Original Study

ORAL HEALTH STATUS AMONG PREGNANT WOMEN AT HAIL CITY

Awadh Ali Alazmi[1], Intisar Lafi Alanazi[1], Maha Mukhtar Alazmi[1], Khalid Safaq Alshammari[2], Bader Mordi Alenazi[3]*

[1] *Faculty of Dentistry, Hail University, Hail, KSA*
[2] *General Dentist, King Salaman Hospital, Hail, KSA*
[3] *Periodontist, King Salaman Hospital, Hail, KSA*

ABSTRACT

Background: Pregnancy is defined as a natural procedure specified by physiological alterations, such as fluctuating hormones. These changes make the pregnant woman prone to oral infections including pregnancy gingivitis, periodontitis, and oral pyogenic granuloma. The existing evidence indicates that inadequate oral health care during pregnancy can have negative effects on both mothers and their newborns. Unfortunately, it is widely observed that many women with obvious signs of oral disease did not visit a dentist before, during, or after pregnancy. Aim: This study attempted to assess oral health status among pregnant women at Hail city, Saudi Arabia.

Methods: The present study was conducted by descriptive cross-sectional method in Hail City, where all married women who had history of previous or current pregnancy were selected for the purpose of this study. Reasonable samples, about 154 women who fulfilled the inclusion criteria were selected. Self-designed (validated) questionnaires were used for data collection that consisted of two parts: Part one covered demographic and personal characteristics of participants, while, part two covered variables related to oral health and dental problems.

Results: About 154 married women were participated in this study. 51% of them were pregnant, 16% were in the 1st trimester, 18% in 2nd trimester, while only 13% were in the last trimester. This study indicated that the prevalence of dental and periodontal problems during previous pregnancies was 59%, while it represents 36% during current pregnancy. The study also showed that about 60% of participants had visited a dentist before pregnancy for some reasons including toothache (29%), filling (27%), check-up (21%), or scaling (14%); only 33% of participants had visited a dentist during pregnancy, that the main reasons were, lack of need, lack of time, or thinking that the baby or herself may be damaged, respectively 41%, 14%, and 32%; most of the participants (92%) had visited a dentist at least once during the last three years, and the main reasons include tooth caries (49%), routine appointment (25%), or gingival bleeding (6%). Finally, the current study found that only 53% of participants were oriented and educated regarding to oral health, the main source of oral health education was Dentist, Physician or nurse, 72%, 21%, and 7% respectively.

Key words: Pregnant women, Dental problems, Hail City, Saudi Arabia.

Introduction

Pregnancy is defined as a natural procedure specified by physiological alterations, such as fluctuating hormones. These changes make the pregnant woman prone to oral infections including pregnancy gingivitis, periodontitis, and oral pyogenic granuloma. [1] Pregnancy causes hormonal alterations that can increase the risk of developing oral diseases [2]. These changes, such as increased levels of estrogen and progesterone and eating habits added to oral hygiene neglect can implicate in increased risk of diseases such as caries as well as periodontal disease [3]. In this period, maternal periodontitis has been associated with pregnancy complications such as preeclampsia, preterm birth, and low birth weight [4].

Pregnancy gingivitis, benign gingival lesions, tooth mobility, tooth erosion, dental caries, and periodontitis are several common oral problems during pregnancy. Oral health is a significant issue affecting the general health of both pregnant woman and her infant [5]. Evidence indicated that inadequate oral health care during pregnancy can have negative results for both mothers and their newborns [6].

Unfortunately, it is widely observed that many women with obvious signs of oral disease did not visit a dentist before, during, or after pregnancy [7]. Some pregnant women were afraid that they or their embryos might be harmed by dental treatment, while, others considered poor oral health condition during pregnancy as normal. Oral problems and their complications during pregnancy can be hindered by appropriate knowledge, attitude, and behavior of pregnant women [8].

Dental treatment for expectant women has still been affected by myths, beliefs and negative attributes that cause them not

to take necessary oral health measures during this period. The main reasons were reported as follows: the suspicion regarding treatment during pregnancy, risks related to fetus formation and the low perception of treatment needs. Above these all, they also reported: be offing afraid of the dentist, the probability of feeling pain and discomfort, the dental high speed drilling noise as well as the belief that pain is a pregnancy-associated fact. All of these are helpful issues which impair seeking for dental treatment [1, 9]. In addition, some dentists' fear in the treatment of pregnant women results that these dental professionals often postpone treatment to the post-natal period, which can cause oral health deterioration and therefore damage to the health of both pregnant woman and her baby [10].

