

Oral Hygiene Knowledge and Practices among Antenatal Women of Community Health Centre, Badkhalsa, Sonipat District, Haryana

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ABSTRACT

Aim: The aim of the study was to assess the knowledge and practice of oral hygiene among antenatal women of Community Health Centre (CHC), Badkhalsa, Sonipat district, Haryana.

Methodology: A cross-sectional survey was conducted among the antenatal women of CHC, Badkhalsa, Sonipat district, Haryana. Convenience sampling technique was used for selection of subjects. Subjects were chosen on antenatal day [4 days/week and Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) day]. Permission for data collection was sought from superior authority of CHC as well. Data were congregated by a combination of General Oral Examination and Self-Administered Questionnaire. The questions were based on knowledge and practices related to pregnancy and oral health, gingival conditions, oral hygiene, utilization of dental health services, and habits. The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 21. Association between categorical variables was assessed using Chi-square test. Level of significance was set as $p < 0.05$.

Results: Key results of the present study stated that respondents had knowledge and awareness regarding maintenance of oral health, but they were not able to maintain it because of many barriers.

Conclusion: Although most of the changes occurring during pregnancy are temporary in nature but do require proper personal and professional care. Therefore, there is the need to encourage women to seek oral screening, counseling on maintaining appropriate oral hygiene during pregnancy.

Keywords: Antenatal women, Knowledge, Oral hygiene.

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INTRODUCTION

Oral health is related to general health and quality of life. Good oral health can be achieved by maintaining good oral hygiene by maintaining techniques to prevent dental diseases.¹ Dental diseases are the major public health problems throughout the world with the high prevalence due to altered lifestyle and eating habits.² The burden of oral diseases are high for vulnerable population like pregnant females.³ Antenatal means relating to medical care of woman when they are expecting baby.⁴ World over, obstetricians and gynecologists have recognized that oral health is an integral part of preventive health care for pregnant women and their fetus. Literature hypothesized the relationship between "increased plasma levels of pregnancy hormones and a decline in periodontal health."⁵ During pregnancy, a woman's oral health can affect her health and the health of her unborn child.⁶

In the national database of 2002–2003, around 1,52,000 deliveries were taken place (intramural), out of which 14.5% were preterm, and out of total live births, 31.3% were low-birth-weight infants. Extreme prematurity was primary cause of neonatal deaths. Among the extramural live births, 52.1% of infants were of low birth weight and 31.5% were preterm.

The dental management of pregnant patients involves special considerations in achieving optimal oral health.⁷ Oral health promotion, disease prevention, early detection, and timely intervention are crucial aspects for maternal and child oral health.⁸ During pregnancy, undesirable events such as preterm low birth weight (PLBW) occur. There is growing evidence that periodontitis may be a risk factor for preterm birth.⁹

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Gingival diseases in pregnancy represent an endocrine-like source of potentially deleterious cytokines and lipid mediators, which increases the likelihood of adverse pregnancy outcomes. Increased hormone level during pregnancy intensifies the dental problem in pregnancy; therefore, maintaining dental hygiene becomes extremely essential during pregnancy.¹⁰ Changes in hormone levels during pregnancy promote an inflammation termed pregnancy gingivitis, which may pose a significant inflammatory exposure and it can lead to preterm delivery of low-birth-weight babies.¹¹ The University of North Carolina found that pregnant women with periodontal diseases are seven times more likely to deliver a premature, low-birth-weight baby.¹²

In the case of periodontitis, due to increased bacteremia, premature rupture of placental membrane causes premature birth.¹³ Higher level of plaque in women with PLBW babies is compared to normal birth weight (NBW) controls; therefore, it is logically reasonable to say that periodontal infection contributes to adverse pregnancy outcomes in the form of premature delivery.⁹ Women in India still lack the knowledge of how to maintain their oral health and there is a paucity of literature documenting the effect of knowledge and practices of oral hygiene maintenance and its association with oral health among antenatal females. Thus, the present study was initiated with the aim to assess the knowledge and practice of oral hygiene among antenatal women of Community Health Centre (CHC), Badkhalsa, Sonipat district, Haryana.

