobial agents.(Kumar and Preethi, 2017; Kumar, Pradeep Kumar and Vijayalakshmi, 2017; Prabakar, John, Arumugham, Kumar and Sakthi, 2018a, 2018b; Prabakar, John, Arumugham, Kumar and Srisakthi, 2018; Khatri *et al.*, 2019; Mohapatra *et al.*, 2019).

Similarly age influences the occurrence of periodontal disease. According to Akbar and Pratiuru in 2016, age can be classified into 7 groups from early adolescence to senior (Akbar and Pratiwi, 2016) and the severity of periodontal disease tends to increase with age (S *et al.*, 2015; Tadjoedin *et al.*, 2017). With respect to gender, women have varied periodontal problems due to hormonal fluctuations in various decades of life(Alam, Mishra and Chandrasekaran, 2012). The association of gender with periodontal diseases is still a controversy. While some studies show a strong association(Furuta *et al.*, 2013), others cannot prove a strong evidence of the association(Alam, Mishra and Chandrasekaran, 2012).

Since periodontal diseases are a biomarker of systemic diseases, it is necessary to have a proper knowledge about the prevention and intervention of periodontal diseases and to identify the highly susceptible individuals.Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar, John, Arumugham, Kumar and Srisakthi, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020b)

So the aim of the study was to analyse the distribution of community periodontal health and its treatment needs among people attending a private dental college in Chennai.

MATERIALS AND METHODS

Study setting: This study was an institution based study which was conducted in Saveetha dental college. Data for the study was taken from the patient records of Saveetha Dental college. Ethical approval was obtained by the Institutional ethical board at Saveetha University. The data was examined by 2 examiners

Study population: Study population included all the CPITN index patients who have attended college from August 2019 – March 2020. The patients from the age 18-80 years were included and they should have been interpreted by CPI scores and Treatment needs of CPITN index

Sampling: All the CPITN index patients who have been interpreted were included in the study within the age group of 18-80 years old and their case sheets were reviewed (112). Cross verification was done by photographic verification and diagnosis of the patient. To avoid sampling bias, everyone who has undergone CPITN index within the age group in that time period was included. Internal validity of the study was established by the use of gold standard periodontal index, Community Periodontal Index of Treatment Needs (1982).

Index used: CPITN index was introduced by Jukka Ainamo for the joint working committee of WHO and FDI in 1982. In the index, the mouth is divided into 6 sextants and one tooth from each sextant is examined. The indexed teeth are 16/17,11,26/27,31,36/37 and 46/47. Examination was done by WHO probe which has a ball end of diameter of 0.5 mm and a coloured bands at 3.5-5.5 mm and 8.5-11.5 mm. the index is divided into CPI scores and Treatment needs which are scored separately

Data collection: The patient details were taken from the patient records and about 112 records which recorded CPITN index were included in the study. The data was collected and reviewed by 2 examiners and entered in the MS excel sheet. The variables of the results were explained using tables and graphs directly from SPSS software

Statistical analysis: Data was imported in IBM SPSS software version 20.0. The independent variables were age and sex while the dependent variables were CPI scores and Treatment needs of CPITN index. Descriptive statistics was done and Chi square tests were done to identify the association of age and gender with CPI scores and treatment needs.

RESULTS AND DISCUSSION

In the present study, after excluding the incomplete data, sample size was 112 in which 72.32% were males and 29.68% were females (figure 1)

Results showed that 47.32% of the study sample were in the age group of 18-35 yrs, 27.68% were in the age group of 36-50 yrs and 25% were 51-80 years old(figure 2).

The CPI scores were recorded for individual indexed teeth . Results showed that CPI scores were distributed as follows: 9.82% had healthy gingiva ; 38.24% had bleeding; 34.97% had calculus ; 9.82% had pocket depth 3-4 mm and 5.65% had pocket depth 6 mm and more (table 1).