Good interaction among different professionals during prenatal care is of extreme significance in order to decide what the best intervention periods are and what processes can be safely carried out at each pregnancy period, including drug use [11].

Mother's oral health behavior during pregnancy, such as dental visits, oral hygiene, and consumption of sweets have an important impact on their oral health during pregnancy and on their children's oral health in the future. Expectant women should be suggested to perform routine brushing and flossing, to avoid consuming excessive amounts of sugary snacks and drinks, and to visit a dentist during pregnancy [12]. Pregnant women may not be informed about the impacts of their oral health on the fetus and their pregnancy outcomes. Several studies have shown that pregnant women had negative attitude towards their oral health care and dental care utilization in pregnancy period [13]. Patients and dentists usually avoid dental treatment during pregnancy because of the lack of clinical guidelines for dental management in pregnancy, lack of practice standards, and anxiety about fatal safety during dental procedures. Although oral health in pregnancy is an important issue, few epidemiological studies have reported clinical oral health indices in the population [14].

Study Objectives:

1. To measure the oral health status before and during pregnancy
2. To identify the dental problems occurring during pregnancy
3. To determine the knowledge of women related to their oral health during pregnancy
4. To assess the attitudes of women about their oral health during pregnancy
5. To specify the practices and behavior of women about their oral health during pregnancy

Methods and Subjects:

Study Design: Descriptive cross-sectional study

Study Population: Married women who have history of previous or current pregnancy

Study Samples: A reasonable sample, about 154 women who fulfill the inclusion criteria were selected.

Data Collection Tools: Self-designed (validated) questionnaires were used for data collection that consisted of two parts; Part one covered demographic and personal characteristics of participants, while, part two covered variables related to oral health and dental problems.

Inclusion Criteria: The participants were, Saudi women, who had history of previous or current pregnancy and resided at Hail District.

Data Management and Analysis: After reviewing and coding the collected data, it was analyzed using Statistical Package for Social Sciences (SPSS 24), where descriptive statistics such as frequency and percentage for qualitative variables and mean and SD for quantitative variables were calculated, while advanced analysis such as Chi-square, ANOVA and t-test where applicable were used to compare between dependent and independent variables.

Ethical Consideration: This study's proposal was approved by the ethical committee at Hail university, all ethical issues were considered during the process of it, and all participants filled out the informed consent before participation and were informed about the objectives of this study and their rights to withdraw from study when needed; they were also informed about the confidentiality and privacy issues.

Results:

As mentioned in (Table 1), half of the participants were within the age range of 31 to 40 years old; majority of them (70%) had secondary certificate, 60% were employed, less than half of them (46%) had medium monthly income level and most participants (91%) were resident in urban areas. Only 51% of participants were pregnant, 16% were in 1st Trimester, 18% in 2nd Trimester, while only 13% were in the last Trimester (Table 2). The prevalence of dental problems during previous pregnancies was 59%, while it represents 36% during current pregnancy (Table 3). Majority of participants used tooth brushing one time per day 56% or more than one time 42%; the most preferable oral hygiene methods among participants was mouth wash, dental floss or

tooth brushing, 36%, 26%, or 12%, respectively, while about 15 % of participants never used any oral hygiene methods (Table 4). About 60% of participants had visited a dentist before pregnancy, main reasons were toothache (29%), filling (27%), check-up (21%) or scaling (14%), (Table 5). Only 33% of participants had visited a dentist during pregnancy, the main reasons were lack of need, lack of time, and thinking that the baby or her-self may be damaged, respectively 41%, 14%, and 32% (Table 6). Most of participants (92%) had visited a dentist at least one time during the last three years, the main reasons included tooth caries (49%), routine appointment (25%), or gingival bleeding (6%), (Table 7). About 61% of participants think they need dental treatment, while most of needed treatment varies from Restoration (18%), Caries (13%) and Pain management (9%) (Table 8). Nearly half of participants (53%) classify their oral health status as good (39%) or excellent (14%), (Table 9). Only 53% of participants were oriented and educated regarding the oral health, the main source of oral health education was dentist, physician, or nurse, 72%, 21% and 7%, respectively (Table 10). The mean of missing teeth was 2 and SD was equal 2, while the mean of filled teeth was 4 and SD was equal to 2 as mentioned in (Table 11).