METHODOLOGY

The present study was a cross-sectional survey conducted among the antenatal women of CHC, Badkhalsa, Sonipat district, Haryana. Ethical clearance was obtained from the institutional ethical committee. Informed consent was obtained from the study participants before recruiting them in the study. Convenience sampling technique was used for the selection of subjects. Subjects were chosen on antenatal day [4 days/week and Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) day]. Permission for data collection was sought from superior authority of CHC as well.

The subjects were selected from CHC over a period of 9 months. The demographic data including income status, occupation, religion, utilization of oral health services, and oral hygiene practices were recorded from each of the pregnant women. Based on the anticipated prevalence of periodontitis (89.2% as obtained from National Fluoride Mapping Survey 2002), with 89.2% prevalence of periodontitis, 5% permissible error, and 95% confidence interval, minimum sample size was estimated to be 150. However, as per the availability, 175 subjects were included.

Data Collection

Data were congregated by a combination of General Oral Examination and Self-Administered Questionnaire. It was recorded on a proforma specially designed for this study for evaluating the knowledge and practices of the pregnant females. A close-ended Hindi questionnaire containing 24 questions was used. The questions were based on knowledge and practices related to pregnancy and oral health, gingival conditions, oral hygiene, utilization of dental health services, and habits. The questionnaire was pilot-tested among fifteen individuals and assessed for validity. Cronbach's alpha value for knowledge and practice was 0.79 and 0.71, respectively. The questionnaire was distributed to pregnant women and asked to complete it in front of the investigator. For those who were illiterate, the questionnaire was explained and answers were elicited. Confidentiality and privacy of each study subject ensured. Participation in the study was voluntary. Treatment of the respondents was not affected during the process of data collection. During interview, health talk was given to them and needed respondents were referred to Primary Health Care (PHC)/CHC for treatment accordingly.

Statistical Analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 21. Each positive response to knowledge and practices was scored as 1 or subsequent number and negative response as zero. Association between categorical variables was assessed using Chi-square test. Level of significance was set as $p < 0.05$.

RESULTS

There were a total of 175 respondents participated in the study. Majority of the respondents (57.1%) were in the age-group of 20–24 years and 38% of the respondents were below poverty line (BPL). Majority of the respondents (27%) had education till high school.

Out of 175 respondents, 64% knew what dental caries are, 39.4% had the knowledge about bleeding gums in pregnancy, and 68% knew the importance of dental checkup during pregnancy. A very few proportions of subjects, i.e., 39.14%, had knowledge regarding the importance of changing toothbrush every 3 months after use. Approximately more than half of the study population had knowledge regarding the importance of maintenance of oral health in pregnancy. Only one-fourth of the study respondents had an idea regarding the enlargement of gums during pregnancy. And, majority were unaware of the best method for cleaning teeth (Table 1).

Majority of the study respondents had the habit of brushing (98.9%) and were using toothpaste (79.4%), out of which 54% had the habit of brushing only once daily. Only 4% used to visit their dentist on regular basis. About 40% of them did not choose the best method to clean because they thought it would not make any difference to their oral health and 89.7 of them had the habit of mouth rinsing after meal (Table 2). Figure 1 reveals that prevalence of periodontitis was found to be 69% among respondents. Education was significantly associated with knowledge regarding how many times teeth should be cleaned as $p < 0.05$ (Table 3). A significantly more number of respondents (64.3%) with third pregnancy reported bleeding from gums (Table 4).

