ORIGINAL ARTICLE

Determination The Oral Health Status Among Pregnant Women

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ABSTRACT

Objective: To determine the oral health status in the term of gingivitis and dental caries among pregnant women.

Material and Methods: This cross-sectional study was conducted at BHU Innayat Pur, with 6 months duration from October 2016 to March 2017. All the pregnant women with age 20 to 40 years were selected for the study. All the pregnant women patients were undergoing complete dental clinical examination to see the gingivitis, dental caries and overall oral health status. All the women were interviewed regarding their socioeconomic status, educational level, residential status, parity and consciousness regarding oral health status. Gingivitis was categorized as mild moderate and severe. All the data according to objective was collected in the proforma.

Results: In this study total 63 pregnant women were studied; their mean age was 34.12+4.23 years. Poor socioeconomic status was most common in 58.7% women. 28.6% women were illiterate, 34.9% had primary level education, 27.0% women were metric passed and only 9.5% women were graduate. Overall dental hygiene was poor in 52.4% women, including dental caries occurred in 39.7% women and gingivitis was found in 84.1% women. Poor socioeconomic status was found significantly associated with poor oral health status p-value 0.01. Educational status was highly affected on oral hygiene as illiterate and primary level educational women were significantly associated poor oral hygiene as compare to metric and graduate level educational women p-value 0.001. Multi parity also significantly impacted on oral hygiene as; multiparous women were significantly associated to poor oral health status as compere to primiparous women p-value 0.001.

Conclusion: It is concluded that overall poor hygiene was in pregnant women, prevalence of dental caries and gingivitis was very high. Women were completely un-aware regarding association of oral hygiene and pregnancy. Lower educational status, poor socioeconomic status and multiparity were significantly associated with poor oral hygiene..

Key Words: Pregnancy, oral hygiene, gingivitis, dental caries

Introduction

Women during pregnancy are particularly susceptible to periodontal and gingival diseases. Several oral lesions reported to be commonest during pregnancies.[1] In the bodies hormonal changes during pregnancies make them more susceptible to the infections of oral cavities including gum's diseases. These dental issues not only affected on mothers but also fetus during development. In the life of a woman's, main physiological changes and hormonal alterations occurred during pregnancy. Most significant hormonal alteration during pregnancy are;

elevated estrogen and progesterone levels.[2,3] Estradiol level in the plasma are stated to raise up to 30 times more than those found during the cycle of reproduction. Estrogen hormone regulates the cellular proliferation, variations and keratinization, while progesterone affects microvasculature permeability and also alter the collagen's production of collagen, these hormonal changes in pregnancies tend to raise the prevalence of the dental diseases as gingivitis and may even contribution to low salivary pH, therefore in turn lead to raised prevalence of the dental caries.[4,5] Prevalence of the periodontal events is 30% to 100% stated in several reports,[2,6] including incidence of the dental caries from 74% to 99.9% during pregnancy.[7,8] On other hand raised dental alterations has been stated 99.38% caries particularly.[1,9] Causes for higher caries risk pregnant women as raised pH due to frequent vomiting in oral cavity, expectant mother have desire to sugary snack and lower care for oral health. If left untreated dental caries it may lead many systemic complications.[1] Gingivitis is the inflammation of gums and also main oral event during pregnancy in the conditions. Among pregnant women, gingivitis is frequent due to raised estrogen and progesterone level, oral flora changes and immune response decreasing, therefore body's ability reduced to the maintain healthful gingival tissues.[10] Good oral hygiene measurements including individual care as; tooth brushing regularly, flossing and mouth washes utilization properly and professional measures like, oral prophylaxis may decrease the burden of gingivitis.[1] Dentistry may perform the vital role to improve the prenatal outcome and dental health of mothers by screening, referral, and awareness during pregnancy. In the literature data regarding oral health status and its treatment is less than adequate and pregnant women experiencing their 1st pregnancy,[2] and in our country also very few studies has been conducted on this event. Therefore this study aimed to determine the prevalence of dental caries and gingivitis including overall oral health status in women during pregnancy.