The treatment need scores were recorded for individual indexed teeth. Results of the study showed that 9.07% needed no treatment (TN0); 26.19% needed improvement of personal oral hygiene (TN1); 44.04% needed improvement of personal oral hygiene and scaling(TN2a) ; 7.58% needed improvement of personal oral hygiene and root planning (TN2b); 7.14% needed deep scaling (TN3) and 3.86% needed root planning and complex surgical procedures (table 2).

Chi square test was determined according to individual teeth, in which there was a significant difference between age and CPI score 16/17, 26/27 and 46/47 (p<0.05) (figure 3-5) (table 3). The distribution of Community periodontal Index(CPI) scores were as follows: In the age group of 18 - 35 years, more prevalence of bleeding (49.37%) was found while in age groups 36-50 years and 51-80 years , more prevalence of calculus was found which was 36.02% and 36.3% respectively

Also there was a significant difference between age and treatment needs of 16/17,11,26/27,36/37 and 46/47 (p<0.05) (figure 6-10) (table 4). In all the age groups, more prevalence was found in improvement of personal oral hygiene and scaling which was distributed as 45.59% in the age group of 18-35 years, 46.77% in the age group of 36-50 years and 38.09% in the 51-80 years .

There was no significant difference between gender and CPI scores (table 5). In the gender distribution, males had more prevalence of calculus (35.18%) and females had more prevalence of bleeding (47.31%).

There was no significant difference between gender and treatment needs (table 6). Both males and females had prevalence of improvement of personal oral hygiene and scaling (TN2a) which was distributed as 44.85% in males and 41.93% in females

Periodontal disease is a complex infectious disease resulting from mechanisms of bacterial infection and host response to bacterial challenge, and the disease is modified by environmental, acquired risk factors and genetic susceptibility. Tobacco also plays an important role in the progression of periodontal diseases(Harini and Leelavathi, 2019). As healthcare professionals, we have prevented disease occurrence and progression on all the occasions (Leelavathi *et al.*, 2016; Kannan *et al.*, 2017).So it's our duty to inform the patients about the predilection of periodontal disease, identify high risk individuals and create awareness(Srudhy and Anitha, 2015)

In the present study, more males (72.32%) participated than females. Similar findings were found which was 59.4% males and 40.6% females in a study done in South India (Balaji, Lavu and Rao, 2018). In another study done by TS Sekhon et al(Sekhon, Grewal and Gambhir, 2015) , contrastive findings were found in which 52.14% females participated.

In the present study, 47.32% participants were in the 18-35 years old group and 25% towards the 51-80 years group. In a study done by SS Oberai et al equal number of participants were present in each age group(Oberoi *et al.*, 2016). In a contrastive study by TS Sekhon et al,only 24.5% were found in 15-29 years age group(Sekhon, Grewal and Gambhir, 2015)

In the present study, 38.24% people scored bleeding ; 34.97% scored calculus and 9.82% had healthy gingiva. In a study done by T.D. Nehtravathi et al , similar findings were found (32.9% had code 1 and 34.3% had code 2) .But this study was a comparison between rural and urban populations. So in the same study , in the rural population, only 0.1% had healthy gingiva and 40.3% had pocket depth of 6 mm and more (Nethravathi *et al.*, 2015).

In the present study, 44.04% needed improvement of oral hygiene and scaling and 9.07% needed no treatment. Similar findings were found in a study which showed 3.1% needed no treatment , 32.9% needed code 1 and 37.2% needed TN2.(Nethravathi *et al.*, 2015) But in a study conducted by Oberai SS , 0% had no treatment needs(Oberoi *et al.*, 2016).

Index teeth scores were considered in the present study. To the best of our knowledge no studies reported age and gender wise distribution of individual index teeth scores. Hence comparison was done with the studies that were done using the CPI scores. But there was significance found between age and only indexed tooth 16/17. In a study by Fathima Maria et al, association between age and periodontal disease was found (Tadjoedin *et al.*, 2017).

