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Prevalence of Oral Diseases During Pregnancy and Find an Association Between Self-Perceived Oral Health and Oral Health Related Quality of Life

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Abstract
Prevalence of oral diseases during pregnancy and find an association between self perceived Oral health and Oral health related quality of life among pregnant and non-pregnant women. To assess self perceived Oral factors on Oral health related quality of life among pregnant and non-pregnant. This cross-sectional descriptive study was conducted in Saraswati Medical College, Unnao. In our study 800 sample size collected aged 18-35 years attending OPD Saraswati Medical College Unnao. The data was collected during June 2023 to November 2023. The study participants were recruited from the Department of Obstetrics and Gynecology and conducted with the collaboration of department of dentistry, participants were included in the study who were followed our inclusion criteria such as aged between 18-35 years, those patients were excluded whom suffering from systemic disease and under medication. In this study total sample divided into two groups, group 1 consist 400 pregnant and group 2 consist 400 non pregnant women. This study based on the Self perceived status questionnaire consisted of 10 questions followed by Community periodontal index DMFT index. The examination was done by a single calibrated examiner from the department of dentistry. Data was analyzed using the student independent t test and Statistical significance was considered at $p<0.05$ Descriptive statistics was done which provided the percentages. Significant difference found in our results and concluded women perceived as having food lodgment, disturbed sleep, swollen gums, sensitive teeth followed by bleeding gums, tooth pain, burning gums whereas non pregnant women perceived as having sensitive teeth, problem day to day and food lodgment.

INTRODUCTION

Pregnancy is associated with several transient changes including various physical sign and symptoms which not only affects the patient's health but also their relations with others in the surroundings[1]. During this state the levels of circulating hormones vary, also, it is said that pregnancy effects the teeth of mother. The ecology or the bacterial flora of dental plaque is the main etiological factor of gingival and periodontal diseases[2]. In addition the hormonal and vascular changes due to pregnancy often amplify the inflammatory response in presence of these local irritants[3]. Poor oral hygiene cumulated with local irritants such as calculus, plaque and food debris are associated with gingival changes. These changes must be recorded by community periodontal index, oral hygiene index and DMFT index. Pregnancy is a state of physiological condition that brings about various changes in the oral cavity along with other physiological changes taking place throughout the female body[4]. Gingival hyperplasia, gingivitis, pyogenic granulomas and various salivary alterations are some of the changes commonly witnessed among pregnant women[5]. The role of high levels of circulating estrogen is well established and associated with high prevalence of gingivitis and gingival hyperplasia[6].

Aims and Objectives: Prevalence of oral diseases during pregnancy and find an association between self-perceived Oral health and Oral health related quality of life among pregnant and non-pregnant women.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted in Saraswati Medical College, Unnao. In our study 800 sample size collected aged 18-35 years attending OPD Department of Obstetrics and Gynecology. The data was collected during October 2022 to October 2023. A sample size of 800 was taken out which 400 were pregnant (group 1) and 400 were non pregnant (group 2) women.

Selection of the Study Participants The study participants were recruited from the Department of Obstetrics and Gynecology, Saraswati Medical College, Unnao, based on the inclusion criteria. Non pregnant women recruited were mainly relatives of pregnant women who accompanied them for the check up and from the Department of General Medicine. In our study inclusion criteria were pregnant women reporting for antenatal check-up, any patients were excluded if they were suffering from system disease.

Data Collection: A total of 800 participants were included in the study, which consisted of 400 pregnant (group 1) and 400 non pregnant (group) women. The study was carried out using a standardized Proforma. The Proforma consisted of following parts. Questionnaire related to demographic profile, self-perceived questionnaire and third part consisted of clinical and oral examination.

Questionnaires: The general information regarding the demographic profile, dental history, diet history, personal habits and oral hygiene practices was collected from the pregnant and non-pregnant women through an interview. Self-perceived status questionnaire consisted of 10 questions followed by DMFT and CPI index. Each study participants took around 15-20 minutes to complete the selfv -administered questionnaire.

Clinical Examination: The examination was done by a single calibrated examiner. Autoclaved instruments were taken for the day-to-day examination. The examination was carried out under the natural light. The clinical examination was carried out to assess the caries experience using decayed, missing and filled teeth index (DMFT index) and for periodontal status (Community Periodontal Index) 9 with Loss of Attachment using WHO criteria.

RESULTS AND DISCUSSIONS

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 14.0. Statistical significance was considered at $p<0.05$. Descriptive statistics was done which provided the percentages. The statistical test applied was independent t test. Total of 800 women participated in this study out of which 400(50%) were pregnant and 400 (50%) were non-pregnant women. Out of 400 pregnant women, 88 (22%), 122 (30.5%), 190 (47.5%) were in first, second and third trimester of pregnancy respectively. (Table 2)

Among the pregnant women the mean DMFT was 1.01; out of which, mean number of Decayed teeth was 1.77, mean number of Missing teeth was 0.76 and mean number of Filled teeth was 0.5. Among the non-pregnant women, mean DMFT was found to be 0.823, out of which mean number of Decayed teeth was 1.35, mean number of Missing teeth was 0.715 and mean number of Filled teeth was 0.405. It was found that mean DMFT was significantly higher in pregnant women compared to non-pregnant women ($p<0.0001$).