Methodology

This cross sectional study was conducted at BHU Innayat Pur, with 6 months duration from October 2016 to march 2017. All the pregnant women with age 20 to 40 years were selected for the study. Women with uncontrolled diabetes, history of drug as calcium channel blockers, history of smoking, chaliia, paan and manpuri consumption and severely anaemic women were excluded from the study. All included pregnant women patients were underwent complete dental clinical examination to see the gingivitis, dental caries and overall oral health status. All the women were interviewed regarding their socioeconomic status, educational level, residential status, parity and consciousness regarding oral health status. Trimesters of pregnancies were also done by reports of fetal wellbeing ultrasound. Gingivitis was categorized as mild moderate and severe. Oral health status was categorized as excellent, good and poor. All the data according to objective was collected in the proforma. Data was analyzed by SPSS version 16.0. Simple frequency and percentage were calculated for qualitative variables. Mean and standard deviation were calculated for quantitative variables. Chi-square test was applied to assess the effects of parity, educational level and socioeconomic status on dental caries, gingivitis and poor oral health. P-value <0.05 was considered as significant.

Results

In this study total 63 pregnant women were selected, their mean age was 34.12 ± 4.23 years and most common age group was 31-40 years with 60.3% women. Poor socioeconomic status was most common in 58.7% women, followed by middle socioeconomic class 28.6% and upper socioeconomic status were only 12.7%. Majority of women 47.6% were presented with 2nd trimester of pregnancy, 33.3% women were with 1st trimester and 19% women were with 3rd trimester. 28.6% women were illiterate, 34.9% had primary level education, 27.0% women were metric passed and only 9.5% women were graduate. **Table I**

Overall dental hygiene was found poor in 52.4% women, 34.9% women were presented with good hygiene, while only 12.7% women were with excellent oral hygiene, including dental caries occurred in 39.7% women and gingivitis was found in 84.1% women, which further categorized as mild gingivitis in 50.8% women, moderate in 27.0% and severe gingivitis was found in 6.3% women. **Table II**

Table I:. Demographic characteristics of women n=63		
Characteristics	**Frequency**	**Percent**
Age groups		
20-30 years	25	39.7%
31-40 years	38	60.3%
Socio-economic status		
Poor	37	58.7%
Middle	18	28.6%
Upper	08	12.7%
Trimester of pregnancy		
1st	21	33.3%
2nd	30	47.6%
3rd	12	19.0%
Educational status		
Illiterate	18	28.6%
Primary	22	34.9%
Metric	17	27.0%
Graduate	06	9.5%
Parity		
Primipara	20	31.7%
Multipara	43	68.3%

Table II: Gingivitis, dental caries and oral health status among pregnant women n=63		
Variables	**Frequency**	**Percent**
Dental caries		
Yes	25	39.7%
No	38	60.3%
Gingivitis		
No	10	15.9%
Mild	32	50.8%
Moderate	17	27.0%
Severe	04	06.3%
Overall oral health status		
Excellent	08	12.7%
Good	22	34.9%
Poor	33	52.4%

Poor socioeconomic status was found significantly associated with poor oral health status p-value 0.01, as compare to upper socioeconomic status, upper socioeconomic status women had good oral hygiene. 2nd and 3rd were significantly associated with poor socioeconomic status as compare to 1st trimester p-value 0.01. Educational status was highly affected on oral hygiene as illiterate and primary level educational women were significantly associated poor oral hygiene as compare to metric and graduate level educational women p-value 0.001. Multi parity also significantly impacted on oral hygiene as; multiparous women were significantly associated to poor oral health status as compere to primiparous women p-value 0.001. **TABLE:3**

Table III: Severity of dental caries according to Duration of diabetes n=65				
Demographic characteristics	**Oral health status**			
	Excellent	**Good**	Poor	**P-value**
SES status				
Poor	02	14	21	0.01
Middle	03	06	07	
Upper	03	02	02	
Trimester of pregnancy				
1st	03	09	09	
2nd	04	09	17	0.01
3rd	01	04	07	
Educational status				
Illiterate	01	05	12	
Primary	01	07	14	0.001
Metric	04	06	07	
Graduate	02	04	00	
Parity				
Primipara	04	09	07	0.001
Multipara	04	13	26	

