Oral Periodontal Health Knowledge and Awareness among Pregnant Females in Bangalore, India.

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ABSTRACT

There is plenty of evidence in the literature suggesting an association between periodontal diseases, pregnancy and even preterm low birth weight deliveries. The correlation has been expanded from periodontitis and preterm birth to various forms of periodontal infections and adverse pregnancy outcome, preterm birth, low birth weight, stillbirth, miscarriage, intrauterine growth retardation and pre-eclampsia. **Aims and Objective:** The purpose of this study was to assess the awareness regarding periodontal health among pregnant females in Bangalore, India. **Materials and Method:** Three hundred pregnant female patients who visited the OPD of Gynaecology Department of Government Hospital, K.R. Puram, Bangalore was evaluated for oral hygiene status. Awareness of the relationship between oral health and pregnancy, demographics, oral health knowledge, oral hygiene, and dental visits during pregnancy and their willingness for treatment was surveyed by self administered questionnaire from the patients who were willing to participate in the study. The data were collected, summarized and statistically analyzed. **Results**: Awareness among pregnant women was found to be statistically non significant (p value > 0.05) irrespective of the age and educational qualifications (p value> 0.05). **Conclusion:** Knowledge and awareness regarding periodontal disease, and its effect on the pregnancy and birth outcome are limited.

KEYWORDS: Pregnancy, Awareness, Periodontal Health

INTRODUCTION

Women's life cycle changes presents unique challenges to the oral health care profession. Hormonal influences associated with the reproductive process alter periodontal and oral tissue responses to local factors creating diagnostic and therapeutic dilemmas. It is imperative, therefore, that clinician recognize, customize and vary periodontal therapy, according to an individual female and the stage of her life cycle.¹

Besides systemic diseases, certain conditions may have an effect on gingival status and may aggravate preexisting disease, especially in persons with poor oral hygiene. Pregnancy being one of these conditions, is a time when the patient may experience the most profound physiologic and psychological changes in her life. There is plenty of evidence in the literature suggesting an association between periodontal diseases, pregnancy and even preterm low birth weight deliveries. The link between periodontal infections and preterm birth has been one of the frontiers in dental research. The correlation has been expanded from periodontitis and preterm birth to various forms of periodontal infections and adverse pregnancy outcome, preterm birth, low birth weight, stillbirth, miscarriage, intrauterine growth retardation and pre-eclampsia.^{2,3,4}

Pregnancy provides an ideal opportunity to improve women's health practices. Prenatal care entails regular and frequent medical visits, so that women are or can be motivated to improve their health for the benefit of the developing fetus. Since maternal oral flora and oral hygiene practices are predictors of the oral flora and oral health of infants and children, a pregnant woman's knowledge and actions concerning her oral health are critical to the oral health of her child or children and may be a key to childhood caries prevention.Maternal oral diseases such as gingivitis, caries and periodontal infection affect a woman's oral health and the oral health of her child or children. Targeting pregnant women to increase their oral health knowledge may improve their oral health and, thus, the oral health of their children. Maternal oral flora and oral health are one of the greatest predictors of childhood oral flora and oral health.^{1,2}

The interaction between oral and systemic health has long

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been of interest. It has been shown that pregnant women have a higher incidence of gingival inflammation compared to non-pregnant women^{2,3,4}The incidence of gingival inflammation in pregnant women has been reported to range from 36% to 100%.^{3,5} Hormonal and vascular changes associated with pregnancy can exaggerate the response of the gingiva to bacterial plaque.^{6,7}

Good oral hygiene practices, however, can minimize gingival disease during pregnancy.^{2,7}Two case–control studies ^{8,9} and cohort studies ^{10,11,12}showed that periodontal disease could be an independent risk factor for pre-term birth and low birthweight after adjusting for several known risk factors. ²In fact, treatment of periodontal disease has been shown to reduce pre-term birth. ^{12,13}Other studies have shown additional associations between periodontal disease and pregnancy, such as increased risk for development of preeclampsia during pregnancy.¹⁴

The purpose of the present study was to assess the awareness regarding periodontal health among pregnant females in Bangalore. The results obtained would serve as baseline information for planning an oral health education program aimed at improving the oral health of pregnant women receiving care in the hospital. Specifically, it would identify areas of deficiency in the women's knowledge and this would be helpful in formulating the content of the oral health messages.

