Research Article

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Assessment of Dental Knowledge, Practices and Awareness about Health Problems Encountered During Pregnancy: A Questionnaire Based Study

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ABSTRACT

Background: Many physiological conditions in women can bring some reversible changes in oral health. Puberty, pregnancy and menopause are the conditions which usually have an effect on the oral health of women. Pregnant women need more knowledge and awareness about the many changes that occur in the oral cavity during pregnancy. Present study was carried out for assessment of dental knowledge, practices and awareness about health problems encountered during pregnancy**.**

Material and Methods: The present study was a questionnaire-based survey which was designed to assess dental knowledge, practices, awareness and health problems encountered during pregnancy among pregnant women in Gujarat state. The study sample consists of 100 participants. Personal data included information related to the patient's name, age, occupation, residential area. General questions which include daily oral health practices and the changes seen in gingiva during pregnancy. The questionnaire was prepared on google form and distributed to 100 pregnant women by mobile application.The data was collected, summarized and statistically analyzed**.**

Results: Most of the respondents (58%) had poor knowledge and only 42% had good knowledge. while around 43% of the respondents had poor attitude and 57% had good Attitude regarding periodontal health. With regards to practice majority of the respondents had good practice while only 32% of the respondents had poor practice.

Conclusion: 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.

Keywords: Knowledge, Oral health, Pregnant women, Questionnaire.

INTRODUCTION

Periodontal disease, including gingivitis and periodontitis, are infections that if left untreated, can lead to tooth loss. The main cause of periodontal disease is bacterial plaque, the initiation and progression of gingivitis and periodontitis can be caused due to factors like

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pregnancy.[1]Pregnancy represents a fetomaternal balance between the growing fetus and the maternal immune system and it has the potential to reject the fetus.[2] Many physiological conditions in women can bring some reversible changes in oral health. Puberty, pregnancy and menopause are the conditions which usually have an effect on the oral health of women. Immunological, dietary and behavioral factors associated with pregnancy are believed to be contributing factors. Pregnant women are particularly susceptible to gingival and periodontal diseases. They may not experience symptoms until advanced disease stages and therefore unknowingly increase perinatal risk. Premature birth, low birth weight babies, pre-eclampsia, ulcerations of the gingival tissue, pregnancy granuloma, tooth erosion, etc are risks seen in pregnancy.[3] During the second trimester of pregnancy, gingivitis may occur more frequently because of a rise in the estrogen level that increases the blood flow to the tissue, which exaggerates the reaction of gingival tissue to the irritants in plaque.[4]

Dental plaque is a primary etiologic factor for periodontal diseases but presence of several risk factors such as smoking, systemic diseases, environmental factors, physiological conditions like puberty, menopause and pregnancy may place an individual at risk for developing disease. Periodontal disease, including gingivitis and periodontitis, has been associated with pregnancy. Nearly 60 to 75% of pregnant women have gingivitis, an early stage of periodontal disease that occurs when the gums become red and swollen from inflammation that may be aggravated by changing hormones during pregnancy.[5,6] If gingivitis is not treated, the bone that supports the teeth can be lost, and the gums can become infected. Teeth with little bone support can become loose and may eventually have to be extracted. Periodontitis has also been associated with poor pregnancy outcomes, including preterm birth and low birth weight.

During pregnancy, women undergo the greatest hormonal and physiological changes of their lives, some of which can affect their mouths. These changes may include: 1) An increase in cariogenic and periodontopathogenic bacteria from changes in diet, in dental hygiene and in salivary composition 2) Changes in gingival tissue from increased vascular permeability 3) Increased sex hormones: estrogen and progesterone. These changes during pregnancy and neglected oral hygiene practices tend to increase the incidence of dentaldiseases like gingivitis.[6]

The purpose of this Study was carried out to assess the dental knowledge, practices and awareness about health problems encountered during pregnancy.

MATERIALS AND METHODS

The present study was a questionnaire-based survey which was designed to assess dental knowledge, practices, awareness and health problems encountered during pregnancy among pregnant women in Gujarat state. The study sample consists of 100 participants. The inclusion criteria were pregnant women and those who were having systemic illness and who were uncooperative or not willing to give consent were excluded from the study. Ethical approval was taken from hospital's research ethics committee. Purpose of the study was explained to participating patients and informed consent was taken.

There is no universally accepted or recommended index/ inventory to measure oral health knowledge and awareness. The data was collected based on the knowledge and behavioral aspects which was derived from a series of independent questionnaires. A self-constructed questionnaire written in English language and Varnecular language was madeby a research expert for the study. The questionnaire was pre-tested for validity and was revised according to the feedback. The final questionnaire consisted of 16 questions which were divided into four parts;

Personal data included information related to the patient's name, age, occupation, residential area. General questions which include daily oral health practices and the changes seen in gingiva during pregnancy. A self administered structured questionnaire was developed and administered to a convenience sample of 10 students who were interviewed to gain feedback on the overall acceptability of the questionnaire in terms of length and language clarity. Based on their feedback the questionnaire did not require any correction. Cronbach's coefficient was found to be 0.69, which showed an internal reliability of the questionnaire.

