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ORAL HYGIENE AMONG PREGNANT WOMEN;
PRACTICES AND KNOWLEDGE

Dr. Saima Shabbir[1], Dr. Masooma Zahid[2], Dr. Aamna Qazi[3], Dr. Syed Muneeb Younus[4]

1. Consultant Gynaecologist
Kulsoom Bai Valika Hospital Karachi.
2. Consultant Gynaecologist
Sindh Government Hospital Karachi.
3. Resident
4. Resident

Correspondence Address:
Dr. Syed Muneeb Younus
A- 139 Block I
North Nazimabad, Karachi
muneebkazi@gmail.com

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ABSTRACT… Objective: To define the self-reported oral health knowledge, attitudes and oral hygiene habits, among pregnant women getting antenatal care at Kulsoom Bai Valika Hospital Karachi. **Method and Material:** A cross-sectional questionnaire-based survey was conducted at the KVSS Site Hospital antenatal clinic during the period January - June 2013. The data was analyzed using the SPSS for Windows (version 16.0; SPSS Inc. Chicago. IL) statistical software package and was validated visually. **Result:** Most of the respondents revealed a reasonable level of oral health knowledge and positive attitudes towards oral health. However, there were gaps in the oral health knowledge of the women surveyed. The relationship between the level of oral health knowledge and ethnicity (p=0.856), level of education (p=0.079), age category (p= 0.166), and trimester of pregnancy (p=0.219) were not statistically significant. In addition, the women's knowledge and attitude towards oral health was not reflected in their oral hygiene practices. **Conclusions:** There is a need to provide oral health education for pregnant women during antenatal care in order to highlight the significance of good oral health in achieving good health for both the mother and her baby.

Key words: Oral health, knowledge, attitudes, practices, pregnant women

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INTRODUCTION

Pregnancy is a special state for a woman which is associated with concomitant physiological and emotional changes. In the oral cavity, a number of pathologies have been reported among pregnant women[1]. The exaggerated inflammatory response of the gums to bacterial plaque known as pregnancy gingivitis has been accredited to the increased secretion of gestational hormones (especially oestrogen and progesterone) during pregnancy[2-3]. Bacterial plaque is formed about an hour after tooth-brushing and it is the precursor of the two commonest dental diseases i.e. dental caries and periodontal diseases. Its formation can however be prevented by regular tooth-brushing, the use of dentifrices and dental education.

Proper nutrition and healthy lifestyle also play a key role in the general wellbeing of the mother to be[2]. The necessity to eat a balanced diet with a lot of fruits cannot be over-emphasized. Unfortunately the pregnant state may predispose to unhealthy habits. These habits may include a liking for particular types of food groups to the detriment of other essential food groups and frequent unhealthy snacking habits such as licking sweets to curb nausea. The increased consumption of refined carbohydrate will provide a suitable substrate for cariogenic bacteria and may predispose to increased tooth decay in some individuals. The frequent vomiting associated with pregnancy in some women is also known to predispose to the develipment of dental erosion[3]. In addition to these physiological changes is the existence of cultural beliefs which may mitigate proper nutrition and the ability of these women to achieve good oral health. In recent times, the oral health of pregnant women has been gaining more interest because of the suspected association between periodontal diseases and adverse pregnancy outcomes such as premature birth, low birth weight and pre-eclampsia[4-6]. The provision of routine antenatal care is aimed at ensuring general maternal well- being and the subsequent delivery of healthy babies. However, while oral health is now accepted as an important

component of general well-being of pregnant women in developed countries it remains an underrated component in developing countries such as Pakistan. The purpose of the present study was to assess the knowledge, attitude and practices concerning oral health among pregnant women receiving antenatal care at theKulsoom Bai Valika Hospital. The results obtained would serve as baseline information for planning an oral health education programme 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.

METHODS

A self-administered questionnaire based survey was conducted at the antenatal clinic of KVSS Site Hospital between January and June 2013. The questionnaire was developed and pre-tested on 25 pregnant women to allow for refinement of the questions in order to facilitate answering. The minimum sample size was computed using the formula n= z2pq/d2 where p (the prevalence of women with good knowledge) was set at 50%. Thus the computed minimum sample size was 384 subjects. This was increased by 20% to 460 subjects to accommodate attrition. Questionnaires were administered to all consecutive consenting pregnant women who attended the antenatal clinic during the study period. A total of 453 questionnaires were properly completed while 7 questionnaires had several uncompleted sections and were thus discarded.

The questionnaire contained four sections. The first section contained questions on the respondent's socio demographic characteristics such as age, and educational status. There were six questions in the second section evaluating the oral health knowledge of the respondents, four of these questions, had been used in an earlier study[7].

