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ASSESSMENT OF ORAL HEALTH AWARENESS AMONG PREGNANT WOMEN IN CHENNAI - A CROSS-SECTIONAL SURVEY

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ABSTRACT

Background: Scientific knowledge about oral health among pregnant women determines their oral health status which in turn promotes the health of the offspring. Exploration of scientific literature revealed limited studies assessing the oral health awareness among pregnant women in India. ***Objectives:*** The aim of the present study was to assess the oral health awareness among pregnant women in Chennai based on their educational status. ***Materials and methods:*** One hundred and sixty pregnant women were randomly selected for the present cross-sectional study. A self-designed and pretested questionnaire was used for evaluating oral health awareness among the study participants. The questionnaire responses were tested for statistical significance based on their educational status using chi-square test. ***Results:*** There was statistically significant difference in the awareness regarding mouth rinsing, gum problems, adverse effects of medications and radiation exposure among uneducated, fairly educated and well educated pregnant woman. ***Conclusion:*** The level of awareness about oral health was better among educated pregnant women when compared with uneducated or fairly educated pregnant women. Gynaecologists should emphasize the importance of oral health to pregnant women during the antenatal visits and necessitate regular dental examination through referrals to dental professionals.

KEYWORDS: Awareness, Educational status, Oral health, Pregnant women.

INTRODUCTION

Pregnancy is a unique phase in a woman's life. A pregnant woman undergoes various complex changes in her body during the gestation period. Pregnancy is categorised into three different trimesters, with each trimester having its own function and effect in almost all the vital organs in the body. The first trimester consists of organ formation and differentiation, the second trimester consists of foetal growth and maturation and in the third trimester, completion of foetal growth occurs. The various physiological alterations that occur during pregnancy affect the systems like cardiovascular system, endocrine system, respiratory system, gastrointestinal system, urinary system, etc.[1]

In dentistry, pregnancy is considered as an impediment to dental treatment as any procedure may involve either uncomfortable posture for the patients or exposure to factors that may lead to adverse effects on the foetus.[2] Pregnant women are highly susceptible to certain pathologies in the oral cavity during the antenatal period. This may probably be due to hormones such as progesterone and oestrogen circulating in more quantities in the blood and these hormones have their receptors in the gingiva.[3] Additionally, pregnant women suffer from problems like morning sickness and vomiting which lie as a challenge to the pregnant women in maintaining good oral hygiene. Failure to proper removal of debris from the mouth may irritate the gums much more easily as there is increased capillary permeability due to the influence of oestrogen and leads to periodontitis.[4] Gingival problems if left untreated especially during the third trimester can lead to adverse situations like preterm low birth weight infants as a result of increased cytokine and prostaglandin production.[4] Gastric reflux can lead to erosion of teeth if not taken seriously in the initial stages. There is increased growth of bacteria during pregnancy due to reduced salivary secretion. As a result, there is increased acidity due to fall in pH which may lead to dental caries.[5] Moreover, consumption of certain drugs and exposure to radiation during antenatal period can affect the growth and development of the tissues of the orofacial complex.[6] Thus, it is imperative for regular oral screening of pregnant women during antenatal period.

There is generally poor attendance for regular dental examination among pregnant women which may probably be due to less prioritization to oral health. Increased susceptibility to oral problems coupled with poor attendance among pregnant women may have an influence on the offspring. Scientific knowledge about oral health among pregnant women determines

their oral health status which in turn promotes the health of the offspring. Exploration of scientific literature revealed limited studies assessing the oral health awareness among pregnant women in India. This provided an impetus to conduct the present study. The aim of the study was to assess the oral health awareness among pregnant women in Chennai based on their educational status.

MATERIALS AND METHODS

Collection of Subjects

Ethical clearance was obtained from the Institutional Ethics Committee. The present cross-sectional study was done among 160 pregnant women of 21 to 35 years age belonging to various professions in and around Chennai by simple random sampling. Written informed consent was obtained from the study participants before commencing the study. Oral health awareness was assessed by means of a self-designed pretested questionnaire. The questionnaire was bilingual, having questions in English and Tamil (vernacular language). All the questions were closed-ended. Subjects who were disinterested and showed signs of negative response were not included in the study.

Statistical Analysis

Chi-square test was used to analyse statistical significance across educational status-wise divided groups. A p-value of less than 0.05 was considered to be statistically significant.

RESULTS

A total of 160 females participated in the study. Based on their educational status, they were classified as Category A-Uneducated/School not completed (82), Category B-School completed/Not graduated (19) and Category C-Graduate & Above (59). The results are summarized in Table 1.

Category A comprised maximum study subjects wherein 34 women belonged to the first trimester, 35 to the second and 13 to the third trimester. Category C had the second highest number of subjects with 20 women in the first trimester, 26 and 13 women in the second and third trimesters respectively. Category B had the least candidates with 7, 9 and 11 women in the first, second and third trimesters.

Frequency of brushing did not show any statistical significance among the three groups. Educated women showed better signs of maintaining good oral health. About 59% of women

in Category C brushed twice a day and 55% of women in Category A brushed only once a day. Women in Category C had the highest percentage of rinsing the mouth after every meal and snack, though the results were insignificant. Category B had the highest number of women who never rinsed their mouths after any meal or snack, which was statistically highly significant (p-value= 0.0014). It was found that neither of the categories had awareness regarding flossing. Most of the women in all the three categories did not have the habit of flossing.

More than half of the population in Category C was aware that ignoring oral hygiene during pregnancy can lead to gingival diseases more easily, while 69% in Category A and 63% in Category B said it is not so. This was statistically significant (p-value= 0.0295). All the categories had only few subjects who experienced painful or swollen gums during pregnancy, with Category A having more subjects than others, still insignificant. Similarly, most of the candidates displayed unawareness about periodontitis leading to pre-term low-birth-weight infants. Category C had maximum subjects being aware of this concept while Category A had the lowest which showed statistical significance (p-value= 0.0439).