DISCUSSION

Good oral health and controlling oral diseases protect a woman's health and quality of life before and during pregnancy, and, this

Table 1: Distribution of study population according to the knowledge of respondents

<i>Knowledge of respondents</i>	<i>N</i>	<i>%</i>
Knowledge about dental caries	112	64
Knowledge about bleeding gums	69	39.42
Knowledge of importance of dental checkup	119	68
Changing toothbrush every 3 months	65	39.14
Importance of oral health	109	62.3
Enlargement of gums during pregnancy	50	28.6
Best method of teeth cleaning (don't know)	136	77.7

Table 2: Distribution of study population according to oral hygiene practices of respondents

<i>Oral hygiene practices of respondents</i>	<i>N</i>	<i>%</i>
Regular dental checkup	7	4
Last went to dentist (6 months to 1 year)	12	6.9
Brushing habit	173	98.9
Brushing once daily	94	54.0
Use of toothpaste	139	79.4
Method of cleaning would not make any difference to oral health	71	40.6
No need	137	78.3
Habit of rinsing mouth	157	89.7

has the potential to reduce the transmission of pathogenic bacteria from the mother to children. The present study observed a lack of knowledge of oral health care among pregnant women.

In general, the factors affecting the oral health status of an individual can be categorized in two ways, at the individual level and at the system level. Individual-level characteristics include an individual's demographic and socioeconomic constraints (income, education, occupation, gender, etc.) and other related characteristics such as racial/ethnic group, health beliefs, values, attitudes, knowledge, and oral health behaviors (personal oral hygiene, use of fluoride, diet behavior, utilization of dental services, etc.). System-level factors include societal and environmental characteristics and the organization and resources of the oral health system. People with higher socioeconomic status (SES) present with better health outcomes due to a number of factors. People from a professional background, for example, are more likely to attend dental checkups, brush their teeth twice a day, and use the best method for cleaning their teeth. They are less likely to have had teeth extracted and are less anxious about going to the dentist. People from lower socioeconomic backgrounds are less likely to be able to take time off work to go to a dentist than people from a professional background.⁴

Numerous evidence-based studies are available which found a positive co-relationship between periodontitis and adverse pregnancy outcomes. Offenbach et al.¹³ were the first to report data that suggested periodontal diseases could represent a previously

unrecognized and clinically significant risk factor for PLBW in humans. They suggested that maternal periodontal disease could lead to a sevenfold increased risk of delivery of a PLBW infant.

About 99% of the respondents said that they do brush their teeth, and 54% reported the frequency of brushing to be once daily. A massive proportion of respondents (84.6%) reported that despite experiencing bleeding from gums during pregnancy, they did not consult dentists probably because they were reluctant about it and thought they need not to visit dentists. Around 78.3% of respondents projected no need to visit a dentist during pregnancy. Significantly, more number of respondents (64.3%) with third pregnancy reported bleeding from gums and prevalence of periodontitis was found to be in 68% among antenatal women.

Majority of studied population feel that there is no need to visit a dentist. These findings are in agreement with the findings of the study among pregnant women in the USA. In the UK, 39% did not visit a dentist during pregnancy even though dental care is free of charge for pregnant women; reasons for not seeing a dentist were the feeling that it was not necessary, fear, or not liking the dentist.

In a study on 95 pregnant women of Darussalam, Bamaniker and Kee¹⁴ reported that although 96.8% of the respondents agreed that women should have a dental checkup during pregnancy, only 55.9% actually practiced this. This raises a serious concern since pregnant women may need extraoral and dental care due to susceptibility to gum diseases during pregnancy, which may contribute to low-birth-weight babies and premature births.¹⁵

The results of our study are in accordance with those of Avula et al.,¹⁶ who conducted a knowledge attitude and practices (KAP) assessment of oral health and adverse pregnancy outcomes among 359 pregnant women visiting three maternity care centers in Hyderabad, India; 87.2% of their respondents were not aware of the importance of oral hygiene and its probable association with adverse pregnancy outcomes. None of the respondents ever used dental floss and only a few (1.4%) had heard about it. Avula et al.¹⁶