Similarly we could not get any association between gender and CPI scores or Treatment needs. Similarly , some other studies concluded that there is no association between gender and periodontal health (Alam, Mishra and Chandrasekaran, 2012). But two other studies concluded a strong association between these two (Furuta *et al.*, 2013; Schulze and Busse, 2016) Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020b; R *et al.*, 2020; Samuel, 2021)

Limitations:

There were certain limitations to the study. One of the limitations was the record based study design. Another was the use of the CPITN index which is used mainly in field studies. Lack of external validity and small sample size are other limitations
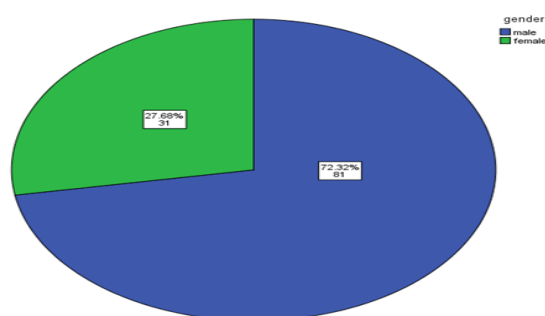
Fig.1: Pie chart shows the gender distribution in the study population in which 72.32% males and 27.68% females were present, thus representing male predominance in the study sample (blue pie).
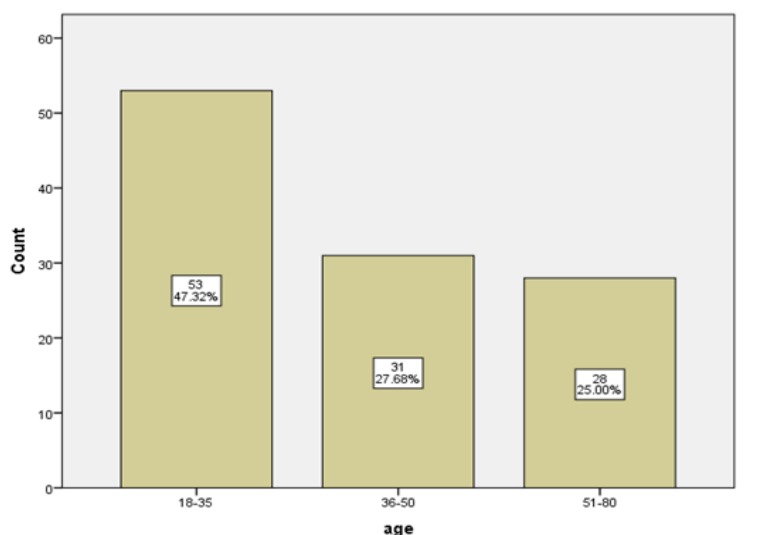

Fig.2: Bar chart shows the distribution of age in the study sample. X axis represents the age group of the study participants and Y axis represents the number of participants present in each group. More people were distributed in the 18-35 age group(47.32%).

Table 1: shows the distribution of CPI scores in the study sample. Bleeding was the most prevalent CPI score among the study population (38.24%)

CPI scores	Percentage of distribution
Healthy	9.82
Bleeding	38.24
Calculus	34.97
Pocket depth 3-4 mm	9.82
Pocket depth 6 mm and more	5.65

Table 2: shows the distribution of treatment needs in the sample population. Need of improvement of personal oral hygiene and scaling i.e. TN2a was the most prevalent treatment need (44.04%)

Treatment needs of periodontal status	Percentage of the distribution
TN 0	9.07
TN 1	26.19
TN 2a	44.04
TN 2b	7.58
TN 3	7.14
COMPLEX PROCEDURES	3.86

