Original Article

Oral Health in Pregnant Women

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Abstract

Background: Oral health is an important component of general health and should be maintained during pregnancy. Physiologic changes during pregnancy may result in noticeable changes in the oral cavity. **Objective:** To evaluate the oral hygiene and educate the pregnant women on its importance to the developing fetus. **Materials and Methods:** 30 pregnant women were with no other systemic diseases were examined to assess Dental caries, gingivitis, periodontitis and any other lesion. **Results:** 23.3% of them had dental caries, 60% gingivitis, 10% had pregnancy associated gingival growth. **Conclusion:** There is a lack of dental knowledge and practices among pregnant women. Educating women to maintain good oral health is fundamental in reducing dental disease.

Keywords: *Evaluation, hormone change, maintenance good oral health, Oral health, pregnant woman*

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Introduction

Changes in oral health during pregnancy are prevalent to occur. The primary changes are due to a surge in hormones, particularly an increase in estrogen and progesterone level which can cause the gum tissues to exaggerate a normal reaction to plaque. Plaque is a sticky, colorless film of bacteria that covers the surface of the teeth. In case of poor oral hygiene, plaque can even harden into tartar and may increase the risk of gingivitis, a condition with symptoms of red, swollen and tender gums that are more likely to bleed.[1] Since it is prevalent during pregnancy, it is called as pregnancy gingivitis. It generally begins as early as the 2nd month. If the gingivitis is preexisting, then the condition is likely to worsen during pregnancy. If gingivitis remains untreated, it can lead to periodontitis, a more serious form of gum disease. Pregnant women are more likely to develop extra- and intra-oral swellings including pregnancy tumors, inflammatory, noncancerous growths that results in irritations. Normally, the tumors tend to regress after the delivery. But if a tumor tends to affect the other oral hygiene procedures such as brushing and chewing the dentist may decide to remove it. The maintenance of healthy oral hygiene can prevent gingivitis.[2] Brushing with fluoride toothpaste at least twice a day and after each meal especially near the gum line will reduce the chance of pregnancy gingivitis. Floss, anti-plaque, and fluoride mouthwashes can also be used. According to new researches, there is a possible link between gingival disease and preterm, low-birthweight babies. The entry of bacteria to the bloodstream through the gums triggers the production of chemicals called prostaglandins, which in turn induce premature labor. Therefore, preventive dental care during pregnancy improves oral health and overall health of both the baby and the mother.[3] The main objective of the study is to assess the oral hygiene status in pregnant women and to create awareness as well as to impart the importance of maintaining the oral hygiene.

Materials and Methods

Study design

This is a cross-sectional hospital-based study to estimate the oral hygiene among a cohort of antenatal women.

Study population

A total of thirty pregnant women of 20–30 years of age of all the three trimesters attending the antenatal clinic at the Department of Obstetrics and Gynaecology at Sir Ivan Stedeford Hospital, Ambattur, Chennai, Tamil Nadu, India during 10 months (July 2014–April 2015)

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were included in the study. The study was approved by the Institutional Ethics Committee. Women who consented to participate in the study with no history of smoking and alcohol consumption were recruited for the study.[4-7]

Periodontal examination

Detailed periodontal examinations for assessing the clinical parameters such as calculus index (CI), debris index (DI), oral hygiene index-simplified (OHI-S), decayed, missing, and filled surface index were carried out for all the women. CI, DI, and OHI-S were used to examine the dental calculus, gingival bleeding in all the women. They were measured by probing on the tooth surfaces of six index teeth in the oral cavity. Individual index scores were calculated by summing of the scores divided by the number of teeth examined.[8]

Results

Of the women surveyed, 80%, 77.8%, and 75% of the women belonging to the first, second, and third trimester, respectively, stated that they brushed their teeth once a day and 20%, 22.2%, and 25% of the women belonging to the first, second, and third trimester, respectively, brushed their teeth twice a day [Table 1].

About 93.8% of the women use toothbrush and paste for brushing their teeth whereas 6.3% of the women used their finger and tooth powder for the same [Table 2].

Nearly, 23.3% of the women surveyed found problems with their teeth that is they suffered from tooth decay among which 20%, 22.2%, and 25% of the women belonged to first, second, and third trimester, respectively [Table 3].