Majority of the population in Categories A, B and C were very strongly aware that certain medications taken during pregnancy affect the teeth of the child in the foetus and also that radiation will result in adverse effects on the foetus. Significantly, graduates fared well in showing awareness on both the facts in comparison to others (p-value= 0.0082 and 0.0046 respectively).

Consulting a dentist after becoming pregnant at least once was minimal among the entire population. However, Category C recorded an insignificantly better percentage of a dental visit.

Status of Education	Uneducated/School not completed (82)	School completed/Not graduated (19)	Graduate & Above (59)	p-value	Total 160
Which trimester are you in?					
1st	34 (41%)	7 (37%)	20 (34%)	0.655	
2nd	35 (43%)	9 (47%)	26 (44%)	0.932	
3rd	13 (16%)	3 (16%)	13 (22%)	0.618	
How many times do you brush everyday?					
Once	45 (55%)	11 (58%)	24 (41%)	0.192	
Twice	35 (43%)	8 (42%)	35 (59%)	0.124	
More than Twice	2 (2%)	0 (0%)	0 (0%)	0.382	
Do you rinse your mouth after every meal or snack?					
Always	31 (38%)	6 (32%)	33 (56%)	0.053	
Occasionally	40 (49%)	5 (26%)	21 (36%)	0.108	
Never	11 (13%)	8 (42%)	5 (8%)	0.0014	Highly Sigf
How often do you floss?					
Daily	3 (3%)	1 (5%)	3 (5%)	0.902	
Once a Week	12 (15%)	3 (16%)	9 (15%)	0.989	
Never	67 (82%)	15 (79%)	47 (80%)	0.937	
Will ignoring oral hygiene cause more gum infections during pregnancy?					
Yes	25 (31%)	7 (37%)	31 (53%)	0.0295	Sigf
No	57 (69%)	12 (63%)	28 (47%)	0.0295	
Do your gums swell or pain often after becoming pregnant?					
Yes	28 (34%)	4 (21%)	15 (25%)	0.372	
No	54 (66%)	15 (79%)	44 (75%)	0.372	
Can untreated gum diseases cause preterm low-birth-weight infants?					
Yes	12 (15%)	5 (26%)	19 (32%)	0.0439	Sigf
No	70 (85%)	14 (74%)	40 (68%)	0.0439	
Can medications taken during pregnancy cause side effects in the child's teeth?					
Yes	61 (74%)	12 (63%)	54 (92%)	0.0082	Sigf
No	21 (26%)	7 (37%)	5 (8%)	0.0082	
Can exposure to radiation cause adverse effects on the foetus?					
Yes	52 (63%)	11 (58%)	51 (86%)	0.0046	Sigf
No	30 (37%)	8 (42%)	8 (14%)	0.0046	
Have you consulted a dentist atleast once after becoming pregnant?					
Yes	13 (16%)	3 (16%)	19 (32%)	0.054	
No	69 (84%)	16 (84%)	40 (68%)	0.054	

DISCUSSION

The present study was conducted to assess the level of awareness among pregnant women based on their educational status. In our study, only a small fraction of the subjects have visited the dentist at least once after becoming pregnant. A study done by Al-Habashneh et al among general practitioners shows that only 50% of the study population agreed to advise patients to visit a dentist during pregnancy and only 54% thought that tooth and gum problems can affect the outcomes of pregnancy.[7] Thus it clearly indicates that there is no proper guidance for oral hygiene from the medical experts, signalling every dentist that a solution has to be sought.

In a study done by Honkala et al, 94% of the subjects brushed at least once a day and more than two-thirds of the population brushed more than once. In spite of brushing twice, the patients had oral health problems. About 50% of this population had not visited a dentist during their pregnancy. The awareness was lesser in patients who have not visited a dentist

during their pregnancy.[8] This clearly indicates that pregnant women lack proper oral health guidance.

The survey also inferred that educational status of women plays a significant role in creating awareness on the pregnancy related oral manifestations and the necessary precautions that need to be exercised. This is backed up by a survey conducted among pregnant women in Australia by NJ Thomas et al who concluded that lack of knowledge about oral and dental health was strongly linked to women with lower education achievements and lower socioeconomic backgrounds.[9] On the contrary, another survey conducted by HA Alwaeli et al among the pregnant women in Jordan found that educational status and knowledge about periodontal diseases did not have any relation.[10]

Oral health counselling by a dentist during pregnancy and non-pregnancy times may be similar but not one and the same. This is due to the fact that pregnant women undergo various physiological changes and instructions are modified accordingly. A study done by M L Gaffield et al, reported that among those who reported with dental problems, about half of the subjects did not go for dental check-ups during pregnancy proving that educating the patient regarding pregnancy related oral manifestations can lead not only to awareness but also to the betterment of oral health.[11] This was supported by a long term clinical study which states that an early oral health care promotion which if begun during pregnancy can promote and sustain good oral health in children.[12]

CONCLUSION

The level of awareness about oral health was better among educated pregnant women when compared with uneducated or fairly educated pregnant women. However, the knowledge among the educated group was not commendable. There is a definite need to educate all women, with definite modifications according to their educational background, about the vulnerabilities during pregnancy. Oral health education should be combined with general health education by all the maternal health centres so that every pregnant woman benefits a comprehensive health counselling. Gynaecologists should emphasize the importance of oral health to pregnant women during the antenatal visits and necessitate regular dental examination through referrals to dental professionals. Oral health care professionals should take an active and leading role in educating and emphasizing the importance of oral health during antenatal period which in turn promotes the health of expecting mother as well as the offspring.

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