Fig.3: Bar chart representing the association between age and CPI scores of tooth 16/17. X axis represents age groups and Y axis represents percentage of CPI scores of tooth 16/17. Pocket depth of 16/17 (yellow bar) was more among the 51- 80 year old than the other age groups, and the association between age and CPI scores of tooth 16/17 and was found to be statistically significant .(p value = 0.036; Chi square value = 16.467a)
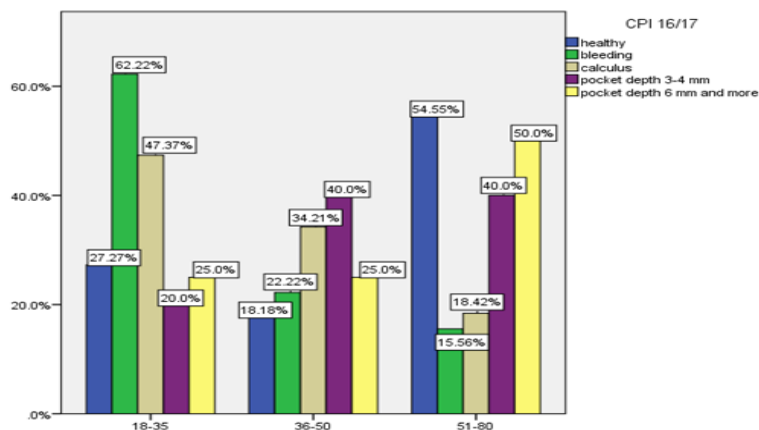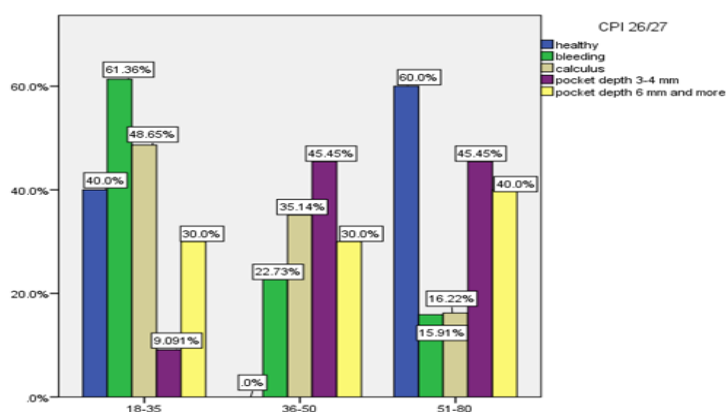

Fig.4: Bar chart representing the association between age and CPI scores of tooth 26/27. X axis represents age groups and Y axis represents percentage of CPI scores of tooth 26/27.Pocket depth of 26/27 (purple) was more among the 51- 80 year old than the other age groups, and the association between age and CPI scores of tooth 26/27 and was found to be statistically significant. (p = 0.006;Chi square value = 21.405a)

Fig.5: Bar chart representing the association between age and CPI scores of tooth 46/47. X axis represents age groups and Y axis represents percentage of CPI scores of tooth 46/47.Pocket depth of 46/47 (yellow bar) was more among the 51- 80 year old than the other age groups, and the association between age and CPI scores of tooth 26/27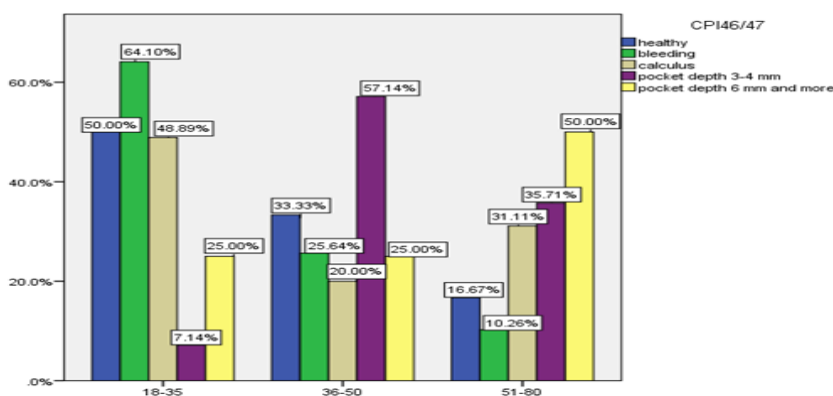 and was found to be statistically significant(p value = 0.006) and was found to be statistically significant .(p value = 0.009; Chi square value = 20.343a)

