EPIDEMIOLOGY

SELF-REPORTED DENTAL CARE AND DIETARY HABITS OF SAUDI PREGNANT WOMEN IN A PRENATAL CLINIC IN RIYADH

KAWKAB M A AL-TURCK, BDS, MSc

ABSTRACT

To assess the oral health care practices, dental care, and dietary habits of Saudi prenatal women (PNW) attending a prenatal clinic in a teaching hospital in Riyadh, Saudi Arabia . A structured questionnaire was prepared to include information regarding demographic data, medical complications, dental care, past dental treatment and dietary habits. A total of500 PNW were interviewed, and after completion all participants were given oral hygiene instruction and dietary advice. The mean age of the PNW was 29.5 (±5.46) years and 75% were housewives. The majority (79.6%) went for emergency dental care. Just over two thirds (68%) of them reported having restorative treatment as their past dental care followed by extraction among 48% and only 3% had scaling. Cariogenic snacks between meals were consumed by 77.4% of the sample. Nearly two thirds (65%) of the PNW reported having bleeding gum with brushing, 46.4% reported brushing 21 day, and 80% performed no flossing. There is a need to educate and motivate prenatal women on oral health care to prevent dental 1 oral diseases among pregnant Saudi women.

Key words: *Prenatal women, oral health care, dental care, dietary habits.*

INTRODUCTION

Pregnancy is a special event in a woman's life. It changes a woman's body in many ways. Her dietary intake increases because of increased energy need. The increase in dietary carbohydrate intake to meet energy demands may place a pregnant woman at increased risk for caries by providing a suitable substrate for cariogenic organisms.' A study on Saudi pregnant women by Al-Kanhal and Bani[2] revealed that 38% of the women had dietary craving for milk, salty and sour food, sweets and dates. With the consumption of sweet and sour foods, these women are at a higher risk of getting dental caries and dental erosion.

It has been observed that pregnant women did not seem to go for dental care as often as they should and therefore have unmet dental needs. A study' published in year 2001 on pregnant women in different age groups reported that most mothers did not go for dental care during their pregnancy. Another study in year 2000 which evaluated oral health status and treatment needs of 250 pregnant women in Lagos, Nigeria found that 50% required scaling and polishing with oral hygiene instructions and 13.6% required oral hygiene instructions alone'. The oral health of Danish women during pregnancy was studied by Christensen et al and published in year 2003. They reported that 90% of the pregnant women had regular dental care, 96% reported brushing at least twice a day, and about one third of the pregnant women perceived signs of gingival inflammation. They concluded that there is a substantial need for increased awareness of gingival health among Danish women during pregnancy.[5]

Correspondence to: Dr. Kawkab M.A. Al-Turck, Assistant Professor, Dental Health Department, College of Applied Medical Sciences, P.O Box 10219, Riyadh 11433, King Saud University, KSA. E-mail: ammar_malak@yahoo.com

In addition there also seems to be lack of knowledge about oral health by these pregnant women. A recent study reported that pregnant women in general had insufficient knowledge about oral health and that their dietary habits were mainly cariogenic. It was also reported in the same study that during pregnancy women rarely go to see the dentist, especially the less educated ones, and on clinical examination their dental plaque levels were highs.

Gingival disease during pregnancy was reviewed by Klokkevold et al' in the year 2002. They reported that the severity of gingivitis is increased during pregnancy beginning in the second or third month. Patients with mild ginivitis and slight amount of gingival bleeding before pregnancy became concerned during pregnancy about gingiva that is enlarged, edematous and more notably discolored and has an increased tendency to bleed7.

A correlation between periodontitis and pre-term birth and preterm low birth weight infants was suggested by Offenbacher et al.[8] These results were confirmed by another study[9] which found the incidence of preterm low birth weight was 2.5% in periodontally healthy women and 8.6% in women with periodontal disease. Approximately 50% of preterm births were found in women without established risk factors. Those women were found to have moderate to severe periodontal disease. The previously mentioned studies[3,9] indicate the importance of improving the oral health knowledge of prenatal women and provide them with dental services if needed.

In the literature several studies[10-13] have reported on oral health knowledge, dental care practices and dietary habits of Saudi males and females but there is a lack of studies on oral health and dental care of Saudi women during pregnancy. Therefore the aim of the present study was to obtain information regarding oral care practices, dental care and dietary habits of Saudi pregnant women attending a prenatal clinic in a teaching hospital in Riyadh.

MATERIALS AND METHODS

The study was done in King Khalid University Hospital, Riyadh in the prenatal out patients clinic. An oral questionnaire (by interviewing each patient) was prepared and first tried out in a pilot study. After adjustments were made it was carried out on 500 prenatal women (PNW) that were willing to participate in the study. A verbal concent was obtained from all participants.

The oral questionnaire included information regarding demographic data, dental attendance, past dental treatment, oral hygiene habits, and dietary habits of the Saudi pregnant women. After the individual interview, all patients were given oral hygiene instruction using toothbrush, floss and jaw models for demonstration as well as given diet advice to prevent dental caries and erosion.

