

# PERIODONTAL TREATMENT NEEDS OF PREGNANT AND NON-PREGNANT FEMALES VISITING SHARIF MEDICAL AND DENTAL COLLEGE, LAHORE

Hira Butt<sup>1</sup>, Amna Nauman Khan<sup>2</sup>, Nauman Rauf Khan<sup>3</sup>, Khadija Amjad<sup>4</sup>, Fizza Tahir<sup>5</sup>

<sup>1</sup>Department of Oral Pathology, Sharif Medical and Dental College, Lahore Pakistan

<sup>2</sup>Department of Community & Preventive Dentistry, Sharif Medical and Dental College, Lahore Pakistan

<sup>3</sup>Department of Oral Pathology, Sharif Medical and Dental College, Lahore Pakistan

<sup>4</sup>Department of Community & Preventive Dentistry, Sharif Medical and Dental College, Lahore Pakistan

<sup>5</sup>Department of Prosthodontics, Institute of Dentistry, CMH Lahore Medical College, NUMS

## ABSTRACT

**Objective:** To determine the periodontal treatment needs by comparing needs of pregnant and non-pregnant females

**Materials and Methods:** A cross sectional study was conducted among 44 pregnant and 52 non pregnant women visiting the gynecology department of Sharif Medical and Dental College and Raiwind Polyclinic, Lahore from March 2019 to August 2019. Data was collected using the Community Periodontal Index of Treatment Needs (CPITN). The data was analyzed using SPSS version 22 and all nominal data was entered in frequencies and percentages whereas all numerical data was entered as mean with its respective standard deviation.

**Results:** The mean age of  $26.86 \pm 4.511$  for pregnant women and  $31.08 \pm 7.213$  for non-pregnant women. The analysis of treatment needs of pregnant and non-pregnant women revealed that the percentage of women who required no treatment (TN0) was higher in non-pregnant women (1.9%) in comparison to pregnant women (1.2%). It was observed that complex treatment, scaling and Oral hygiene instructions (TN3) were found to be the treatment need of none of the pregnant women while 1.9% of the non-pregnant women. The treatments needs of both the groups fell in the category of TN1 (Oral hygiene instructions) and TN2 (Scaling and prophylaxis + oral hygiene instructions) with the percentage of non-pregnant women requiring TN1 and TN2 being higher in comparison to pregnant women.

**Conclusion:** The percentage of women who required no treatment (TN0) was higher in non-pregnant women in comparison to pregnant women. There was no pregnant woman who required complex treatment, scaling and Oral hygiene instructions (TN3) whereas 1.9% of the non-pregnant women needed it. While the percentage of non-pregnant women requiring TN1 and TN2 was more in comparison to pregnant women.

**Keywords:** Pregnant women, Periodontal health, Treatment needs, Community Periodontal Index for Treatment Needs

## INTRODUCTION

Oral health has a tremendous impact on the general health, wellbeing and quality of life of an individual.<sup>1</sup> There are multiple factors that control oral health including socioeconomic status, age and education.<sup>2</sup> Lack of oral hygiene awareness and inability to timely access the appropriate dental treatment

---

### Correspondence:

**Dr. Hira Butt**

Demonstrator, Department of Oral Pathology, Sharif Medical and Dental College, Lahore Pakistan

Email: hira.ah.butt@gmail.com

Contact: +923367160357

are one of the major reasons for the deterioration of oral health.<sup>3</sup> The review of literature supports that systemic illnesses also have a vital impact on the oral health of an individual. These include diabetes, coronary heart disease and chronic kidney disease.<sup>4,5,6</sup>

Pregnancy has been reported to have a direct association with the health status of oral and para-oral soft and hard tissues of individuals.<sup>7</sup> A large number of women have been identified to suffer from periodontal problems during pregnancy.<sup>8</sup> The general periodontal health of women is thought to deteriorate with the progression of gestational age.<sup>9,10</sup> The proposed reason for the periodontal problems is the increased level of estrogen and progesterone during pregnancy which makes the gingiva appear red and friable.<sup>11</sup> Pregnant women have been found to have bleeding gums, calculus deposits, deep periodontal pockets, attachment loss and tooth mobility which ultimately results in tooth loss.<sup>12</sup>