Table 3: showing age and CPI scores of indexed teeth 16/17,11,26/27,31,36/37 and 46/47. Chi square tests revealed significant differences between age and CPI scores of 16/17 ,26/27 and 46/47 (p< 0.05)

Age in years	Tooth Number	CPI scores N (%)					Total	P value
		healthy	bleeding	calculus	pocket depth 3-4 mm	pocket depth 6 mm and more		
18-35	16/17	3(5.7)	28(52.8)	18 (34)	2(3.8)	2(3.8)	53	0.03
36-50		2(6.5)	10(32.3)	13(41.9)	4(12.9)	2(6.5)	31	
51-80		6(21.4)	7(25)	7(25)	4(14.3)	4(14.3)	28	
18-35	11	10(18.9)	35(66)	5(9.4)	3(5.7)	0(0)	53	0.106
36-50		9(29)	13(41.9)	7(22.6)	2(6.5)	0(0)	31	
51-80		7(25)	11(39.3)	6(21.4)	2(7.1)	2(7.1)	28	
18-35	26/27	4(7.5)	27(50.9)	18(34)	1(1.9)	3(5.7)	53	0.006
36-50		0(0)	10(32.3)	13(41.9)	5(16.1)	3(9.7)	31	
51-80		6(21.4)	7(25)	6(21.49)	5(17.9)	4(14.3)	28	
18-35	36/37	4(7.5)	23(43.4)	22(41.5)	2(3.8)	2(3.8)	53	0.187
36-50		2(6.5)	9(29)	11(35.5)	7(22.6)	2(6.5)	31	
51-80		1(3.6)	6(21.4)	13(46.4)	6(21.4)	2(7.1)	28	
18-35	31	2(3.8)	19(35.8)	22(41.5)	10(18.9)	0(0)	53	0.524
36-50		2(6.5)	8(25.8)	14(45.2)	5(16.1)	2(6.5)	31	
51-80		2(7.1)	5(17.9)	15(53.6)	4(14.3)	2(7.1)	28	
18-35	46/47	3(5.7)	25(47.2)	22(41.5)	1(1.9)	2(3.8)	53	0.009
36-50		2(6.5)	10(32.3)	9(29)	8(25.8)	2(6.5)	31	
51-80		1(3.6)	4(14.3)	14(50)	5(17.9)	4(14.3)	28	

Fig.6: Bar chart representing the association between age and treatment needs scores of tooth 16/17. X axis represents age groups and Y axis represents percentage of treatment needs of tooth 16/17.Deep scaling of 16/17 (light green bar) seemed to be more prevalent in 51-50 years old than the other age group and association between age and Treatment needs of tooth 16/17 was found to be statistically significant .(p value = 0.003 Chi square value = 26.208a)