All data were analyzed using Statistical Package for Social Sciences program (SPSS). Descriptive statistics, frequency tabulation and cross tabulations was used. Chi-square test was used for the comparison analysis, the level of significance was set at $P<0.05$.

RESULTS

The study was conducted in King Khalid University Hospital in the out-patients prenatal waiting room on a total number of 500 prenatal women. The patient's age ranged from 15-45 years, with mean age of 29.54 (±5.46) years. More than half of them (53.8%) were in age group 25-34 years. All were married and only 18% of them was this their first pregnancy. Fifty two percent were in their third trimester, 30% were in their second trimester and 18% in the first trimester (Table 1). Those that were in their second and third trimester of pregnancy had a higher frequency of brushing (once, twice or three times a day) but with no significant differences between them. However, those in the first trimester of pregnancy had a lower frequency of brushing (not every day) and there was a highly significant difference between them and those that were in their second and third trimester of pregnancy (P=0.001).

The majority (72%) of prenatal women did not report having any medical problem. The remaining 28% reported having either diabetes (10%), hypertension (8%), anemia "(6%), or other types of health problems (4%). Most of the women were on multivitamin supplements.

TABLE 1: DESCRIPTION OF THE SAMPLE BY AGE, EDUCATION AND PREGNANCY PERIOD

Characteristics	N	%
Age		
15—24	118	23.6
25—34	269	53.8
35—44	109	21.8
> 44	4	0.8
Education		
illiterate	50	10
primary	140	28
intermediate	60	12
secondary	210	42
college	40	8
Pregnancy Period		
1st trimester	90	18
2nd trimester	150	30
3rd trimester	260	52
Occupation		
housewife	375	75
teacher	35	7
college students	90	18

Education and Occupation

The majority (90%) were school educated, 28% had primary education, 12% intermediate, 42% high school and 8% were college graduates. Three quarters of the women were housewives and 25% were either teachers or college students (Table 1). There were no statistically significant differences found between those that were housewives and those that had an occupation as regards the frequency of brushing or the consumption of sugar between meals (P> 0.05). The same was true for education level.

Dental attendance and reported past dental treatment

More than forty percent (43.6%) of the PNW reported having dental care between one to two years, followed by one fifth (20.4%) reported having dental care between three to five years and (20.8%) more than five years. The majority (79.6%) reported the reason for most dental visits was for emergency dental care.

The reported past dental treatment by the PNW showed that more than two thirds (68%) of the women had restorations, followed by extraction (48%), endodontic treatment (14%), prosthodontic (12%). Orthodontic, and scaling were 3% each. More than half (55.6%) were satisfied with dental treatment they have received in the past (Table 2). Dissatisfaction with current oral health was reported by 64% of the PNW who were complaining of different types of oral problems. Forty eight percent of the women reported having missing teeth, yet only 12% indicated wearing prostheses. Sixty percent indicated the need for scaling and dental prophylaxis, and 35% reported having poor gingival condition. The majority of the PNW expressed their willingness to attend dental/oral care visits if arranged during prenatal care appointments.

Oral Hygiene care and dietary habits

The reported oral hygiene habits of the PNW are summarized in table 3. About three quarters (75.4%) of the pregnant women reported brushing once or twice a day; more than half of them (55.6%) use medium textured tooth brush with regular fluoride toothpaste (82%). The majority (80%) reported they never flossed their teeth. Around half (52%) used miswak chewing stick followed by tooth pick in 30% as an additional aid to clean their teeth. Sixty five percent of the PNW complained of bleeding gum with brushing and 18% reported using mouth wash. The majority (77.4%) reported consuming sweet food / drinks once or twice

TABLE 2: DESCRIPTION OF THE SAMPLE BY REPORTED DENTAL CARE.

Characteristic	N	%
Frequency of care		
3-6 months	76	15.2
1-2 years	218	43.6
3-5 years	102	20.4
> 5 years	104	20.8
Reason for most dental visits		
regular care	102	20.4
emergency	398	79.6
Past dental treatment		
restoration	340	68
extraction	240	48
endodontic	69	14
prosthodontic	58	12
orthodontic	15	3
scaling	15	3

TABLE 3: DESCRIPTION OF THE SAMPLE BY REPORTED ORAL HYGIENE CARE HABITS.

Characteristics	N	%
Tooth brushing frequency		
1/day	145	29
2/day	232	46.4
> 3/ day	92	18.4
not every day	31	6.2
Type of tooth brush		
soft	127	25.4
medium	278	55.6
hard	93	18.6
electric	2	0.4
Type of tooth paste		
regular (with fluoride)	410	82
desensitizing	83	16.6 .
tartar control	7	1.4
Flossing frequency		
never	400	80
infrequent	64	12.8
1/day	20	4
2/day	16	3.2
Dental aids		
miswak	254	52
tooth picks	150	30
mouth wash	90	18

a day between meals. Sour food / drinks between meals were consumed once or twice a day as reported by 18.5% of the prenatal women.