Mean Content Validity Ratio (CVR) was calculated as 0.88 based on the opinions expressed by a panel of four academicians. Knowledge about changes in oral health during pregnancy and their effect on pregnancy outcomes. Awareness and attitude about oral health and pregnancy outcomes. The questionnaire was made available using online mode as Google documents and the link was circulated among the participants using mail Id's and what's app.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively. Descriptive statistics included computation of percentages.

RESULTS

Table 1 consists of questions regarding knowledge, attitude and practice of women about health problems encountered during pregnancy. Table 2 describes Subject response for individual question. Only 14% of the participants have heard about the possible correlation between periodontal diseases and pregnancy. Only 22% of the participants know that Pregnancy makes your gums bleed, swell, become red. Majority of the pregnant women did not know that minor dental treatment can be carried out during pregnancy. Regarding Attitude questions around 22% of the participants think that extra care of oral hygiene is needed during pregnancy. Majority of the pregnant women did not find any difficulty in oral hygiene maintenance during pregnancy. Majority (55%) of the participants think that gum disease could have a relation with premature labor and low birth weight babies. Regarding Practice questions all of the participants (100%) brush their teeth daily. Only 30% of the participants use any other oral hygiene aids other than tooth brush for cleaning their teeth and only 6% women experience similar gum problems during their previous pregnancy.

Most of the respondents (58%) had poor knowledge and only 42% had good knowledge. (Table 3) while around 43% of the respondents had poor attitude and 57% had good Attitude regarding periodontal health. With regards to practice majority of the respondents had good practice while only 32% of the respondents had poor practice.

Table 1: Questionnaire

Sr no.	Questions
	Knowledge
	Have you heard about the possible correlation between periodontal diseases and pregnancy?
	Do you know that Pregnancy makes your gums bleed, swell, become red?
	Do you know that minor dental treatment can be carried out during pregnancy?
	When do you think is the best time to undergo any dental treatment?
	Are you aware about safety of taking the antibiotics during pregnancy?
	Attitude
	Do you think that extra care of oral hygiene is needed during pregnancy?
	Did you find any difficulty in oral hygiene maintenance during pregnancy?
	Did your gynaecologist recommended dental checkup before or during pregnancy?
	If you are diagnosed with periodontal disease (gum disease) now, will you undergo treatment for the same during pregnancy?
	Do you fear that dental treatment may affect the health of the newborn?
	Do you think that gum disease could have a relation with premature labor and low birth weight babies?
	Practice
	Do you brush your teeth daily?
	Do you use any other oral hygiene aids other than tooth brush for cleaning your teeth?
	Do your gums bleed during tooth brushing after conception?
	Have you felt loosening of teeth in your mouth?
	Did you experience similar gum problems during your previous pregnancy?

Table 2: Subject response for individual question.

Questions	Yes	No
Knowledge		
	16	84
	22	78
	36	64
	1-3 months 3-6 months 6-12 months	22 68 10
	69	31
Attitude		
	22	78
	10	90
	36	64
	42	58
	55	45
	4	96
Practice		
	100	0
	30	70
	12	88
	14	86
	6	94

Table 3: Knowledge among study participants.

Knowledge	Number of subject	Percentage (%)
Poor knowledge	58	58
Good knowledge	42	42
Total	100	100

Table 4: Attitude among study participants.

Attitude	Number of subject	Percentage (%)
Poor Attitude	43	43
Good Attitude	57	57
Total	100	100

Table 5: Practice among study participants.

Practice	Number of subject	Percentage (%)
Poor Practice	32	32
Good Practice	68	68
Total	100	100

DISCUSSION

Periodontal disease progression is usually unnoticed, and most people probably recognize it only when it reaches an advanced stage. Therefore, knowledge and awareness of periodontal diseases is important to control and maintain periodontal health. This study was undertaken to assess knowledge and awareness level among pregnant women about periodontal health. Pregnancy can be affected by inflammatory periodontal disease which may lead to premature labour or a low-birth weight infant.[2] The American Dental Association (ADA) suggests that during the first and third trimester of pregnancy, elective dental care should be avoided, if possible.[8].According to California Dental Association Foundation, the use of dental x-rays and local anesthesia for prevention, diagnosis, and treatment of oral diseases, are highly beneficial with no additional fetal or maternal risk when compared to the risk of not providing care.[9]