Two questions were on the understanding and causes of tooth decay, and the other 2 were on gum disease. We constructed a "dental knowledge score" by counting the total number of acceptable answers given by the subjects, excluding responses like "do not know" and "no answer". Thus, the dental knowledge score was in an interval scale and ranged from 0 to 6, with a higher dental knowledge score indicating better dental knowledge. The mean score for the respondent's dental knowledge was 3.0. Based on the mean score, the knowledge scores were regrouped into 2 categories: those with good oral health knowledge and those with poor oral health knowledge. Thus a score of 4 and above was graded as good knowledge, while 3 and below was graded as poor knowledge.

The third section contained ten statements concerning the importance of oral health during pregnancy, the importance of retaining natural teeth, dental service utilization, and dental health beliefs were set to explore the subject's attitudes toward oral health. The subjects were asked to indicate whether they agreed with, disagreed with, or had no comment on each of the statements. A dental attitude score was then computed for each respondent by counting the total number of statements to which the respondent displayed positive oral health attitude. The maximum achievable score was 10 with a higher score indicating a more positive attitude. Individuals with scores of 7 and above were graded as having positive attitude to oral health. The fourth section contained questions assessing the respondent's dietary and oral health practices.

The data was analyzed using the SPSS for Windows (version 16.0; SPSS Inc. Chicago. IL) statistical software package and was validated visually. Measures of central tendency were generated for continuous variables and frequency tables generated for categorical variables. For the purpose of analysis the level of education was categorized as low (primary education only), middle (secondary education) and tertiary (post-secondary education i.e. polytechnic and university education).

The chi-squared test of association, and ANOVA test were utilized where appropriate and

associations and differences were considered significant when the p-values were less than 0.05. Logistic regression analysis was done to identify possible factors influencing the oral health knowledge and attitudes.

RESULTS

Sociodemographic features of study participants the mean age and standard deviation of our study population was 31.32 ± 4.318 years (range 20-44 years). Over half (53.5%) of the respondents were Primigravida while the remaining women had between 1 and 5 children.243 (53.6%) women had primary education, 151(33.3%) attained secondary education, 49(10.8%) polytechnic diploma and only eight (1.8%) attended university (Table-I). On the utilization of dental services, 285 (62.9%) respondents reported ever visiting a dental facility.

Age category		
Socio demographic characteristics	**Frequency**	**Percentage**
Unspecified	37	8.6 %
Less than 25 years	39	69.5 %
26 -35 years	315	13.7 %
36 years and above	62	8.2%
Total	453	100.0%
Level of education		
Unspecified	2	0.4%
Primary	243	53.6%
Secondary	151	33.3%
Polytechnic	49	10.8%
University	8	1.8%
Total	453	100.0%

Table-I. Socio-demographic characteristics of study population.

A total of 145(32.0%) reported having heard the term dental caries while 88(19.4%) of the respondents understood the term to mean tooth decay. A smaller proportion of the respondents 34(7.5%) had heard of the term periodontal disease but only 15 of these women knew the term refers to gum disease. A large proportion of the respondents 137(30.2%) consider sugar to be the cause of both tooth decay and gum disease. Table II displays the perceived causes of tooth decay and gum disease among the respondents. Some of the other causes identified by the respondents include cold drinks, cigarette smoking and genetic factors. While they viewed vitamin c deficiency and incessant tooth-picking as probable causes of gum disease. Table II: Perceived causes of dental caries and gum disease.

Variables	**N**	**%**
Perceived cause of dental caries		
Sugar/sweet foods	340	75.1%
Poor oral hygiene	28	6.2%
Others	55	12.65%
Don't know	18	3.85%
Perceived cause of gum disease		
Sugar/Sweet	137	30.2%
Eating hard food	21	4.6%
Bacterial Plaques	28	6.1%
Calculus/tartar	19	4.2%
Poor oral Hygiene	4	0.9%
Do not know	105	25.4%

Table-II. Perceived causes of dental caries and gum disease.

A sizeable proportion of the respondents (186 or 41.1%) could not identify one constituent of toothpaste although 115(25.4%) correctly identified fluoride as a constituent of toothpaste. Most of the respondents (67%) believe that toothpastes are useful mainly for fresh breath while 62% opine that the mouth should be cleaned at least twice daily for optimal oral health (Table III). Table IV provides a summary of the women's views on statements about oral health during pregnancy. A total of 326 women reported consuming fruits four or more times every week, 170 (37.5%) reported consuming vegetables at least four times a week. Conversely» 358 or 85.7% reported consuming confectionery once a week while only 24(5.3%) ingest confectionery more than four times weekly. Regarding their oral hygiene practices, almost all the women (427 or 94.2%) use toothbrush for oral cleaning and 65.1% or 295 clean their mouths once daily while 34.2% clean their mouths two or more times daily (Table V).

