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EVALUATION OF ORAL HEATH IN PREGNANT AND NON PREGNANT WOMEN: AN ORO-SYMPTOMATIC STUDY

Dental Science

KEYWORDS: DMFT Index, Community Periodontal Index, Pregnant and Non-pregnant, Self-perceived status questionnaire

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ABSTRACT

Aims& objective: Prevalence of oral diseases during pregnancy and find an association between self perceived Oral health's on 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.

Material and method: A cross-sectional descriptive study was conducted in GCRG institute of Medical Sciences and Hospital, Lucknow. In our study 400 sample size collected aged 18-35 years attending OPD of GCRG Institute of Medical Sciences and Hospital of Lucknow city. The data was collected during October 2016 to January 2017. The study participants were recruited from the Department of Obstetrics and Gynecology, participants were included in the study, which consisted of 200 pregnant (group 1) and 200 non pregnant (group) women. Self-perceived status questionnaire consisted of 10 questions followed by Community periodontal index DMFT index. The examination was done by a single calibrated examiner.

Results and conclusion: 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 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.1 Gingival hyperplasia, gingivitis, pyogenic granulomas and various salivary alterations are some of the changes commonly witnessed among pregnant women.2 The role of high levels of circulating estrogen is well established and associated with high prevalence of gingivitis and gingival hyperplasia.3 Progesterone in the serum is also seen to be associated with melasma, presenting a bilateral pigmentation or brown patches in the mid face region.3,4 A general view of physiological changes on body systems during pregnancy is given in Table 1

Changes In pregnancy	Blood chemistry	Increase no. of blood cells
		Increase clotting factors
		Increase fibrinolytic activity
		Iron deficiency and anemia
	Cardiovascular system	Tachycardia
		Increase cardiac output and heart rate
		Increase stroke volume
	Respiratory system	Displacement of diaphragm superiorly
		Decrease functional reserve capacity
		Increase the risk of apnea and dyspnea
		Hyperventilation
	Gastrointestinal system	Nausea and vomiting
		Heart burn and acidity
	General changes	Moods and behavior change
		Nutritional demand

Table 1: Key physiological change observed in various body systems during pregnancy

Quality of life (QoL) is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life. What makes it challenging to measure is that, although the term "quality of life" has meaning for nearly everyone and every academic discipline, individuals and groups can define it differently.[5] High levels of oral diseases may also have an impact on the oral-health-related quality of life (OHRQoL) as well.[6] Since the old wives' tale of "loss of a tooth for every pregnancy", oral health during pregnancy has long been focus of interest. Studies documenting the effects of hormones on the oral health of pregnant women suggest that 25 to 100 percent of these women experience gingivitis and that 10 percent may develop pyogenic granuloma. Good oral health is important across a person's lifespan. Pregnancy is particularly important time to promote oral health and healthy behavior, including education about the prevention of dental caries and others related to oral disease.[7]

Although some studies on OHRQoL among pregnant women have been reported, they have been limited to exploring the impact of certain factors, such as pain, on the OHRQoL[6]

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Materials and method: A cross-sectional descriptive study was conducted in GCRG institute of Medical Sciences and Hospital, Lucknow. In our study 400 sample size collected aged 18-35 years attending OPD of GCRG Institute of Medical Sciences and Hospital of Lucknow city. The data was collected during October 2016 to January 2017. A sample size of 400 was taken out which 200 were pregnant (group 1) and 200 were non pregnant (group 2) women.

Selection of the Study Participants The study participants were recruited from the Department of Obstetrics and Gynecology, GCRG Institute of Medical Sciences and Hospital of Lucknow 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, pregnant women reporting for antenatal check-

up, Pregnant and non-pregnant women aged 18-35 years. Those patients excluded, they were suffering from system disease.

Data Collection: A total of 400 participants were included in the study, which consisted of 200 pregnant (group 1) and 200 non pregnant (group) women. The study was carried out using a standardized Performa. The Performa consisted of follwing 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 to 20 minutes to complete the self-administered questionnaire.

Clinical Examination

The examination was done by a single calibrated examiner. Twenty five sets of autoclaved instruments 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) with Loss of Attachment using WHO criteria.[9]

Statistic analysis and results: 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 400 women participated in this study out of which 200(50%) were pregnant and 200(50%) were non-pregnant women. Out of 200 pregnant women, 44 (22%), 61 (30.5%), 95 (47.5%) were in first, second and third trimester of pregnancy respectively. (Table 2)

First Trimester	44	22.0%	
Second Trimester	61	30.5%	
Third Trimester	95	47.2%	

Table 2: Group 1 distribution on the bases of Trimester

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 ($p< 0.0001$).

	Group 1	Group 2	P value
Mean	3.05	2.47	<0.0001
SD	1.48	1.26	
SEM	0.10	0.09	
N	200	200	

Table 3: DMFT showing significantly higher in group 1 compared to group 2.

