

A study on awareness and attitude towards maintenance of oral health and hygiene in women of reproductive age group of Rewa (M.P.)

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Abstract

Aim: To assess the oral health knowledge, oral hygiene habits, attitude towards maintenance of oral health, and the periodontal health status of women of reproductive age group (15 to 45 years) in Rewa. **Materials and methods:** The awareness and attitude of 80 pregnant and 80 non-pregnant women reporting to the outpatient department of Government hospital of Medical College in Rewa over a period of 1 month (May 2015) towards maintenance of oral health was assessed with a close ended questionnaire. The periodontal health of women was evaluated by Community Periodontal Index (CPI). **Results:** There was a significant difference in the periodontal status (mean CPI score) among both groups of women ($p < 0.05$). **Conclusion:** The awareness among women towards oral health related issues is poor. There is lack of awareness about safe medical and dental care practices during pregnancy. Community Periodontal Index (CPI) tended to be higher in pregnant than in non-pregnant women, suggesting a poorer oral health status in pregnancy.

Key words: Awareness, Pregnant Women, Periodontal Health

Introduction

The increase in the prevalence of periodontal diseases, and the resulting pain, infection, and impaired masticatory functions poses a detrimental burden on populations in developing countries [1]. This occurs due to lack of oral health awareness at individual level and absence of adequate preventive programs at community level [2].

Prevalence of periodontal disease depends on multiple variables like age, sex, race, ethnicity, education, geographic and environmental status, oral hygiene habits, living patterns, social characteristics and dental awareness [3]. Conditions such as puberty, pregnancy and menopause have a significant effect on the oral health of women [4]. Studies have confirmed pregnant women have a higher incidence of gingivitis compared

with their non-pregnant counterparts [5,6]. Physiological changes induced during pregnancy may alter the inflammatory response and exaggerate the gingival inflammation. Increased gingival inflammation is reported to occur between the second and eight months of gestation [7]. The prevalence of gingivitis in pregnancy varies between 36% to 100% [8,9].

The aim of the current study was to assess the knowledge, practices and periodontal health status of pregnant and non pregnant women population in Rewa. The data will serve as baseline data for formulating strategies for periodontal health prevention and treatment in the region.

Materials and Methods

The study sample consisted of randomly selected 80 females with preliminary pregnancy test confirmation (Group A) who attended the Antenatal Care outpatient department of Hospital associated with Medical College Rewa, Madhya Pradesh and equal number of female

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patients who attended the Obstetrics & Gynecology Department OPD for some other reason (Group B). Written consent was taken from every participant of the study and they were assured about the confidentiality being maintained.

Sampling method: All the subjects were selected randomly using random sampling techniques. **Inclusion Criteria:** Women in the reproductive age group (15-45 years) with preliminary pregnancy test confirmation for group A and non pregnant women of the same age group for group B. **Exclusion Criteria:** Those who were experiencing labor pain, or having serious systemic illness, along with those who were uncooperative or unwilling to give consent were excluded.

Both the groups were evaluated for sociodemographic data, awareness and practices related to maintenance of oral health, physiological changes in oral health during pregnancy, general precautions to be taken during pregnancy viz. investigations/procedures to be avoided, safe time for undergoing dental procedures, by direct interviewing of the subjects through a close ended questionnaire. As this health centre caters a large rural population, questions were explained to them in

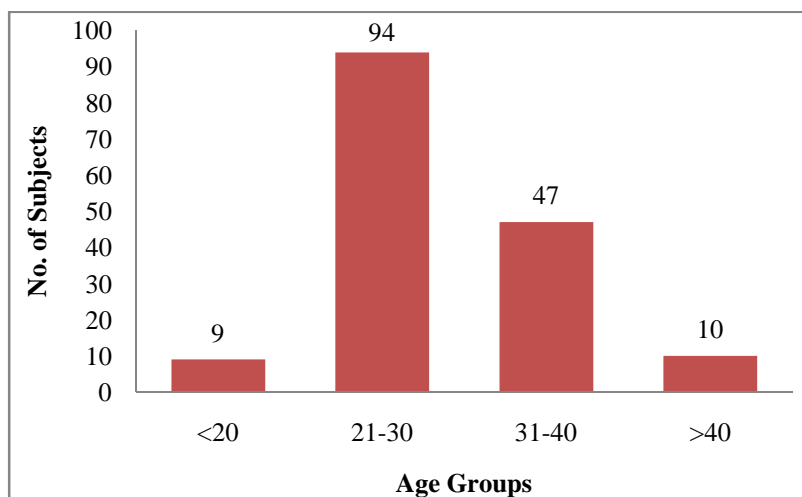
hindi/regional language. Modified Kuppaswamy scale was used for evaluating the socioeconomic class of the subjects [10].