In the present study, out of 400 pregnant women 36 (9%) had code 0, 136 (34%) had code 1, 196 (49%) had code 2, 32 (8%) had code 3 and none of them had code 4. Out of 400 non-pregnant women, 76 (14%) had code 0, 142 (40.5%) had code 1, 182 (45.5%) code 2, none of them had code 3 and code 4. None of them

Table 1: Group 1 distribution on the bases of trimester

Duration of pregnancy	No. of patients	Percentage
First trimester	88	22
Second trimester	122	30.5
Third trimester	190	47.5
Total	400	100

Table 2: DMFT showing significantly higher in group 1 compared to group 2

	Group 1	Group 2	p-value
Mean	6.05	4.47	<0.0001*
SD	2.48	2.26	
SEM	1.10	1.09	
N	400	400	

Table 3: Distribution of the study groups according to their CPI (Community Periodontal Index)

CPI	Criteria	Pregnant (n)	Percentage	Non-Pregnant (n)	Percentage
0	Healthy	36	9	76	14
1	Bleeding	136	34	142	40.5
2	Calculus	196	49	182	45.5
3	Pocket 4-5 mm	32	8	0	0
4	Pocket 6mm or more	0	0	0	0
Total		400	100	400	100

Table 4: Self reported oral health in relation to OHRQOL pregnant and non-pregnant women

Symptoms	Self reported oral health status	Prevalence	
		Pregnant	Non- pregnant
Bleeding gums	Present	221	139
	Absent	179	261
Burning gums	Present	201	109
	Absent	199	291
Swollen gums	Present	253	149
	Absent	147	251
Loose teeth	Present	151	109
	Absent	249	291
Decayed teeth	Present	139	149
	Absent	261	251
Tooth pain	Present	205	141
	Absent	195	259
Food lodgment	Present	265	171
	Absent	135	229
Sensitive teeth	Present	240	209
	Absent	160	191
Problems performing day to day activity	Present	221	197
	Absent	179	203
Disturbed sleep	Present	259	143
	Absent	141	257

Table 5: Showed significant differences between group 1 and group 2.

	Symptoms present		Symptoms absent		
	Pregnant (Group 1)	Non- pregnant (group 2)	Pregnant (Group 1)	Non- pregnant (group 2)	p-value
Mean	248.5	151.6	184.5	204.4	<0.00001*
SD	53.13	42.87	49.51	42.82	
SEM	14.64	11.39	14.01	11.39	
No. of symptoms	10	10	10	10	

had Loss of Attachment in accordance with WHO oral health survey methodology, which states that when the CEJ is not visible and the highest CPI score for the sextant is less than 4, any loss of attachment for the sextant is estimated to be less than 4mm (WHO Basic survey 1997).

The most self reported oral health problem affecting pregnant women were bleeding from gums, swollen gums, sensitivity teeth, and pain and food lodgment. In our study, we included these criteria and found prevalence accordingly as showing in (Table 5).

On the basis of symptoms present and absent value calculated via unpaired t test and compare to (group 1 and group 2). In which significant higher in group 1 comparatively group 2 and p value is <0.0001 (Table 6).

Measurement of the impact of oral conditions on quality of life should be part of the evaluation of oral health because clinical indicators alone cannot describe the symptoms of dental patients or their ability to perform daily activities. A woman's pregnancy experience not only influences her general health but also has an effect on her oral health. Diet and oral hygiene practices changes due to oral problems. High levels of oral diseases may also have an impact on the oral-health-related quality of life. Establishing a healthy oral environment is the most important objective planning the dental care of pregnant women[7]. The present study showed means DMFT which was higher in pregnant women comparatively non-pregnant women. The decayed

component was higher among pregnant women compared to non-pregnant women., the missing component was higher among pregnant compared to non-pregnant women., the filled component was higher among pregnant women compared to non-pregnant women as pregnant women had more dental visit compared to non-pregnant women on the bases of restored or filled teeth. Our results resemble to NA Ingle[8] and Montero J[9].

In this study, pregnant and non-pregnant women had more of code 2 and code 1 respectively in total sample, but on the basis of CPI, in Group 1 (Pregnant) code 2 was higher followed by code 1,0,3 and 4 and in Group 2 (Non-pregnant) code 2 was higher followed by 1,0,3 and 4 code value such as 40.5%, 14%, 0% and 0% respectively. In pregnant women 14 (4.7) had code 4 where has none had code 4 in non-pregnant women. Our study results resembled with previous study that was conducted by Sourabha K.G[10].

The present study had only 32 pregnant women having code of 3 which is lower compared non-pregnant women. Acharya S[11], according to their study, population had periodontal pockets (pocket depth ≥4mm) resembles to present study in which pregnant women highly suffer from periodontal disease. In the present study 10 self-perceived questions regarding dental problems were asked as shown in (Table 5). It was seen that pregnant women perceived as having food lodgment, disturbed sleep, swollen gums, sensitive teeth followed by bleeding gums, tooth pain, burning gums whereas non pregnant women perceived as having sensitive teeth, problem day to day and food lodgment. So our results do not resemble to previous study (Sourabha K.G. *et al.*). In our study chewing discomfort due to food lodgment was higher and pain was moderate, which is similar to Yiengprugsawan[12].

CONCLUSIONS

In order to promote health, it is necessary for the would-be -mothers to be aware of disease symptoms and to be encouraged to adopt appropriate oral health behavior. Pregnant women are more likely to seek dental care if their gynecologist/antenatal care giver recommends. They are better than the dentists to counsel and convince the patients regarding oral health care during the prenatal and postnatal period. Pregnant women must be educated about the importance of maintaining good oral hygiene, expected changes in the oral cavity and routine dental visits during pregnancy. Those involved in obstetric and prenatal care may be the first health professionals to become aware of developing oral conditions and it is important that they can provide appropriate information, advice and reassurance followed by referral for a dental examination, treatment and monitoring as necessary.

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