Studies conducted in the past have reported that periodontal health problems are not limited to the pregnant women. Non-pregnant women have been seen to suffer from the same periodontal problems as well. According to one study, conducted on the periodontal health of pregnant and non-pregnant females, it was reported that both the groups had calculus deposition and shallow periodontal pocket formation as their major periodontal problems. The pregnant women had more shallow periodontal pockets and in comparison the non-pregnant women had more calculus deposits. Furthermore, the non-pregnant women also had deep periodontal pockets in comparison to the pregnant females.<sup>13</sup>

The Community Periodontal Index for Treatment Needs (CPITN) due to its ability to assess periodontal health and the treatment needs of the community has been used in previous studies.<sup>14</sup> The index identifies patients requiring no treatment at all, those requiring oral hygiene instructions, the patients in need of scaling, prophylaxis in addition to oral hygiene instructions and lastly, those requiring complex treatment, scaling and oral hygiene instructions.<sup>15</sup>

The periodontal treatment needs of pregnant women in comparison to non-pregnant women have been studied in the past. According to one of the studies, all the pregnant women while 97.6% of the non-pregnant women included in the study required oral hygiene instructions (TN1) only. One

study reported that the proportion of women who required complex treatment (TN3) was overall very low with 6.67% of the pregnant women while 1.67% of the non-pregnant women requiring complex treatment.<sup>13</sup> In another study where majority of the pregnant as well as non-pregnant participants required oral hygiene instructions only.<sup>16</sup> It has also been reported in another study that 94% of the pregnant women required scaling, prophylaxis as well as oral hygiene instructions (TN2) in comparison to 88.2% non-pregnant women<sup>17</sup>. Our study aims to assess the periodontal treatment needs of pregnant and non-pregnant women.

## MATERIALS AND METHODS

A cross sectional study was conducted from March 2019 to August 2019 among 44 pregnant and 52 non pregnant women visiting the gynecology department of Sharif Medical and Dental College and Raiwind Polyclinic, Lahore (community outreach program of the institute) using non-probability convenient sampling technique. Sample size was calculated taking the minimum prevalence of periodontal disease to be 5% among pregnant women and keeping the level of significance at 5% with power of study 90%, the sample size obtained using an online sample size calculator. Demographics like name, age, gender, occupation and residence were recorded.

The study was conducted over a period of six months from March 2019 till August 2019 after approval from the ethical committee of Sharif Medical Research Centre (SMRC). Informed consent was taken from every participant prior to data collection. The inclusion criteria was women who gave consent to be a part of the study and were in the child bearing age. While women who had any systemic illness were excluded from the study.

All assessed data was entered in a specially designed proforma containing tables of all the indices used. Data was collected using the Community Periodontal Index of Treatment Needs (CPITN) as shown in table 1.<sup>15,18</sup> The periodontal treatment needs were classified as shown in table 2.<sup>15</sup> The equipment used included the CPITN probe and Mouth mirror. The data was analyzed using SPSS version 23 and all nominal data was entered in frequencies and percentages whereas all numerical data was entered as mean with its respective standard deviation.

**RESULTS**

A cross sectional comparative study was conducted on a total of 96 women, 44 pregnant and 52 non pregnant, visiting the gynecology department Sharif Medical and Dental College and Raiwind Polyclinic Lahore (community outreach program of Sharif Medical and Dental College) with a mean age of 26.86±4.511 (years) for pregnant women and 31.08±7.213 (years) for non-pregnant women. It was seen that the mean CPITN score for pregnant women was 1.59±0.897 and the percentage of persons affected as measured by CPITN revealed the results given in table 3.

The mean number of sextants affected per person in pregnant women showed that the mean number of sextants coded as 2 (Calculus) were the highest (3.8%) while those coded 4 (pocket depths of 6mm or more) were the lowest as shown in table 4

The mean CPITN scores for non- pregnant women was 2±0.485. The percentage of persons affected as measured by CPITN revealed the results given in table 5.

The mean number of sextants affected per person for non-pregnant women showed that the mean number of sextants coded as 2 (Calculus) were the

highest (4.3%) while those coded 3 (pocket depths of 4 to 5 mm) and those coded 4 (pocket depths of 6mm or more) were the lowest (0.1%) each as shown in table 6

The analysis of treatment needs of pregnant and non-pregnant women revealed that the percentage of women who required no treatment (TN0) was higher in non-pregnant women (1.9%) in comparison to pregnant women (1.2%). It was seen that complex treatment, scaling and Oral hygiene instructions (TN3) was found to be the treatment need of none of the pregnant women while 1.9% of the non-pregnant women required it. It was very evident that predominantly the treatments needs of both the groups fell in the category of TN1 (Oral hygiene instructions) and TN2 (Scaling and prophylaxis + oral hygiene instructions) with the percentage of non-pregnant women requiring TN1 and TN2 being higher in comparison to pregnant women as shown in figure 1.