Both the groups were clinically examined using Community Periodontal Index for periodontal diseases. Clinical examination was based on the WHO criteria[11] for periodontal assessment using the CPI probe, which is a specifically designed periodontal probe, with a 0.5 mm ball tip and black band between 3.5 and 5.5 mm and rings at 8.5 and 11.5 mm from the ball tip. According to WHO protocol, the dentition is divided into 6 sextants defined by tooth numbers: 18-14, 13-23, 24-28, 38-34, 33-43, and 44-48. The results were coded as following: Code 0- Healthy periodontium, 1- Bleeding on gentle probing, 2- Calculus deposition, 3- Pocket 4-5 mm (black band on the probe partially visible), Code 4- Pocket 6mm or more (black band on probe not visible), Code X- Excluded (less than two teeth present).

Data were cleaned, compiled and results were tabulated and statistically analysed. Chi Square test was applied for calculating p values.

Results

Graph 1: Distribution of subjects according to age (N=160).



The majority of the subjects (58.75%) were in the age group of 21-30 years followed by 29.37 % that were of age group 31-40years (**Graph 1**).

Table 1: Distribution of subjects according to education (N=160).

Education	N	%
Professional or honours	3	1.87
Graduate or Postgraduate	28	17.5
Intermediate	20	12.5
High school	22	13.75
Middle school	15	9.37
Primary	17	18.12
Illiterate	55	34.37

66.87% of the subjects belonged to the rural area while the urban residents comprised 33.13% of the study population. A considerable percentage of subjects (34.37%) were illiterate (**Table 1**).

Table 2: Distribution of subjects according to socioeconomic status (N=160)

Socioeconomic status	n	%
Upper	7	4.37
Upper middle	13	8.12
Lower middle	38	23.75
Upper lower	37	23.12
Lower	65	40.62

Maximum no. of subjects (63.74%) belonged to lower socioeconomic status followed by 31.87 % that belong to middle income group. (**Table 2**)

Table 3: Response of subjects to questions on knowledge about periodontal diseases and health in pregnancy

Questions (N=160)	Yes (%)	No (%)
Aware that regular brushing can prevent gum disease	111(69.37%)	49(30.62%)
Bleeding may be one of the sign of gum disease	95(59.37%)	65(40.62%)
Aware that gum diseases are more common during pregnancy	26(16.25%)	134(83.75%)
Do bleeding gums refrains from brushing	100(62.5%)	60(37.5%)
Aware that dental treatment during pregnancy could be risky	29(18.12%)	131(81.87%)
Aware that second trimester is safest period for dental treatment during pregnancy	0(0%)	160(100%)
Aware that radiation exposures (even for dental x ray) are dangerous for pregnancy	39(24.37%)	121(75.62%)
Aware that they should not do any self medication as certain drugs might harm their baby/fetus	41(25.62%)	119(74.37%)
Have ever done self medication when needed during pregnancy	31(19.37%)	129(80.62%)

About two third of subjects (69.37%) were aware about the importance of tooth brushing in preventing oral diseases and more than half of the study population (59.37%) recognized that bleeding from gums is an indicator of existing gum disease. Less than a 25% of population was aware that dental procedures and radiographs during pregnancy could be risky (**Table.3**).

Table 4: Comparison of oral hygiene practices in both groups

GROUP N=80	Method of cleaning			Cleaning aid used			Frequency of cleaning	
	Using Tooth Brush	Using Finger	Using Chewing Stick	Tooth Paste	Tooth Powder	Others	Once daily	Twice daily
Pregnant	55	13	12	47	15	18	67	13
Non pregnant	53	17	10	51	13	16	62	18
p value	0.687			0.809			0.424	

The most common method for cleaning teeth was utilizing a toothbrush (68.75%) and the most common aid used was toothpaste (61.25%), although the difference between both groups regarding the oral health practices was statistically not significant (**Table 4**).

Table 5: Comparison of oral health problems in both groups

Oral health Problem N=80	Group A (Pregnant)		Group B (Non Pregnant)		P value
	n	%	n	%	
Experiencing oral health problems	60	75%	41	51.25%	0.003
Experience Gingival bleeding	53	66.25%	38	47.5%	0.025
Experience recurrent apthous ulcers	6	7.5%	4	5%	0.744
Experience dysguesia	4	5%	2	2.5%	0.677
Experience tooth mobility	5	6.25%	3	3.75%	0.717
Experience tooth sensitivity	9	11.25%	6	7.5%	0.588
Xerostomia	4	5%	1	1.25%	0.363

Among group A (pregnant women) 75% of the subjects reported some or other health problem, while in group B (non-pregnant women) percentage was quite lower (51.25%). Among the oral health problems reported, gingival bleeding was the most commonly reported complaint (**Table 5**).