About 60% of the women surveyed suffered from bleeding gums with the percentage more in the women belonging to the third trimester (75%). This indicates the fact that the level of hormone affecting the oral hygiene increases with the increase in the month of pregnancy [Table 4].

Very few cases of intraoral swellings have been observed among the women surveyed (10%) [Table 5].

In case of OHI-S, the women belonging to the second and third trimester shared an equal as well as a relatively higher score of 2.5. Women belonging to the first trimester were observed with the OHI-S score of 1.5 which is comparatively lower than that of the women belonging to the other two trimesters [Table 6].

Table 1: Brushing Frequency

Frequency of brushing	Period of trimester			
	First (%)	Second (%)	Third (%)	Total (%)
Once	80	77.8	75	76.7
Twice	20	22.2	25	23.3
Total	100	100	100	100

Table 2: Mode of Brushing

Using what	Period of trimester			
	First (%)	Second (%)	Third (%)	Total (%)
Brush and paste	100	100	93.8	96.7
Finger and tooth powder	0	0	6.3	3.3
Total	100	100	100	100

Table 3: DMFS index

DMFS	Period of trimester			
	First (%)	Second (%)	Third (%)	Total (%)
Nil	80	77.8	75	76.7
Yes	20	22.2	25	2.3
Total	100	100	100	100

DMFS: Decayed, missing, and filled surfaces

Table 4: Gingival bleeding

Bleeding gums	Period of trimester			
	First (%)	Second (%)	Third (%)	Total (%)
No	60	55.6	25	40
Yes	40	44.4	75	60
Total	100	100	100	100

Table 5: Intraoral swellings

Intraoral swellings	Period of trimester			
	First (%)	Second (%)	Third (%)	Total (%)
No	80	100	87.5	90
Yes	20	0	12.5	10
Total	100	100	100	100

Table 6: OHI-S index

Period of trimester	Mean	*n*	SD
First	1.896	5	0.4644
Second	2.198	9	0.7152
Third	2.794	16	1.0946
Total	2.465	30	0.9635

SD: Standard deviation

Discussion

Physiologic changes during pregnancy may result in noticeable changes in the oral cavity. These changes predispose women to pregnancy gingivitis, benign oral gingival lesions, tooth mobility, tooth erosion, dental caries, and periodontitis. Kornman and Loeshe reported that one-fourth of the women of reproductive age had dental caries, a disease in which dietary carbohydrate is fermented by oral bacteria into acid that demineralizes enamel.

In our study, we see that only 23.3% of the subjects brushed their teeth twice daily. Christensen LB *et al*. did a study on the oral health of Danish women during pregnancy and reported that 96% brushed their teeth at least twice a day.[9] Similarly, a study was done by Hullah E *et al*. on the oral hygiene habits in pregnant women of North London, in which it was reported that 73.7% of the subjects brushed their teeth twice daily.[10] A study done by Mansour KA and Khalid M on the Saudi pregnant women showed that 77% of the women brushed their teeth twice daily. Similarly in a study done by Honkala S and Al Ansari J on the oral hygiene habits and dental attendance of Kuwait pregnant women where 66% of the subjects brushed their teeth twice daily. Preterm birth (PTB) complicates 12% of all pregnancies in the US.

One-fourth of the women surveyed was found to have tooth decay. Gingival bleeding was found to occur in majority of pregnant women belonging to the third trimester. In case of OHI-S, a higher score of 2.5 was found in pregnant women belonging to second and third trimester. Maternal infection such as periodontal disease can play a role PTB. Eighty percent of American adults are affected with some form of periodontal disease. Similarly, women are more likely to develop gingivitis during pregnancy. Gingivitis affects up to 70% of pregnant women. Increases in the rate of both estrogen metabolism by the gingiva and in the synthesis of prostaglandins were found to contribute to the gingival changes observed during pregnancy.[11] Alterations in progesterone and estrogen levels have been shown to affect the immune system and both the rate and pattern of collagen production in the gingiva. Both of these conditions reduce the body's ability to repair and maintain gingival tissues.

Conclusion

From this study, we can conclude that there is a lack of dental knowledge and practices among pregnant women. Educating women to maintain good oral health is fundamental in reducing dental disease. Apart from benefiting the pregnant women without any complications it also imparts good health to the fetus during the gestational period.[12]

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Conflicts of interest

There are no conflicts of interest.

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