		Fr.	%
Age in Years	> 30	49	31.8
	31 - 40	77	50.0
	41 - 50	20	13.0
	> 51	8	5.2
Educational Level	Primary	9	5.8
	Intermediate	27	17.5
	Secondary	103	66.9
	University Degree	15	9.7
	Post Graduate	9	5.8
Occupation	Unemployed	93	60.4
	Employed	61	39.6
Monthly Income Level	Low	32	20.8
	Medium	71	46.1
	High	37	24.0
	Not Applicable	14	9.1
Residence Area	Rural	140	90.9
	Urban	14	9.1

Table 1: Demographic Characteristics of Participants
N = 154

		Fr.	%
Current Pregnancy	1st	13	8.4
	2nd	15	9.7
	3rd	15	9.7
	4th	22	14.3
	Greater than 5	14	9.1
	Not Applicable	75	48.7
Pregnancy Stage	1st Trimester (Less than 3 Months)	25	16.2
	2nd Trimester (3 To 6 Months)	28	18.2
	3rd Trimester Greater than 6 Months	20	13.0
	Not Applicable	81	52.6

Table 2: History of Participants related to Number of Pregnancies' and Pregnancy Stage
N = 154

		Fr.	%	Total
Dental Problems during Previous Pregnancies	Yes	91	59.1	154
	No	63	40.9	
Dental Problems during Current Pregnancy	Yes	27	36.0	76
	No	49	64.0	

Table 3: Suffering any Dental Problem during Previous or Current Pregnancy
N = 154

		Fr.	%
Tooth Brushing	None	5	3.2
	Once/Day	84	54.5
	More than Once/Day	65	42.2
Oral Hygiene Methods	Dental Floss	40	26.0
	Tooth Brushing	19	12.3
	Mouth Wash	56	36.4
	Tooth Picks	8	5.2
	Other	1	.6
	Other	7	4.5
	None	23	14.9

Table 4: Oral Health Practices and Methods among Participants
N = 154

		Fr.	%
Dentist Visit before Pregnancy	Yes	93	60.4
	No	61	39.6
	Check-up	32	20.8

Reasons for Visit before Pregnancy	Filling	42	27.3
	Gum Problems	6	3.9
	Prosthesis	6	3.9
	Scaling	22	14.3
	Tooth Picks	1	.6
	Toothache	45	29.2

Table 5: Dentist Visit before Pregnancy and Main Reasons for Visiting
N = 154

		Fr.	%
Dentist Visiting during Pregnancy	Yes	50	32.5
	No	104	67.5
Reasons for not Visiting during Pregnancy	Lack of Need	63	40.9
	Lack of Time	22	14.3
	Being Afraid of the Dentist	10	6.5
	Financial Reasons	10	6.5
	My Baby or myself May be Harmed	49	31.8

Table 6: Dentist Visit during Pregnancy and Main Reasons for Visiting
N = 154

		Fr.	%
Have you ever been to the dentist?	Yes	141	91.6
	No	13	8.4
If yes, how long?	Less than a Year Ago	76	49.4
	1 to 2 Years Ago	31	20.1
	3 or More Years Ago	25	16.2
	Not Applicable	22	14.3
If yes, why?	Tooth Caries	76	49.4
	Gingival Bleeding	9	5.8
	Routine Appointment	38	24.7
	Not Applicable	31	20.1

Table 7: The Status of Dentist Visiting in the Last Three Years and Reasons for Visiting
N = 154

		Fr.	%
Do you think you need dental treatment nowadays	Yes	94	61.0
	No	54	35.1
	Missing	6	3.9
If yes, why?	Caries	20	13.0
	Dirty Tooth	4	2.6
	Sensibility	6	3.9
	Inflammation	9	5.8
	Pain	12	7.8
	Restoration	27	17.5
	Root Fragments	7	4.5
	Other	19	12.3
	Not Applicable	50	32.5

Table 8: Participants Thinking about Need to Dental Treatment
N = 154

		Fr.	%
How would you classify your oral health?	Very Bad	3	1.9
	Bad	12	7.8
	Medium	57	37.0
	Good	60	39.0
	Excellent	22	14.3
How would you classify your teeth and gum appearance?	Very Bad	2	1.3
	Bad	9	5.8
	Medium	44	28.6
	Good	75	48.7
	Excellent	24	15.6
How painful have your teeth and gums been lately?	None	52	33.8
	Little	36	23.4
	Some	51	33.1
	Very Much	15	9.7

Table 9: Evaluation of Overall Oral Health, Teeth and Gum Appearance from the Participants Point of View
N = 154

		Fr.	%
Have you been oriented about how to prevent oral health difficulties during pregnancy?	Yes	81	52.6
	No	73	47.4
If yes, what is the source?	Dentist	111	72.1
	Nurse	10	6.5
	Physician	33	21.4