DISCUSSION

The present study comprised 500 Saudi women during pregnancy. This may reflect a representation of oral care ofpregnant women in an Arabian community. The oral questionnaire was carried out in the prenatal waiting room because it was convenient to pregnancies1 patients in that setting. Some patients were anxious while waiting for their appointment however most were cooperative.

The results of this study revealed that pregnant women in their second and third trimester of pregnancy had a higher frequency of brushing than those in their first trimester (P = 0.001). This may be due to feeling of nausea and vomiting that commonly occurs in the first few months of 70% of pregnanciesl.

The majority (82%) of women in this study were in their second or third trimester of pregnancy, and it has been reported mat some inflammatory changes are more evident during this period[7,14]. This may explain why almost two thirds of these women reported having bleeding gum, and more than one third reported having poor gingival condition. In our study self reported gingival disease was higher (65%) than that reported by Danish prenatal women[3] in which the majority were also in their second and third trimester yet only 30% perceived signs of gingival inflammation and 15% reported having poor gingival condition. They also had better oral hygiene care (brushing and flossing) compared to Saudi pregnant women.

The most frequently reported dental treatment received by these prenatal women was restorations. To help prevent further dental caries and recurrent decay these prenatal women must take steps to reduce the frequency of the cariogenic diet they are consuming, 77.4% of these women liked sweet food/drinks and many reported they consumed sweet snacks in between meals putting them at risk of dental caries. Therefore dentawomen4,6 education is vitally important for these prenatal women to improve their knowledge on how to prevent it not just for themselves but also for their offspring.

About two thirds (65%) of these women complained of having bleeding gums although most of them reported they brushed their teeth once or twice a day. It maybe that they were not effectively brushing. Other studies also show neglect in oral hygiene in prenatal women[4'6]. Therefore it is important to educate and motivate pregnant women so that they brush their teeth effectively, use dental floss and brush weir tongues as well as educating these women on the cause of periodontal disease. The present findings are in agreement with previous studies of Saudi female adults[10], except for higher percent of reported gingival inflammation among the women in this study.

It was interesting to find that half of these prenatal women reported they preferred to use miswak chewing stick, and tooth picks as additional dental hygiene aids. Miswak has many beneficial properties, and its use should be encouraged especially if used as an additional aid as this may help in improving the

oral hygiene of these women. These women can be shown how to effectively use miswak for cleaning their teeth.[16]

In recent years prenatal oral health has become an integral part of prenatal care because of the correlation of periodontitis and preterm birth and preterm low birth weight" as well as the recent information linking oral health of the mother to that of the child[1,17]. A two-stage approach is suggested to have prenatal women address their own oral health needs and provide them with skills and information to maintain oral health through the pregnancy as well as address the oral health of the child. The women in our study were informed about the importance of improving their oral health and generally were interested to improve their knowledge.

An oral health policy should be made to provide dental health education to all prenatal women. Maternal oral health considerations should focus on the importance of periodontal health and reduction of bacterial load to reduce likelihood of transmission'. Evidence indicates that improving maternal oral health during pregnancy leads to reduction in salivary streptococcus mutans in the offspring[18]. Results of a six year study[19] support and emphasize the importance of preventive interventions in mothers from the time of their pregnancy in order to obtain a long-lasting caries preventing effect in the children. Therefore prenatal women should be educated on the role they can play in providing a healthier dentition for themselves as well as for their future child.

In conclusion there is a need to improve the oral health knowledge and oral health care habits of Saudi prenatal women to prevent dental/oral diseases and encourage them to have regular dental care to prevent farther disease. Obstetrician and family practitioners should recommend oral examination early in pregnancy to all their prenatal patients. Three dental appointments made for prenatal women during their pregnancy may be beneficial. An appointment in me first, second and third trimester as it helps in emphasizing good OHI, reinforcing good diet and providing dental treatment if needed. The dental hygienist is an appropriate member of the dental team that can motivate prenatal women to achieve good oral hygiene practices, prevent caries and erosion, providing preventive measures as well as non-surgical periodontal care such as scaling and polishing which was requested by sixty percent of the pregnant women in the present study. Prenatal dental counseling and dietary advice should be encouraged early in pregnancy. Prenatal dental counseling should involve a thorough examination of the mother's periodontal tissues and attention to reduction of gingival inflammation. Nutrition and diet are important areas of a preventive program for the mother and the fetus. With respect to dental development, a thorough understanding of change in nutritional requirements during pregnancy and lactation is essential for good dental health[20]. The second trimester may be the ideal time for treatment of dental needs for a pregnant women.

ACKNOWLEDGMENT

My thanks are due to the staff in King Khalid University Hospital for their help and cooperation, the dental hygiene students in the Dental Health Department, College of Applied Medical Sciences and to the prenatal women that participated in the study and last but not the least to my sons (Ammar and Mohammed) for typing the manuscript.

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