MATERIALS AND METHOD

The present cross sectional study was conducted in the Gynaecology Department of Government Hospital, K.R. Puram, Bangalore during June to August 2011. The minimum sample size was computed using the formula $n = z^2 pq/d^2$ where p (the prevalence of women with good knowledge) was set at40%. Thus the computed minimum sample size was 271 subjects. This was increased by 10% to 300subjects to accommodate attrition. Hence, three hundred pregnant females who visited the OPD of Gynaecology Department of Government Hospital, K.R. Puram, Bangalore were taken in study design using simple random sampling. The subjects were informed about the purpose of the study and only those who gave written voluntary consent were taken into the study. Also, ethical approval was obtained from the institutional review board and permission from the head of Government Hospital was also obtained.

The questionnaire was developed and pre-tested on 25 pregnant women to allow for refinement of the questions in order to facilitate answering (Table 1). Questionnaires were administered to all consenting pregnant women who attended the antenatal clinic during the study period. The questionnaire comprised of two sections. The first section contained questions on the respondent's sociodemographic characteristics such as age, occupation, monthly income and educational status. The second section comprised of fifteen questions pertaining to awareness of relationship between oral health and pregnancy, oral health knowledge, oral hygiene, dental visits during pregnancy, advice about dental health requirements during pregnancy, history of bleeding gums and what, if any, actions were sought to treat perceived gingival problems and their willingness for treatment.

Each question answered "Yes" was given a score of 1 while for "No", score 0 was given. Thus, the maximum achievable score was 15 with a higher score indicating a high level of awareness. Individuals with scores of 11 and above were graded as having high awareness, those having scores from 6 to 10 were having average awareness while those with scores 5 or less were having low awareness. Awareness of periodontal health, according to age and educational qualifications of the pregnant females was also considered in the study.

The results obtained from the periodontal health awareness questionnaire were compiled and subjected to statistical analysis using SPSS version 19.0. Descriptive statistics were reported as well as cross-tabulations by age, parity, education and occupation. For the purpose of analysis the level of education was categorized as low (primary education only), middle (secondary education) and tertiary (post secondary education). Inference on the cross-tabulations were performed, using chi-square tests to test for general association. A probability value of <0.05 was taken as statistically significant.

RESULTS

Sociodemographic features of study participants

The mean age of our study population was 24.97 ± 4.343 years (range 18–35 years) with the majority of the study population in the 18-25 (59.3%) and 26-30 (33%) years old categories. Over half (53.7%) of the respondents were primigravida while the remaining women had between1 and 5 children. Out of the total study population, 2.3% had primary school education, 10.7% secondary school education, 33.3% attained post secondary education and 53.7% attended university (Table 2). Most of the study participants were unemployed (78.3%), followed by "employee" (21.7%) (Table 2). On the utilization of dental services, 285 (62.9%) respondents reported ever visiting a dental facility.

The mean of questions answered correct by the subject was 4.53 ± 1.814 with a range of 1 - 8. Majority, i.e. 60 percent subjects had low awareness and only 40 percent with average awareness and 0 percent with high awareness (Table 3). The results of awareness among pregnant women came out to be statistically non significant (p value > 0.05) irrespective of the age. The results of awareness among pregnant women came out to be statistically non significant (p value > 0.05) irrespective of the age. The results of awareness among pregnant women came out to be statistically non significant (p value > 0.05) irrespective of educational qualifications.

DISCUSSION

There is no gainsaying the fact that good oral health during pregnancy is important, especially in view of the recent suggestions that poor oral health may result in unfavourable pregnancy outcomes. This is important in