Table 10: Orientation related to Oral Health
N = 154

	Number of Missing Teeth	Number of Filled Teeth
Mean	2	4
SD	2	2

Table 11: Mean and SD of DMFT and Filled Teeth
N = 154

Discussion

Pregnancy is defined as a natural procedure specified by physiological alterations, such as fluctuating hormones. These changes make the pregnant woman prone to oral infections including pregnancy gingivitis, periodontitis, and oral pyogenic granuloma. [1] The current study showed that half of the participants were within the age range of 31 to 40 years old, majority of them (70%) had secondary certificate, 60% were employed, less than half of participants (46%) had medium monthly income level and most participants (91%) resided in urban areas, only 51% of participants were pregnant, 16% were in the 1st trimester, 18% in the 2nd trimester, while only 13% were in the last trimester. It also indicated that the prevalence of dental and periodontal problems during previous pregnancies was 59%, while it represents 36% during current pregnancy. Dental care during pregnancy benefits both the mother's and the baby's quality of life [9]. However, the expectant women’s dental care has not yet gained the merit it deserves. Many factors such as their insecurity and dental treatment fear added to and the lack of health team interaction impair the fulfillment of women's health care during this period [2].

Dental and periodontal problem proved to be prevalent in the population, i.e. in 88.4% of the women surveyed. This condition was also observed in other studies [3] which highlights the fact that this a common oral change at this time. Interestingly, 75.5% of pregnant women presented mild disease, a situation that could have been controlled or even prevented by appropriate preventive measures applied during prenatal dental care [10].

Our study also showed that about 60% of participants had visited a dentist before pregnancy; the main reasons were toothache (29%), filling (27%), check-up (21%) or scaling (14%), only 33% of participants had visited dentist during pregnancy, and the main reasons were, lack of need, lack of time, and the baby or herself may be harmed , respectively 41%, 14%, and 32%. Most of the participants (92%) had visited a dentist at least once during the last three years; the main reasons included tooth caries (49%), routine appointment (25%), or gingival bleeding (6%).

In order to establish proper healthy habits and hinder oral diseases, a dentist plays a significant role during dental prenatal care. A similar study conducted by Luciana Luz in 2016 indicated that most of pregnant women (91.8%) did not seek the dentist during pregnancy, which must be analyzed from different perspectives; health professionals play an important role in the development of prenatal service care, providing specific guidance and advice for pregnancy and childbirth for the woman and her companion [14].

Our study also found that about 61% of participants think they need dental treatment, while most of needed treatment varies from restoration (18%), caries (13%) and pain management (9%). Similar article mentioned that pain was the main reason reported by those pregnant women attending the service due to periodontal disease, although the majority reported not receiving dental guidelines on how to prevent oral health problems. During pregnancy some predisposing conditions to periodontal disease are seen, such as oral hygiene neglect and dietary changes [15].

Nearly, half of the participants (53%) classified their oral health status as good (39%) or excellent (14%). A previous study conducted in 2015 by Kim A. indicated that 58.8% of women rated the health of their teeth and gingivae as excellent or good, while, 41.1 % reported having fair or poor oral health [16].

Our study indicated that only 33% of participants had visited a dentist during pregnancy, the main reasons were, lack of need, lack of time, and feeling that the baby or herself may be damaged, respectively 41%, 14%, and 32%. These findings were supported by previous studies conducted in 2015 reflecting that dentists' behavior concerning pregnant women's care may result from being afraid of any harm to the mother or fetus and insecurities about procedures [17].

The current study also found that only 53% of participants were oriented and educated regarding the oral health, the main source of oral health education was dentist, physician or nurse, 72%, 21%, and 7%, respectively. Therefore, educational hygiene practices and oral diseases prevention measures are essential. It was noted that among the pregnant women studied most of them reported either not knowing or not believing that pregnancy is likely to cause oral problems which suggests their lack of information about the common changes peculiar to this period thus confirming the need for oral health program with pregnant women [18, 19]. The lack of educational programs was identified during the analysis of pregnant women’s oral hygiene habits once most of them reported brushing their teeth three times or more, but did floss as a habit corroborating the Ramos et al [20].

Conclusion:

A high spread of periodontal diseases was observed in addition to several pregnant women's questions with regard to oral health care during pregnancy, with no information

increase concerning prenatal care. The prenatal period is the most appropriate time for preventive action because pregnant women are more eager and responsive to discussions and directly involved with the guidelines to be provided by the health professional about pregnancy and childbirth with a view also to the mother's role in the family.

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Corresponding Author

Awadh Ali Alazmi
Faculty of Dentistry, Hail University, Hail, KSA.

E-Mail: Awadalazmi41 @ gmail.com