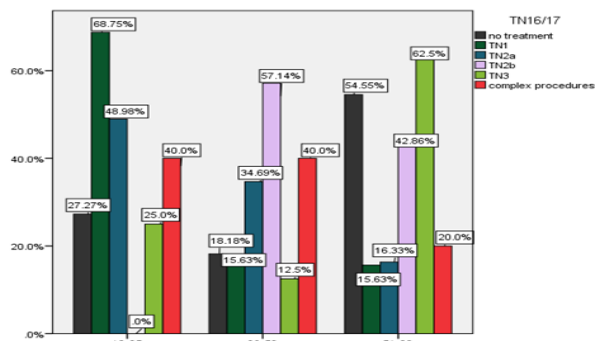**Fig.7: Bar chart representing the association between age and treatment needs scores of tooth 11. X axis represents age groups and Y axis represents percentage of treatment needs of tooth 11.Deep scaling of 11 (light green bar) seemed to be more prevalent in 51-50 years old than the other age group and association between age and Treatment needs of tooth 11 was found to be statistically significant .(p value = 0.018 Chi square value = 21.551a)**
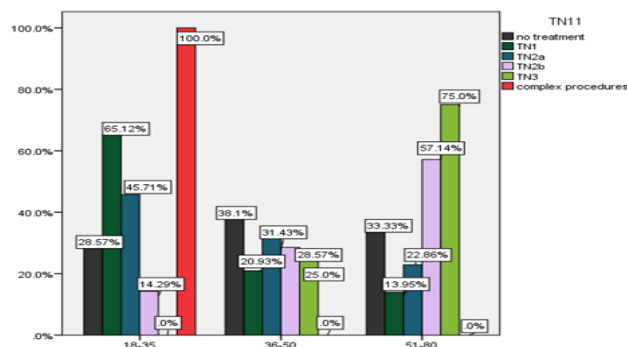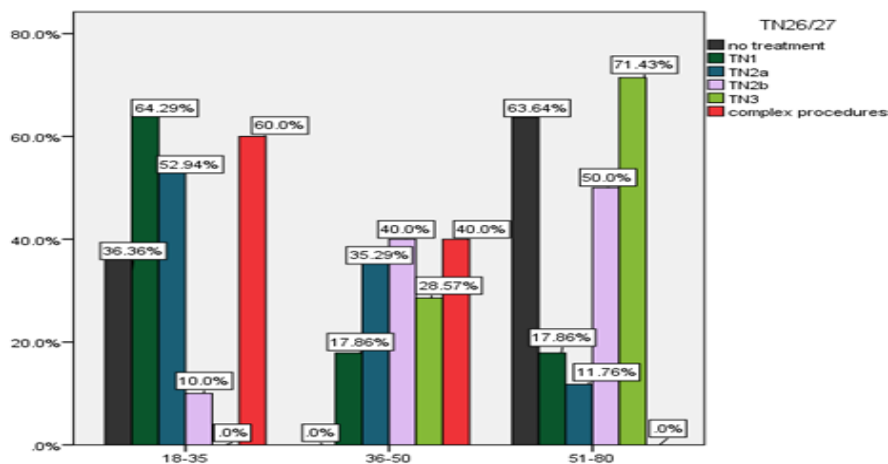
Fig.8: Bar chart representing the association between age and treatment needs scores of tooth 26/27. X axis represents age groups and Y axis represents percentage of treatment needs of tooth 26/27. Deep scaling of 26/27 (light green bar) seemed to be more prevalent in 51-50 years old than the other age group and association between age and Treatment needs of tooth 26/27 was found to be statistically significant .(p value = 0.000; Chi square value = 35.161a)
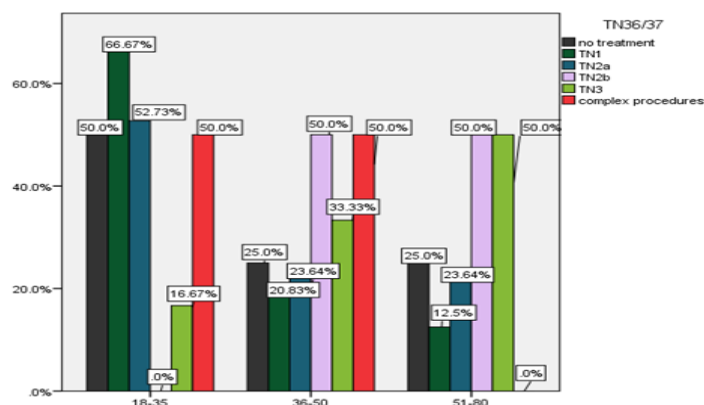

Fig.9: Bar chart representing the association between age and treatment needs scores of tooth 36/37. X axis represents age groups and Y axis represents percentage of treatment needs of tooth 36/37. Deep scaling of 36/37 (light green bar) seemed to be more prevalent in 51-50 years old than the other age group and association between age and Treatment needs of tooth 36/37 was found to be statistically significant .(p value = 0.017; Chi square value = 21.663a)