Table 6: Comparison of Community Periodontal Disease (CPI) in both groups

GROUP	Healthy Periodontium (Score 0)		Bleeding on probing (Score 1)		Calculus Score 2		Pocket depth 4-5 mm. (Score 3)		Pocket depth 6mm or more (Score 4)	
	n	%	n	%	n	%	n	%	n	%
Pregnant N = 80	5	6.25%	45	56.25%	20	25%	6	7.5%	4	5%
Non pregnant N =80	18	22.5%	40	50%	16	20%	4	5%	2	2.5%
Total N =160	23	14.37%	95	59.37%	36	22.5%	10	6.25%	6	3.75%

Table 7: Statistical comparison of the periodontal status of both groups

Group	Mean	S.D	P value
Pregnant	1.48	0.908	0.0202 statistically significant
Non pregnant	1.15	0.909	

Discussion

Increased levels of oestrogen and progesterone during pregnancy are responsible for increased vascular permeability and tissue oedema, which causes increased incidence of gingivitis and periodontitis among pregnant women. [12].

Gingival vasculature shows the most prominent changes. Peculiar signs of pregnancy gingivitis are dark red, swollen, smooth gingiva, which bleeds easily. Sometimes pregnancy gingivitis may result in localized gingival enlargements.

Gingival changes during pregnancy are often self limiting and usually resolve after couple of weeks if local irritants are eliminated. The association between periodontitis and some of the problems with pregnancy such as premature delivery, low weight at birth, and preeclampsia (PE) has also been suggested [13]. In women with periodontitis, the infected periodontal tissues could be a source of infection to the growing fetus. An increase in salivary progesterone concentration from the first to the second trimester of pregnancy has been linked to increased levels of *P. gingivalis* [14]. In patients with severe periodontitis, infectious agents and their products can activate inflammatory signaling pathways both locally and extra-orally, including the placental-fetal unit, which can lead to preterm labour, preeclampsia, and intrauterine growth retardation.

In the present study 68.75% of pregnant subjects used tooth brush and our findings are less than that reported by Satija G et al.[15] in Faridabad (78.5%) and Ganesh et al. [16] in Chennai (93.3%). The frequency of cleaning on daily basis was found to be once daily in 83.75% of subjects and twice daily in 16.25% of pregnant subjects which was better than the study conducted by Satija G et al.[15] in Faridabad (98.5 % once daily and only 1.5 % twice daily) but very poor in comparison to the study conducted by Christensen et al.[17] in Denmark who reported 96% frequency of brushing twice daily in his subjects, suggesting pregnant females in other countries are more aware of need of twice daily brushing.

In the present study, 75% the subjects reported oral problems during pregnancy, which was higher in comparison to the study by Thomas et al. [18] in Australia (65%). This difference in the incidence of oral problems during pregnancy probably could be due to

meticulous oral hygiene maintenance as well as advanced and efficient oral health care delivery system in western countries. The percentage of non pregnant women who experienced any sort of oral problems was 51.25%. The difference between both groups regarding oral health problems was statistically significant (p value 0.003).

Gingival bleeding was reported by 66.25 % and 47.5% women in Group A and Group B respectively, the difference was found to be statistically significant(p value 0.025)

The poor status of periodontal health in pregnant women in comparison to non pregnant women was reflected by a high mean CPI score for pregnant women (1.48 ± 0.908) in comparison to non pregnant women (1.15 ± 0.909). The P value 0.0202 was statistically significant. This was similar to the pattern reported by numerous studies on pregnant women who reported gingivitis with increased probing depths.[19,20] This suggests that altered hormones during the pregnancy aggravate the local tissue response independent of local irritants like plaque and calculus.

The less knowledge and poor periodontal health status of both groups can also be attributed to low literacy along with socio economic status, low level of literacy and oral habits. Since majority of the subjects belonged to the rural area (66.87%) the low level of awareness about oral health and the poor periodontal status can be attributed to the fact that rural populations continue to experience marked disparities in health and health care access. Oral health and disease essentially a multifactorial process, hence, it might be difficult to arrive at a conclusion whether the pregnancy alone causes the deterioration in oral health.

Conclusion

Periodontal health status among women depends on numerous factors. Education and socioeconomic condition have an important role, especially in developing countries. Pregnancy worsens the existing poor oral hygiene among women, and then it triggers a vicious cycle which can lead to serious complications during pregnancy. Routine dental check up should be the integral part of Ante natal visits and women should be counseled and motivated for maintaining good oral hygiene. Elective and cosmetic procedure can be postponed till delivery and emergency cases should be dealt with utmost care in consultation with an obstetrician.

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