In the present study, out of 300 pregnant women 18 (9%) had code 0, 68 (34%) had code 1, 98(49%) had code 2, 16(4.7%) had code 3 and none of them had code 4. Out of 300 non-pregnant women, 38 (14%) had code 0, 71 (40.5%) had code 1, 91 (45.5%) code 2, none of them had code 3 and code 4. None of them 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).

CPI	Pregnant (n)	Percentage (%)	Non-pregnant (n)	Percentage (%)	
0	Healthy	18	9	38	14
1	Bleeding	68	34	71	40.5
2	Calculus	98	49	91	45.5
3	Pocket 4mm to 5mm	16	8	0	0
4	Pocket 6 mm or more	0	0	0	0
Total	200	100	200	100	

Table 4: Distribution of the study groups according to their CPI (Community Periodontal Index)

The most self reported oral health status affecting pregnant women that is most common like bleeding from gums, swollen gums, sensitivity teeth , pain and food lodgment. In our study, we include these criteria and found prevalence accordingly

Symptoms	Self reported oral health status	Prevalence	
		Pregnant	Non-pregnant
Bleeding gums	Present	121	39
	Absent	79	161
Burning gums	Present	101	9
	Absent	99	191
Swollen gums	Present	153	55
	Absent	47	145
Loose teeth	Present	51	9
	Absent	149	191
Decayed teeth	Present	39	49
	Absent	161	151
Tooth pain	Present	105	41
	Absent	95	159
Food lodgment	Present	165	71
	Absent	35	129
Sensitive teeth	Present	140	109
	Absent	60	91
Problems performing day to day activities	Present	121	97
	Absent	79	103
Disturbed sleep	Present	159	43
	Absent	41	157

Table 5: Self reported oral health in relation to OHRQOL pregnant and non-pregnant women

On the bases 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 <0.0017. (Table 6)

	Symptoms present		Symptoms absent		P value
	Pregnant (Group 1)	Non-Pregnant (Group 2)	Pregnant (Group 1)	Non-Pregnant (Group 2)	<0.0017
Mean	115.50	52.20	84.50	147.80	
SD	43.13	32.87	43.13	32.82	
SEM	13.64	10.39	13.64	10.39	
No. of symptoms	10	10	10	10	

Table: 6 Showed significant difference between group 1 and group 2

Discussion:

Measurement of the impact of oral conditions on quality of life should be part of the evaluation of oral health needs because clinical indicators alone cannot describe the satisfaction or 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

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changes due to oral problems. High levels of oral diseases may also have an impact on the oral-health-related quality of as well. Establishing a healthy oral environment is the most important objective planning the dental care of pregnant patient.

The present study showed means DMFT which was higher in pregnant women (1.01) compared to non-pregnant (0.82) ($p< 0.001$). The decayed component was higher among pregnant women (1.77) compared to non-pregnant women(1.35);the missing component was higher among pregnant (0.76) compared to non-pregnant women (0.71); the filled component was higher among pregnant women(0.5) compared to non-pregnant women(0.4) 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 et al 20105 and Montero J et al 20119

In this study pregnant and non-pregnant women had more of code 2 and code 1 respectively 37.25% and 47.25% in total sample size but on the bases of group, Group 1 (Pregnant) has code 2 was higher followed by code 1,0,3 and 4 (34%, 9%, 8% and 0%) and in Group 2 (Non-pregnant) has code 2 was 45.5% followed by 1,0,3 and 4 code value such as 40.5%, 14%, 0% and 0% respectively foll but around 14(4.7) had code 4 in pregnant women where none had code 4 in non-pregnant women. Our study results resembled with previous study that was conducted by Sourabha K.G. et al 201412 The present study had only 16(8%) pregnant women having code of 3 which is lower compared to a study where 86((33.2) Acharya S et al 2009 IJDH13 of the study population had periodontal pockets (pocket depth ≥4 mm). In the present study 10 self-perceived questions regarding bleeding gums, burning gums, swollen gums, loose teeth, decayed teeth, tooth pain, food lodgement, sensitive teeth, difficulty performing day to day activities and disturbed sleep due to pain were administered. 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 not resembles to previous study (Sourabha K.G. et al 201412). In our study showed chewing discomfort due to food lodgment 82.5% and pain was 52.5% means discomfort chewing higher comparatively pain, it is resemble to Yiengprugsawan et al 201114 in this study showed that discomfort chewing 15.8%, discomforts with social interaction 12.5% and pain 10.6% were the mostly reported. The adverse consequences of oral diseases on daily life including psychological dimension: feeling embarrassed in social settings, especially females.

Conclusion: Pregnancy should not be considered as an absolute reason to defer required dental care. Oral care during pregnancy is very important and involves the contribution of the patient herself, dental professionals and physicians. Pregnant patients 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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