Fig.10: Bar chart representing the association between age and treatment needs scores of tooth 46/47. X axis represents age groups and Y axis represents percentage of treatment needs of tooth 46/47. Deep scaling of 46/47 (light green bar) seemed to be more prevalent in 51-50 years old than the other age group and association between age and Treatment needs of tooth 46/47 was found to be statistically significant .(p value = 0.024; Chi square value = 20.578a)
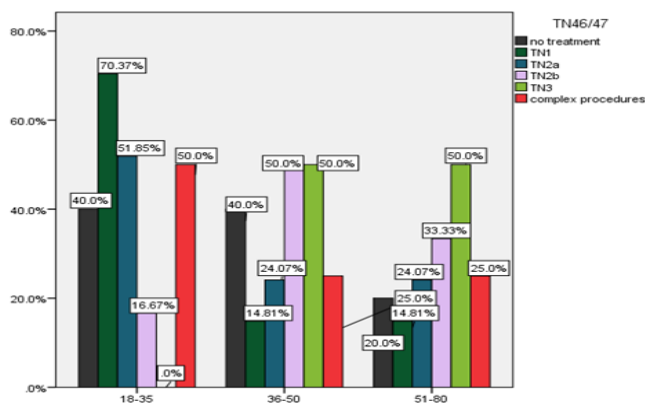
Table 4: showing age and treatment need scores of indexed teeth 16/17,11,26/27,31,36/37 and 46/47. Chi square tests revealed significant differences between age and treatment needs of 16/17, 11, 26/27, 36/37 and 46/47. (p< 0.05)

Age in years	Tooth no	Treatment Needs N (%)						Total	P value
		TN0	TN1	TN2a	TN2b	TN3	complex procedure		
18-35	16/17	3(5.7)	22(41.5)	24(45.3)	0(0)	2(3.8)	2(3.8)	53	0.003
36-50		2(6.5)	5(16.1)	17(54.8)	4(12.9)	1(3.2)	2(6.5)	31	
51-80		6(21.4)	5(17.9)	8(28.6)	3(10.7)	5(17.9)	1(3.6)	28	
18-35	11	6(11.3)	28(52.8)	16(30.2)	1(1.9)	0(0)	2(3.8)	53	0.018
36-50		8(25.8)	9(29)	11(35.5)	2(6.5)	1(3.2)	0(0)	31	
51-80		7(25)	6(21.4)	8(28.6)	4(14.3)	3(10.7)	0(0)	28	
18-35	26/27	4(7.5)	18(34)	27(50.9)	1(1.9)	0(0)	3(5.7)	53	0.000
36-50		0(0)	5(16.1)	18(58.1)	4(12.9)	2(6.5)	2(6.5)	31	
51-80		7(25)	5(17.9)	6(21.4)	5(17.9)	5(17.9)	0(0)	28	
18-35	36/37	4(7.7)	16(30.8)	29(55.8)	0(0)	1(1.9)	2(3.8)	53	0.017
36-50		2(6.5)	5(16.1)	13(41.9)	7(22.6)	2(6.5)	2(6.5)	31	
51-80		2(7.1)	3(10.7)	13(46.4)	7(25)	3(10.7)	0(0)	28	
18-35	31	3(5.7)	14(26.4)	21(39.6)	8(15.1)	5(9.4)	2(3.8)	53	0.545
36-50		1(3.2)	5(16.1)	15(48.4)	4(12.9)	3(9.7)	3(9.7)	31	
51-80		1(3.6)	3(10.7)	16(57.1)	3(10.7)	5(17.9)	0(0)	28	
18-35	46/47	2(3.8)	19(35.8)	28(52.8)	2(3.8)	0(0)	2(3.8)	53	0.024
36-50		2(6.5)	4(12.9)	13(41.9)	6(19.4)	5(16.1)	1(3.2)	31	
51-80		1(3.6)	4(14.3)	13(46.4)	4(14.3)	5(17.9)	1(3.6)	28	

Table 5: showing gender and CPI scores of indexed teeth 16/17,11,26/27,31,36/37 and 46/47. Chi square tests revealed no significant difference was found between gender and any individual teeth CPI scores (p< 0.05)