Discussion

Pregnancy may have an important effect on oral health, and pregnant women are a population group with special needs in terms of oral health status. Literature showed that good oral health care in women during pregnancy inadequate, particularly in association to areas where educational level and health promotions with some evidence of disparities by socio-economic status and ethnicity.[11] Present study has been conducted to assess

the oral health status in pregnant women, and we found poor oral hygiene mostly in women, and this event was found significantly associated with poor educational status, poor socioeconomic status and multiparity. Young women in our study were seen with better oral hygiene as compare to those women having age more than 30 years. Total 63 pregnant women were selected, their mean age was 34.12±4.23 years and most common age group was 31-40 years with 60.3% women. In the comparison of this study George A, et al[12] conducted study on oral health status and reported that mean age of the participants was 28.1±5.6 with range from 16 to 44 years. While inconsistently Rahman MM et al[11] reported that 50.0% of pregnant women was presented with age group of 15 to 20 years and mean age was 22.28±4.22 years. This mean age was lower as compare our study. In this study majority of women 47.6% were presented with 2nd trimester of pregnancy, 33.3% women were with 1st trimester and 19% women were with 3rd trimester. Similarly George A, et al[2] also found multiparous women were in majority.

In this study overall dental hygiene was found poor in 52.4% women, 34.9% women were presented with good hygiene, while only 12.7% women were with excellent oral hygiene, including dental caries occurred in 39.7% of the pregnant women. Consistently in a study of Rakchanok N et al[13] reported that among pregnant women the percentage of caries was around 50.0%. Similarly in a previous study of Kornman and Loeshe et al[14] stated that one-quarter of women with reproductive age group had dental caries. Some other studied also found big prevalence of dental caries among pregnant women.[15,16] Women during pregnancy are at high risk for dental caries due through elevated exposure to gastric acid resulting from morning sickness early in pregnancy or an incompetent esophageal sphincter and gastric pressure later in pregnancy. In the present study gingivitis was the commonest issue and found in 84.1% women that further categorized as mild gingivitis in 50.8% women, moderate in 27.0% and severe gingivitis was found in 6.3% women. Inconsistently Rakchanok N et al[13] reported that 86.2% of pregnant women had gingivitis. In many studies reported that gingivitis is commonest oral situation during pregnancy, which if left untreated, may develop periodontal events which are harmful for both soft and hard tissues.[17,18]

In this study poor socioeconomic status was found significantly associated with poor oral health status, as compare to upper socioeconomic status, upper socioeconomic status p-value 0.01. Similarly findings were also found in some other studies.[19-21] It has been reported that unemployment was significantly associated with raised gingivitis.[19] Lower socio-economic status apparently suggested inaccessibility to the dental clinic and an un-awareness regarding oral hygiene.[20] In the favour of this study Rakchanok N et al[13] reported that association between socio-economic factors such as occupation and education, and dental caries and gingivitis.

We found 28.6% women were illiterate, 34.9% had primary level education, 27.0% women were metric passed and only 9.5% women were graduate. Educational status was highly affected on oral hygiene as illiterate and primary level educational women were significantly associated poor oral hygiene as compare to metric and graduate level educational women p-value 0.001. Mark FH et al[21] stated that the lower educational level was significantly linked to developed gingivitis. Rakchanok N et al[13] also found significant association between gingivitis and low level of education. Mostly women during pregnancy had poor oral hygiene, due to low knowledge and poor practice regarding dental health care, and poor oral hygiene and dental health care behaviors are significantly linked to gingivitis and dental caries. Mostly women during pregnancy were completely unaware regarding dental health status and its importance.[22] many myths has been focused regarding development of dental diseases as; several women believed that dental issues are due to calcium loss during pregnancy. Many women showed their problems as due to multiparity they can't take care himself. Unfortunately mostly women were said that they did not hear and read regarding effects of dental poor hygiene on pregnancy.

Conclusion

We concluded that overall poor hygiene was in pregnant women, prevalence of dental caries and gingivitis was very high. Women were completely un-aware regarding association of oral hygiene and pregnancy. Lower

educational status, poor socioeconomic status and multiparity were significantly associated with poor oral hygiene. Oral hygiene importance should be developed in women during early pregnancy by gynecologists during antenatal care, for better fetomaternal outcome.

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