Most of the respondents (58%) had poor knowledge and only 42% had good knowledge. (Table 3) while around 43% of the respondents had poor attitude and 57% had good Attitude regarding periodontal health. With regards to practice majority of the respondents had good practice while only 32% of the respondents had poor practice. The present study showed inadequate Knowledge and practice among majority (71%) of the study population. The results of the present study were similar to study conducted by Shilpi et al. (2015)[11] who concluded that knowledge and awareness for pregnant women about their teeth and gingival condition is generally poor. Before and during pregnancy simple educational preventive programmes on oral self-care and disease prevention should be provided to improve oral health. A study conducted by Boggess et al. (2011)[12] concluded that oral health knowledge can vary according to maternal race or ethinicity in pregnant women. Their beliefs varied according to their education levels. Oral health knowledge among pregnant women and that of their children can be improved by oral health education as a part of prenatal care. In comparison with results found by Taani et al[13] regarding the participants knowledge of periodontal health, similar results were found in the non-pregnant and pregnant women. Low socio-economic status, inaccessibility to dental clinics, and unawareness of oral hygiene practices may be a reason for negligence of oral

health[14] It is generally accepted that good oral health knowledge is one of the important precursors of good oral health behavior. Other factors include the cultural values and beliefs in the society, thus it may be worthwhile to conduct further research on the role of culture in the development of good oral health behavior. Low socio-economic status, inaccessibility to dental clinics, and unawareness of oral hygiene practices may be a reason for negligence of oral health[14] Pregnancy does not cause gingivitis, but it can aggravate preexisting disease. The most marked changes are seen in gingival vasculature. Characteristic feature of pregnancy gingivitis is that the gingiva becomes dark red, swollen, smooth and bleeds easily. Localized gingival enlargements may be seen in women with pregnancy gingivitis. The gingival changes usually resolve if local irritants are eliminated within few months after delivery. The inflammatory changes are usually reversible and restricted to the gingival.[15] During pregnancy hormonal changes can cause exacerbation of periodontal or gingival clinical characteristics especially swelling and bleeding [16]

CONCLUSION

A majority of the pregnant women had limited knowledge and awareness regarding periodontal disease, and its effect on the pregnancy and adverse pregnancy outcomes. Most pregnant women need more information about oral health, and prevention of gingival and periodontal diseases. Longitudinal studies are needed to assess the longterm effect of oral health education programs in maternity care centers on dental health knowledge and behavior of pregnant women. Long term studies are required to determine if there is a strong correlation between periodontal disease and premature labor. Also further studies are required to check whether periodontal therapy or prevention can reduce the risk of premature labor.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Kim J, Amar S. Periodontal disease and systemic conditions: A bidirectional relationship; Odontology. 2006; 94(1):10-21.

2. Offenbacher S, Jared HL, OReilly PG, Wells SR, Salvi GE et al. Potential Pathogenic Mechanisms of Periodontitis-Associated Pregnancy Complications. Ann Periodontol. 1998; 3(1):234-250.

3. Sajjan P, Pattanshetti J, Padmin C, Nagathan VM, Sajjanar M, Siddiqui T. Oral Health Related Awareness and Practices among Pregnant Women in Bagalkot District, Karnataka, India. J Int Oral Health. 2015; 7(2):1- 5.

4. Hayder AA, Suhad H. Periodontal disease awareness among pregnant women and its relationship with sociodemographic variables. Int J Dent Hygiene. 2005; 3(2):74–82.

5. American Dental Association Council on Access, Prevention, and Interprofessional Relations,. 2006.

6. Corbella S, Taschieri S, Del Fabbro M, Francetti L, Weinstein R, Ferrazzi E. Adverse pregnancy outcomes and periodontitis: A systematic review and meta-analysis exploring potential association. Quintessence Int (Berl). 2016;47(3):163-204. doi:10.3290/j.qi.a34980

7. Reddy R, Tatapudi R, Nimma V, Reddy R, Amara S, Koppolu P. Awareness and attitude towards maintenance of oral health during pregnancy among patients and clinicians attending obstetrics and gynecology ward. J Dr NTR Univ Heal Sci. 2013;2(2):102. doi:10.4103/2277-8632.112334.

8. Gaffield ML, Brenda J, Gilbert C, Malvitz DM, Romaguera MR. Oral health during pregnancy An analysis of information collected by the Pregnancy Risk Assessment Monitoring System. J Am Dent Assoc. 2001; 132(7):1009–1016.

9. California Dental Association Foundation. Oral Health Care during Pregnancy and Early Childhood: Evidencebased guidelines for health professionals. American College of Obstetricians and Gynecologists: California Dental Association Foundation. 2010, 80

10. California Dental Association Foundation. Oral Health Care during Pregnancy and Early Childhood: Evidencebased guidelines for health professionals. American College of Obstetricians and Gynecologists: California Dental Association Foundation. 2010, 80.

11. 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.

12. 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; 142(11):1275-1282.

13. Taani DQ. Periodontal awareness and knowledge, and pattern of dental attendance among adults in Jordan. Int Dent J. 2002; 52(2):94–98.

14. Ogunwade SA. Study of material chemoprohylaxis and pregnancy gingivitis in Nigerian women. Clin Prev dent. 1990; 13(5):25-30.

15. Laine MA. Effect of pregnancy on periodontal and dental health. Acta Odontol Scand. 2002; 60(5):257–264.

16. Rocha JM, Chaves VR, Urbanetz AA, Baldissera RS, Rosing CK. Obstetricians knowledge of Periodontal disease as a potential risk factor for preterm delivery and low birth weight. Braz Oral Res. 2011; 25(3):248-254.