

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

Shilpi Singh¹, Kapil Dagrus², Pratik B Kariya³, Sweta Singh⁴, Jivani Darmina⁵, Pranjali Hase⁶

1- Sr.Lecturer, Dept. of community Dentistry, D.J. College Of Dental Sciences & Hospital, 2- Sr. Lecturer, dept. Of oral & maxillofacial Pathology, K.M.Shah Dental College & Hospital, Vadodara, Gujarat. 3- Sr. Lecturer, Dept. of Pedodontics And Preventive Dentistry, K.M.Shah Dental College & Hospital, Vadodara, Gujarat. 4- Reader, Dept. of Public health dentistry, K.M.Shah Dental College & Hospital, Vadodara, Gujarat. 5- Private dental Surgeon, The Capital App, Sunshine School Road, Valkeshwari, Jamnagar. 6- Post Graduate student, oral & maxillofacial pathology, K.M.Shah Dental College & Hospital, Vadodara, Gujarat.

Correspondence to:

Dr. Kapil Dagrus, Sr. Lecturer, dept. Of oral & maxillofacial Pathology, K.M.Shah Dental College & Hospital, Vadodara, Gujarat.

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 pre-existing 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

How to cite this article:

Singh S, Dagrus K, Kariya PB, Singh S, Darmina J, Hase P. Oral Periodontal Health Knowledge and Awareness among Pregnant Females in Bangalore, India. *Int J Dent Med Res* 2015;1(6):7-10.

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.² In 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 $n = z^2pq/d^2$ where p (the prevalence of women with good knowledge) was set at 40%. Thus the computed minimum sample size was 271 subjects. This was increased by 10% to 300 subjects 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 socio-demographic 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 between 1 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 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

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.

REFERENCES

1. Boggess KA, Urlaub DM, Moos MK, Polinkovsky M, El-Khorazaty J, Lorenz C. Knowledge and beliefs regarding oral health among pregnant women. *J Am Dent Assoc.* 2011 Nov;142(11):1275-82.
2. Loe H, Silness J. Periodontal Disease In Pregnancy. I. Prevalence And Severity. *Acta Odontol Scand.* 1963 Dec;21:533-51
3. Jensen J, Lilijmack W, Bloomquist C. The effect of female sex hormones on subgingival plaque. *J Periodontol*1981;52(10): 599–602.
4. Nuamah I, Annan BD. Periodontal status and oral hygiene practices of pregnant and non-pregnant women. *East Afr Med J.* 1998 Dec;75(12):712-4.
5. Ferris GM. Alteration in female sex hormones: their effect on oral tissues and dental treatment. *Compendium.* 1993 ;14(12):1558-64.
6. Zachariassen RD. The effect of elevated ovarian hormones on periodontal health: oral contraceptives and pregnancy. *Women Health.* 1993;20(2):21-30.
7. Raber-Durlacher JE, van Steenberghe TJ, Van der Velden U, de Graaff J, Abraham-Inpijn L. Experimental gingivitis during pregnancy and postpartum: clinical, endocrinological, and microbiological aspects. *J Clin Periodontol.* 1994;21(8):549-58.
8. Offenbacher S, Katz V, Fetik G, Collins J, Boyd D, Maynor G, et al. Periodontal infection as a possible risk factor for preterm low birth weight. *J Periodontol* 1996; 67(10 suppl): 1103–1113.
9. Dasanayake A. Poor periodontal health of the pregnant woman as a risk factor for low birth weight. *Ann Periodontol* 1998; 3(1): 206–212.
10. Jeffcoat MK, Geurs NC, Reddy MS, Cliver SP, Goldenberg RL, Hauth JC. Periodontal infection and preterm birth: results of a prospective study. *J Am Dent Assoc.* 2001 Jul;132(7):875-80.
11. Offenbacher S, Leiff S, Boggess KA, Murtha AP, Madianos PN, Champagne CM, et al. Maternal periodontitis and prematurity. Part 1: Obstetric outcome of prematurity and growth restriction. *Ann Periodontol* 2001; 6(1): 164–174.
12. Lopez NJ, Smith P, Gutierrez J. Periodontal therapy may reduce the risk of preterm low birth weight in women with periodontal disease. *J Periodontol* 2002; 73 (8): 911–924.
13. Jeffcoat MK, Hauth JC, Geurs NC, Reddy MS, Cliver SP, Hodgkins PM, et al. Periodontal disease and preterm birth: result of a pilot intervention study. *J Periodontol* 2003;74(8): 1214–1218.
14. Boggess KA, Lieff S, Murtha AP, Moss K, Beck J, Offenbacher S. Maternal periodontal disease is associated with an increased risk for preeclampsia. *Obstet Gynecol.* 2003 Feb;101(2):227-31.
15. Al Habashneh R, Guthmiller JM, Levy S, Johnson GK, Squier C, Dawson DV, Fang Q. Factors related to utilization of dental services during pregnancy. *J Clin Periodontol.* 2005 Jul;32(7):815-21.
16. Alwaeli HA, Al-Jundi SH. Periodontal disease awareness among pregnant women and its relationship with socio-demographic variables. *Int J Dent Hyg.* 2005 May;3(2):74-82.

Source of Support: Nil
Conflict of Interest: Nil