**DISCUSSION**

A cross sectional comparative study was conducted for assessing the periodontal treatment needs of pregnant and non-pregnant women visiting the gynecology department of Sharif Medical and Dental college (SMDC) and the gynecology department of the outreach program of the institute, Raiwind

**Table 1: Scoring for Community Periodontal Index For Treatment Needs<sup>15,18</sup>**

Periodontal Health	Coding
Healthy	0
There is bleeding either after the use of mouth mirror, probe or directly	1
The black band on the probe visible. During probing Calculus is observed	2
The margin of the gingiva is within the black band on the probe and the pocket depth is 4 - 5 mm	3
The black band on the probe is invisible and the pocket depth is 6 mm or higher	4
Excluded sextant	X
Not recorded	9

**Table 2: Periodontal treatment needs<sup>15</sup>**

Treatment need score	Treatment need
TN0	No treatment required
TN1	Oral hygiene instructions (OHI)
TN2	Scaling and prophylaxis (SC) and Oral hygiene instructions (OHI)
TN3	Complex treatment (deep scaling, root planning and complex surgical procedures) ,scaling and prophylaxis and Oral hygiene instructions.

**Table 3: Prevalence of Persons Affected in Pregnant Females**

AGE	NO. EXAMINED	DENTATE PATIENTS	% PERSONS CODED				
			H (0)	B(1)	C(2)	P1(3)	P2(4)
17-37	44	44	H (0)	B(1)	C(2)	P1(3)	P2(4)
			20.5	6.8	65.9	6.8	0

**Table 4: Mean Number of Sextants for Pregnant Females**

AGE	NO. EXAMINED	DENTATE PATIENTS	% PERSONS CODED					
			H(0)	B(1)	C(2)	P1(3)	P2(4)	X
17-37	44	44	H(0)	B(1)	C(2)	P1(3)	P2(4)	X
			1.2	0.4	3.8	0.3	0	0.1

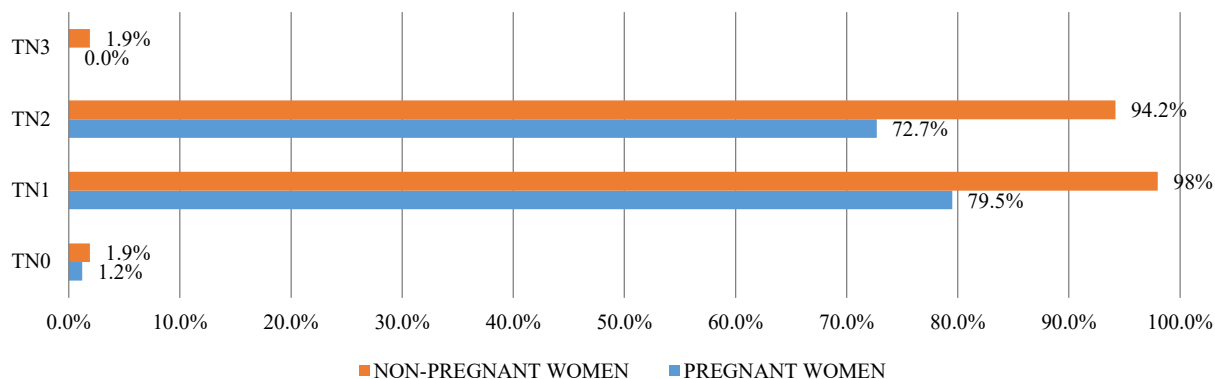
**Table 5: Prevalence of Persons Effected in Non-Pregnant Females**

AGE	NO. EXAMINED	DENTATE PATIENTS	% PERSONS CODED				
			H(0)	B(1)	C(2)	P1(3)	P2(4)
18-50	52	52	H(0)	B(1)	C(2)	P1(3)	P2(4)
			1.9	3.8	88.5	3.8	1.9

**Table 6: Mean Number of Sextants for Non-Pregnant Females**

AGE	NO. EXAMINED	DENTATE PATIENTS	% PERSONS CODED					
			H(0)	B(1)	C(2)	P1(3)	P2(4)	X
18-50	52	52	H(0)	B(1)	C(2)	P1(3)	P2(4)	X
			0.5	0.7	4.3	0.1	0.1	0.4

PERIODONTAL TREATMENT NEEDS OF PREGNANT AND NON PREGNANT WOMEN



**Fig 1: Treatment Needs of Pregnant Women in Comparison to Non-Pregnant Women**

Polyclinic over the duration of 6 months.