Variables	N	%
Perceived benefits of using tooth paste		
Making mouth clean and fresh	307	67.8
Prevent dental decay	126	27.8
Prevent oral cancer	4	0.9
Others	16	3.5
Appropriate number of times one should clean daily to prevent dental disease		
Three times a week		
Once daily		
Twice a day		
Misvak		

Table-III. Respondents views on some oral hygiene practices

	N=453	%
Tools used for tooth cleaning		
Tooth brush	426	94.0%
Misvak	11	2.4%
Others	16	3.6%
Frequency of mouth cleaning		
Once daily	295	65.6%
Twice daily	148	32.9%
More than twice	7	1.5%
Weekly confectionery consumption		
>4times	27	6.0%
2-3times	38	8.4%
Less than once weekly	388	85.7%

Table-V. Oral hygiene habits of study population

Statement	Agree	Disagree	Uncertain
Pregnancy is cause of gum problems	67(14.8)	359(79.2)	27(6.0)
Dental visit are unnecessary during pregnancy	106(23.4)	323(71.3)	24(5.3)
Pregnancy predisposes to tooth loss	43(9.5)	388(85.7)	22(4.9)
Every painful toot should be removed	145(32.0)	285(62.9)	23(5.1)
Fruits and vegetables have no effect on teeth and gum	142(31.3)	289(63.8)	22(4.9)

Table-IV. Responses to some of the statements on oral health during pregnancy

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 unfavorable pregnancy outcomes. This is important in Pakistan because of the high maternal mortality rates. The commonest oral disease during pregnancy (i.e. periodontal disease) is preventable by the institution of simple measures such as regular tooth-brushing and flossing. However such positive behavior would be influenced by the individual's oral health knowledge and attitudes. This study was designed to provide a snapshot view of the oral health knowledge attitude and practices of a sample of pregnant women in a Pakistan tertiary health facility. Overall, the respondents in the present survey displayed average oral health knowledge and positive attitudes to oral health as observed in similar studies[8-10] conducted in developed countries. A good number correctly identified the cause of dental decay but only a small percentage knew the cause of periodontal disease. Many respondents incorrectly selected sugar or sweet foods as the cause of periodontal disease. This misconception needs to be addressed particularly because studies indicate that periodontal disease is the commonest dental disease affecting pregnant women in Pakistan. In general, there is still room for improvement in the oral health knowledge of the respondents. The respondents expressed some interesting views about oral health. For instance, a third of the respondents agreed that every painful tooth should be removed and that fruits and vegetable have no impact on the dental tissues. These views are contrary to the principles of achieving good oral health and may be related to cultural beliefs about oral health in the Pakistani society. There is a need to inform pregnant women on the role of good nutrition on oral health as well as the available treatment options for painful gums and teeth in future oral health education sessions.

Overall, most of the women included displayed positive attitudes to oral health which was not surprising considering the fairly good oral

health knowledge displayed. Level of education were observed to be significantly related to the women's oral health attitudes. Thus to validate this result further studies using an evenly distributed population in terms of ethnic grouping and level of education is suggested. Interestingly however, the good knowledge and attitudes displayed were not fully reflected in the women's oral health practices. While a good proportion of the respondents believe that the mouth should be cleaned twice daily to prevent dental diseases less than a third of the respondents actually clean their mouths twice daily. 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.

Limitations

This study is not without limitations. One limitation is its reliance on self-reported data, which is often subject to biases inherent to questions being asked such as recall bias. Another limitation is the use of non-probability method in the selection of study participants. This limits the ability to generalize the results obtained to the larger population. Nonetheless, the results would serve as a veritable tool for designing and specifying appropriate oral health education message(s) for pregnant women receiving antenatal care.

CONCLUSIONS

Although the women surveyed displayed acceptable levels of oral health knowledge and attitudes, the results highlighted important gaps in their oral health knowledge and practices. The provision of oral health education during antenatal care to educate women on the importance of maintaining good oral health is essential. Apart from the benefit to the health of the women, mothers play a crucial role in transferring and demonstrating health habits to their children2-13 therefore pregnant women should be a target group for oral health education. Specific messages to be provided should include information on the causes and prevention of dental caries and periodontal disease. The effect of dental diseases on their pregnancy outcomes and the oral health of their offspring should also be highlighted. The role of fluoride, an important component of many types of toothpaste in the prevention of dental caries should be emphasized.

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