Gender	Tooth no	CPI Scores N (%)					Total	P value
		healthy	bleeding	calculus	pocket depth 3-4 mm	pocket depth 6 mm and more		
Males	16/17	9(11.1)	29(35.8)	27(33.3)	9(11.11)	7(8.6)	81	0.354
Females		2(6.5)	16(51.6)	11(35.5)	1(3.2)	1(3.2)	31	
Males	11	19(23.5)	39(48.1)	16(19.8)	5(6.2)	2(2.5)	81	0.357
Females		7(22.6)	20(64.5)	2(6.5)	2(6.5)	0(0)	31	
Males	26/27	7(8.6)	31(38.3)	27(33.3)	8(9.9)	8(9.9)	81	0.982
Females		3(9.7)	13(41.9)	10(32.3)	3(9.7)	2(6.5)	31	
Males	36/37	5(6.2)	23(28.4)	35(43.2)	12(14.8)	6(7.4)	81	0.222
Females		2(6.5)	15(48.4)	11(35.5)	3(9.7)	0(0)	31	
Males	31	5(6.2)	22(27.2)	34(42)	16(19.8)	4(4.9)	81	0.373
Females		1(3.2)	10(32.3)	17(54.8)	3(9.7)	0(0)	31	
Males	46/47	4(4.9)	25(30.9)	32(39.5)	12(14.8)	8(9.9)	81	0.218
Females		2(6.5)	14(41.9)	13(41.9)	2(6.5)	0(0)	31	

Table 6: showing gender and treatment need scores of indexed teeth 16/17,11, 26/27, 31, 36/37 and 46/47. Chi square tests revealed no significant difference was found between gender and any individual teeth CPI scores (p< 0.05)

Gender	Tooth no	Treatment Needs N (%)						Total	p value
		TN0	TN1	TN2a	TN2b	TN3	complex procedure		
Males	16/17	9(11.1)	20(24.7)	35(43.2)	6(7.4)	7(8.6)	4(4.9)	81	0.586
Females		2(6.5)	12(38.7)	14(45.2)	1(3.2)	1(3.2)	1(3.2)	31	
Males	11	16(19.8)	28(34.6)	27(33.3)	4(4.9)	4(4.9)	2(2.5)	81	0.443
Females		5(16.1)	15(48.4)	8(25.8)	3(9.7)	0(0)	0(0)	31	
Males	26/27	7(8.6)	19(23.5)	38(46.9)	9(11.1)	4(4.9)	4(4.9)	81	0.649
Females		4(12.9)	9(29)	13(41.9)	1(3.2)	3(9.7)	1(3.2)	31	
Males	36/37	6(7.4)	14(17.3)	41(50.6)	12(14.8)	4(4.9)	4(4.9)	81	0.364
Females		2(6.5)	10(33.3)	14(46.7)	2(6.5)	2(6.5)	0(0)	31	

Males	31	4(4.9)	16(19.8)	38(46.9)	9(11.1)	10(12.3)	4(4.9)	81	0.903
Females		1(3.2)	6(19.4)	14(45.2)	6(19.4)	3(9.7)	1(3.2)	31	
Males	46/47	4(4.9)	16(19.8)	3(48.1)	10(12.3)	8(9.9)	4(4.9)	81	0.416
Females		1(3.2)	11(35.5)	15(48.4)	2(6.5)	2(6.5)	0(0)	31	

CONCLUSION

Within the limitations of the study, bleeding and calculus was found to be more prevalent In the age group of 18 - 35 years and 36-50 yrs respectively. In the treatment need distribution among age groups, improvement of personal oral hygiene and scaling was the most prevalent treatment need among all the age groups. In gender wise distribution of CPI scores, calculus was more prevalent among males and bleeding was common among females. Similar to the age distribution, improvement of personal oral hygiene and scaling was the most prevalent treatment need among both males and females. More research to be done including more samples and prospective design.

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