According to one study conducted for assessment of periodontal health and treatment needs of pregnant and non-pregnant women the mean number of sextants coded 0 was lesser in pregnant women (0.80%) in comparison to non-pregnant women

(1.52%).<sup>13</sup> In another study, it reported that the mean number of sextants coded 0 in pregnant women was 0.09%.<sup>19</sup> These findings are contrary to our study where the mean number of sextants Coded 0 was higher (1.2%) in pregnant women in comparison to the non-pregnant women (0.5%). Similar results

were seen in a study which reported that mean number of sextants coded 0 was higher in pregnant women as compared to non-pregnant women.<sup>17</sup>

It was also reported in the study above<sup>13</sup> that the mean number of sextants coded 1 was higher in pregnant women (0.53%) as compared to non-pregnant women (0.32%) which is also contrary to our study, where it was 0.4% in pregnant while 0.7 % in the present study that mean number of sextants coded 2 were lesser in pregnant women as compared to the non-pregnant women i.e. 3.8% and 4.3% respectively. This was found to be comparable to another study, where the results were found to be 2.92% for pregnant women and 3.48% for non-pregnant women.<sup>13</sup> In this study the mean number of sextants coded 4 were zero in pregnant women while in non- pregnant women it was 0.1. These results are similar to another study where the mean number of sextants in pregnant women coded 4 was lower as compared to the non- pregnant women.<sup>17</sup> In one study the mean number of sextants coded 4 in pregnant women was 0.88%.<sup>19</sup> On the contrary, another study another study reported that mean number of sextants coded 4 was higher in pregnant women (0.29%) as compared to 0.02% in non-pregnant women while the mean number of sextants coded X were zero on both the study groups.<sup>13</sup> Similarly, it was seen in one study the mean number of sextants coded X in pregnant women was zero.<sup>19</sup> This is contrary to our study where the mean number of sextants coded X were lesser in the pregnant group (0.1%) while 0.4 % in the non-pregnant group.

The community periodontal index for treatment needs (CPITN) was also used to assess the treatment needs of pregnant women in comparison to the non-pregnant group and it was seen that the proportion of non-pregnant women not requiring any treatment (TN0) was slightly higher in comparison to the pregnant women i.e. 1.9% and 1.2% respectively. These results are comparable to another study, where it was reported that none of the pregnant women fell in this category<sup>13,19</sup> while 3.33% of the non-pregnant women required no treatment.<sup>13</sup> It was seen in our study that the percentage of pregnant women requiring only oral hygiene instructions (TN1) was lesser in comparison to the non-pregnant women i.e. 79.5% and 98% respectively. Similar was the case with the pregnant women requiring scaling, prophylaxis and oral hygiene instructions(TN3),

where more non-pregnant women had treatment needs TN1 and TN2. It was seen previously in a study that all the pregnant women required TN1 and TN2<sup>19</sup> while another one reported that more non-pregnant women required TN2 in comparison to pregnant women.<sup>17</sup> Contrary results have been reported by another study where the percentage of pregnant women with treatment needs TN1 (oral hygiene instructions) and TN2 (scaling, prophylaxis and oral hygiene instructions) was higher in comparison to the non-pregnant group<sup>13</sup> Another difference in both the studies was that none of the pregnant women in our study required complex treatment, scaling and oral hygiene instructions (TN3) while 1.9% of the non-pregnant women fell in this category. In the study mentioned above the pregnant women (6.67%) who had treatment needs of the level TN3 were more in comparison to the non- pregnant women(1.67%).<sup>13</sup> One study reported that 48.4% pregnant women required TN3.<sup>19</sup>

## CONCLUSIONS

The percentage of women who required no treatment (TN0) was higher in non-pregnant women as compared to pregnant women. Also there was no pregnant woman who required complex treatment, scaling and Oral hygiene instructions (TN3) whereas 1.9% of the non-pregnant women needed it. The percentage of non-pregnant women requiring TN1 and TN2 was more in comparison to pregnant women.