PERIODONTAL HEALTH AWARENESS					
	QUESTIONNAIRE				
Name:					
Age:					
Address:					
Occupatio	n:				
Education					
Monthly in	ncome:				
Habits if a	ny:				
Jestationa	ll age:				
arity:	ana Statua Cood Fair Boor				
	Do you brush your teeth?	Vac	No		
2)	If no, then do you use any other oral hygiana method	$V_{\rm ec}$	No		
2) 3)	Do you brush your teeth after every meal?	Vec	No		
4)	Do you use interdental cleaning aids?	Vec	No		
	Do you think that extra care of oral hygiene	is needed	during		
5)	pregnancy?	is needed	uuring		
	programey.	Yes	No		
6)	Have you heard about the possible correlation betwee	en oral he	alth and		
- /	pregnancy?				
	1 6 9	Yes	No		
7)	Do you know that Cavities (tooth decay) and gum of	lisease are	caused		
	by infection in the mouth?				
		Yes	No		
8)	Do you think that gum disease could have a relation	on with pr	emature		
	labor and low birth weight babies?				
		Yes	No		
9)	Have you ever suffered from premature labor or	low birth	weight		
	babies in the past?	Yes	No		
10)					
10)	Have you ever visited a dentist during or before your	pregnancy	?		
		Yes	No		
11)	Do you know that Programmy makes your gums his	ad avall	baaama		
11)	rod?	eu, swen,	become		
	icu:	Vec	No		
12)	Do your gums bleed during tooth brushing	after cond	rention?		
12)	Do your guins bleed during tooth brushing a	Yes	No No		
		105	110		
13)	If you are diagnosed with periodontal disease (gum)	disease) no	ow, will		
- /	you undergo treatment for the same du	uring pre	gnancy?		
		Yes	No		
14)	If you are diagnosed with periodontal disease (gum	disease) no	ow, will		
	you undergo treatment for the same	after d	elivery?		
		Yes	No		
15)	Did your gynecologist recommended oral check up	before or	during		
	pregnancy?		Yes		
	No				
		S	ignature		

TABLE 1: Questionnaire used for the study

Socio Demographic	Frequency	Percentage
Characteristics	1 2	C C
Age		
18-25	178	59.3
26 - 30 years	101	33.7
31 years and above	21	7.0
Total	300	100.0
Level of education		
Primary	7	2.3
Secondary	32	10.7
Tertiary	100	33.3
University	161	53.7
Total	300	100.0
Parity		
Primigravida	161	53.7
1-5 children	139	46.3
Total	300	100.0
Occupation		
Unemployed	235	78.3
Employed	65	21.7
Total	300	100.0

 TABLE 2: Socio-demographic characteristics of study population

Periodontal health awareness	Percent	Valid Percent
Low awareness	60.0	60.0
Average awareness	40.0	40.0
High awareness	0	0
Total	100	100

 Table 3: Percentage awareness among study population

 regarding periodontal health

India because of the high maternal mortality rates. The commonest oral disease during pregnancy (I. e. Periodontal disease) is preventable by the institution of simple measures such as regular tooth-brushing and flossing. However such positive behaviour would be influenced by the individual's oral health knowledge and attitudes which in turn is influenced by the awareness of an individual. Thus, this study was designed to provide a view of periodontal awareness among pregnant females in Bangalore.

The present study showed low awareness (60%) among majority of the study population followed by average awareness among rest 40% of the participants. The results of the present study were similar to study conducted by HA Alwaeli SH Al-Jundi (2005)¹⁶who concluded that knowledge and awareness for pregnant women about their teeth and gingival condition is generally poor. Pregnant women need accurate information about their teeth and oral health. Simple educational preventive programmes on oral self-care and disease prevention before and during pregnancy should be provided to improve oral health. Another similar kind of study was conducted by Kim A. Boggess; Diana M. Urlaub, Merry-K Moos et al (2011)¹ and concluded that pregnant women have some oral health knowledge, which varied according to maternal race or ethnicity. Their beliefs varied according to their education levels. Including oral health education as a part of prenatal care may improve knowledge regarding the importance of oral health among vulnerable pregnant women, thereby, improving their oral health and that of their children.

The awareness among pregnant women came out to be low below 25 years of age.The awareness among pregnant women came out to be average above 25 years of age.When the results were compared of above and below 25 years of age the awareness came out to be nonsignificant with average awareness among above 25 years of age.

This study is not without limitations. One limitation is its reliance on self-reported data, which is often subject to biases inherent to questions being asked such as recall bias. Nonetheless, the results would serve as a veritable tool for designing and specifying appropriate oral health education messages for pregnant women receiving antenatal care.

CONCLUSION

A majority of the pregnant women has good knowledge and information about general health; however, their knowledge and awareness regarding periodontal disease, and its effect on the pregnancy and birth outcome is limited. Most pregnant women need more information about oral health, and prevention of gingival and periodontal diseases. Longitudinal studies are needed to assess the long-term effect of oral health education programs in maternity care centers on dental health knowledge and behavior of pregnant women. Further studies are needed to determine if there is a strong correlation between periodontal disease and premature labor and whether periodontal therapy or prevention can reduce the risk of premature labor. Studies to assess the role of dental hygienists in designing and promoting information regarding periodontal health awareness and practices among pregnant women in maternity care centers.

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