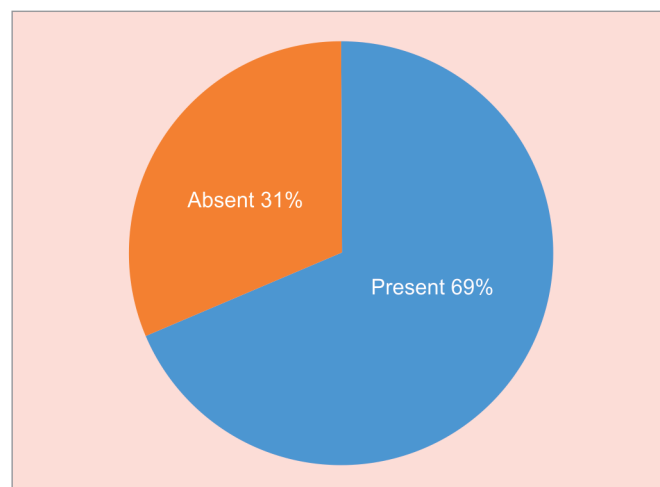


Fig. 1: Prevalence of periodontitis

Table 4: Association of bleeding gums with pregnancy grvida

Bleeding gums with pregnancy grvida	Yes		No		Don't know		Total	
	N	%	N	%	N	%	N	%
Once	29	39.2	42	56.8	3	4.1	74	100
Twice	31	35.6	56	64.4	0	0.0	87	100
Thrice	9	64.3	3	21.4	2	14.3	14	100
Total	69	39.4	101	57.7	5	2.9	175	100

p value 0.004 significant

Table 3: Association of education with knowledge regarding how many times teeth be clean

Education level	After every meal		Once daily		Twice daily		Teeth should not be brushed		Once/twice daily		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Illiterate	1	2.9	4	11.8	29	85.3	0	0	0	0	34	100
Primary	1	16.7	0	0.0	5	83.3	0	0	0	0	6	100
Middle	4	9.3	2	4.7	37	86	0	0	0	0	43	100
High school	6	12.8	0	0.0	31	66	4	8.5	6	12.8	47	100
Intermediate	4	15.4	0	0.0	21	80.8	1	3.8	0	0	46	100
Graduate	2	13.3	1	6.7	12	80.0	0	0	0	0	15	100
Postgraduate	0	0.0	0	0.0	4	100	0	0	0	0	4	100
Total	18	10.3	7	4.0	139	70.4	5	2.9	6	3.4	175	100

p value 0.030 significant

identified poor knowledge regarding displayed a reasonable level of oral health knowledge and positive attitude to oral health; it was not reflected in their oral hygiene practices.

Contrary to the results of the present study, Pentapati et al.¹⁷ in their study found that approximately 67% of the subjects had good knowledge and awareness regarding oral health. It was very surprising to note that none of the subjects were aware or bothered about their oral condition in the study reports of Reddy et al.¹⁵

Study findings of Amit et al.¹⁸ revealed that more than 80% of subjects felt the necessity of dental visits during pregnancy. This finding was significantly related to the educational level of the study subjects ($p = 0.032$). However, during the previous 12 months, only 11.8% of women surveyed had attended the dentist in the same study. Very few subjects (17.1 and 37.5%) in the other two studies felt the need for regular dental visits during pregnancy.

As the result of the present study showed that more than 90% of the subjects had the habit of brushing and 1% of the respondents were using finger to clean teeth. On the contrary, 3.5% of the subjects were using finger to clean their teeth in the study findings of Amit et al.¹⁸ However, educational status did not have any impact on the oral hygiene practices of the subjects in both the studies ($p > 0.05$). Thus, it can be perceived that there is a serious concern about the dental care-seeking behavior and knowledge of pregnant women in the present study. One of the limitations of the study was the convenience sampling technique, and hence, generalizability of the present study results should be done with caution.

CONCLUSION

Although most of the changes occurring during pregnancy are temporary in nature but do require proper personal and professional care. Therefore, there is the need to encourage women to seek oral screening, counseling on maintaining appropriate oral hygiene during pregnancy. Ideally, women should begin their pregnancy without gingival and periodontal infection, and they should be educated and motivated to maintain a high level of oral hygiene prior to and throughout pregnancy. Therefore, researchers and health program planners should give increased attention to the oral health needs and behavior of pregnant women.

In the future, dental education programs should be conducted to motivate pregnant patients about their oral health as well as for better pregnancy outcomes. In addition, nutritional educational programs for women who plan pregnancy should be conducted by medical and health centers and should mainly involve women from rural areas.

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