## RECOMMENDATIONS

There is a dire need for development of oral health awareness programs and provision of dental treatment in the rural areas. Efforts should be made to ensure the provision of oral health care facilities to individuals with deteriorated of oral health which including the elderly, children and pregnant women.

## LIMITATION

One limitation faced during the study was that due to the lack of awareness of importance of oral health and regular dental checkup some women, both pregnant and non-pregnant were reluctant to participate in the study.

## ACKNOWLEDGEMENTS

We thank and acknowledge all the Gynecology department of Sharif Medical and Dental College and Raiwind Polyclinic, Lahore (SMDC)and espe-

cially Sharif Medical Research Centre (SMRC) for allowing us to conduct this study.

## REFERENCES

- Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century--the approach of the WHO Global Oral Health Programme. *Community dentistry and oral epidemiology*. 2003;31 Suppl 1:3-23.
- Saddki N, Yusoff A, Hwang YL. Factors associated with dental visit and barriers to utilisation of oral health care services in a sample of antenatal mothers in Hospital Universiti Sains Malaysia. *BMC public health*. 2010;10(1):75.
- Kenagy GP, Linsk NL, Bruce D, Warnecke R, Gordon A, Wagaw F, et al. Service utilization, service barriers, and gender among HIV-positive consumers in primary care. *AIDS patient care and STDs*. 2003;17(5):235-44.
- Nassar PO, Poletto R, Salvador CS, Felipetti FA, Nassar CA. One-stage full-mouth disinfection and basic periodontal treatment in patients with diabetes mellitus. *Journal of Public Health*. 2014;22(1):81-6.
- Thomopoulos C, Tsioufis C, Soldatos N, Kasiakogias A, Stefanadis C. Periodontitis and coronary artery disease: a questioned association between periodontal and vascular plaques. *American journal of cardiovascular disease*. 2011;1(1):76.
- Patil S, Khaandelwal S, Doni B, Rahuman F, Kaswan S. Oral manifestations in chronic renal failure patients attending two hospitals in North Karnataka, India. *Oral Health Dent Manag*. 2012;11(3):100-6.
- Mirza KB, Al-Saidy AH, Mohammad CA. The Prevalence And Severity of Periodontal Disease in Different Stages of Pregnancy and in Women Taking Oral (Contraceptive Pills) in Sulaimani City, Kurdistan Region, Iraq. *Diyala Journal of Medicine*. 2013;4(1):61-73.
- Laine MA. Effect of pregnancy on periodontal and dental health. *Acta Odontologica Scandinavica*. 2002;60(5):257-64.
- Løe H, Silness J. Periodontal disease in pregnancy I. Prevalence and severity. *Acta odontologica Scandinavica*. 1963;21(6):533-51.
- Hugoson A. Gingivitis in pregnant women: A longitudinal clinical study. *Odont Revy*. 1971;22:65-84.
- Lindhe J, Lang NP, Karring T. *Clinical periodontology and implant dentistry*: Blackwell Munksgaard Oxford; 2003.
- Cohen DW, Friedman L, Shapiro J, Kyle GC. A longitudinal investigation of the periodontal changes during pregnancy. *Journal of Periodontology-Periodontics*. 1969;40(10):563-70.
- Kashetty M, Kumbhar S, Patil S, Patil P. Oral hygiene status, gingival status, periodontal status, and treatment needs among pregnant and nonpregnant women: A comparative study. *J Indian Soc Periodontol*. 2018;22(2):164-70.
- Denloye O. Periodontal status and treatment needs of 12-15 year old institutionalized mentally handicapped school children in Ibadan, Nigeria. *Tropical Dental Journal*. 1999:38-40.
- Peter S. *Essentials of preventive and community dentistry*: Arya (Medi) Publishing House; 2000.
- Sequeira P, Varma R. Periodontal disease in pregnancy. *JIDA*. 1998;69:100-2.
- Miyazaki H, Yamashita Y, Shirahama R, Goto-Kimura K, Shimada N, Sogame A, et al. Periodontal condition of pregnant women assessed by CPITN. *J Clin Periodontol*. 1991;18(10):751-4.
- Diab HA, Hamadeh GN, Ayoub FJJolSoP, Dentistry C. Evaluation of periodontal status and treatment needs of institutionalized intellectually disabled individuals in Lebanon. 2017;7(3):76.
- Opeodu O, Dosumu E, Arowojolu MJAom, research hs. Periodontal condition and treatment needs of some pregnant women in Ibadan, Nigeria. 2015;5(3):213-7.