



Why do Women avoid Dental Visits During Pregnancy? A Cross-Sectional Survey in Al Madinah, Western Saudi Arabia

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Abstract

Objective: To investigate why women avoid dental visits during pregnancy and to explore the possible association between this attitude and relevant socio-demographic factors. **Material and Methods:** An online questionnaire was distributed to pregnant women during their routine visits to antenatal clinics in Al Madinah, Saudi Arabia. The questionnaire explored socio-demographic factors of age, education, employment status and nationality. It also explored misconceptions/ reasons for avoiding dental visits during pregnancy. **Results:** A total of 360 pregnant women participated, and their mean age was 30.08 years (range=18-52 years, SD=5.96). The most commonly cited misconception/reason for avoiding dental visits was “local anesthesia is not safe during pregnancy”, followed by “transportation is difficult” and lastly, “dental treatment is not safe during pregnancy”, (43.6%, 37.5%, 18.9%, respectively). Illiterate participants were statistically significantly associated with the misconception of “unsafe dental treatment during pregnancy” ($p=0.002$), whereas school-level and unemployed participants were statistically significantly associated with the misconception of “unsafe local anesthesia during pregnancy” ($p=0.02$, $p=0.036$ respectively). **Conclusion:** Pregnant women avoid dental visits mainly due to the misconception that local anesthesia is not safe during pregnancy. Difficult transportation seems to be another important deterrent in preventing pregnant women to visit dentists in this geographic area. Changing the misconceptions should be the starting point in addressing this public health problem and this should involve the three parties involved: pregnant women, oral healthcare providers and obstetric care providers.

Keywords: Pregnancy; Dental Care; Local Anesthesia.

Introduction

Pregnancy is a critical period of life for many women. During this period, there is a potential for deterioration of oral health emphasizing the importance of implementation of a proper oral health program for pregnant women that should start as early as the antenatal period. Unfortunately, there are some myths linked to oral healthcare during pregnancy, and these myths are widely spread not only among pregnant women, but also among a substantial proportion of oral healthcare and obstetric care providers. Low utilization of dental care during pregnancy has been reported [1].

Approximately 30-60% of pregnant women consult their dentist during pregnancy in the western world [2,3]. While in developing countries dental attendance during pregnancy was estimated to be ranging from a low 7% to a high 50% [4,5]. This is partly due to wrong beliefs of women like considering that poor oral health is the norm during pregnancy, or that dental treatment could harm the unborn baby [6]. Cost of dental treatment, and lack of public awareness of the importance of dental health, represent other barriers for oral healthcare during pregnancy [7-9].

Dental care providers, on the other hand, may create barriers to care. A percentage of 77% of obstetrician gynecologists reported that their pregnant patients were denied treatment by dentists [10]. Another survey, of both dental and medical providers, found that most of them rated prenatal dental screening as important, but many had wrong beliefs like the danger that some dental procedures may pose to the pregnant woman like x-rays, periodontal surgery, amalgam fillings, and prescribing analgesics [11].

Such beliefs and attitudes are expected to have serious implications for the health of women and their newborn babies. Poor maternal oral health can increase the risk of adverse pregnancy outcomes including preterm birth, low birth weight, gestational diabetes, preeclampsia, and stillbirth [12]. Moreover, exposing the fetus to the mother's oral pathogens may increase risk of subsequent admission to neonatal intensive care unit [13].

Previous studies in Al Madinah, western Saudi Arabia reported that young women have a high prevalence of dental and periodontal disease [14,15]. However, research conducted on the oral health attitudes and beliefs of pregnant women in this geographic area is scarce. Considering the scarcity of research on this topic and the importance of dental attendance as one of the determinants of oral health behavior, this study was conducted among pregnant women to investigate why they avoid dental visits during pregnancy and to explore the possible association between this attitude and relevant socio-demographic factors.

Material and Methods

Study Design

This cross-sectional study was part of a larger project conducted among pregnant women in Al Madinah, western Saudi Arabia.

Participants

Inclusion criteria were pregnant women aged ≥ 18 years, attending the antenatal clinics of Ministry of Health hospitals and centers in Al Madinah who can read and understand Arabic language. Exclusion criteria were pregnant women aged less than 18 years.

A convenient sample of pregnant women were approached during their routine visits to the antenatal centers and the study was explained to them. Informed consent was obtained prior to handing them a smart phone to complete the online questionnaire with the help and guidance of researchers SM, RG, RH, and AA.

Sample size determination was based on the estimated number of pregnant women visiting the antenatal clinics of Ministry of Health hospitals and centers in Al Madinah area monthly (2000 patients). By using Epidemiological software Epi Info™ (CDC, Centers for Disease Control, Atlanta, USA) a sample of 360 was found to provide between 90% and 95% confidence level at expected frequency of 50% (oral health awareness level) [6], and confidence limit of 5%, based on a design effect (1.0), and one cluster.

Questionnaire

The original study was based on a 21-item questionnaire. The questionnaire was designed by researchers OA, SM, and ND, and it included 3 sections of closed-ended questions. The part pertaining to this study was composed of two sections: a section on personal data of age, occupation (employed or unemployed), educational level (illiterate, school, university or postgraduate), and another section on reasons for avoiding dental attendance during pregnancy. The questionnaire was written in Arabic, entered in Google forms, and a link was created. Validation was performed by distributing the questionnaire to 10 pregnant ladies on two occasions separated by one week. Answers were checked for consistency, and questions were modified when necessary to ensure clarity of all questions.

Statistical Analysis

Statistical analysis was performed using IBM SPSS software version 21 (Armonk, NY: IBM Corp.) to find descriptives and frequencies and also to find the significance of associations between various sociodemographic factors and cited reasons for avoiding dental visitation. Statistical level of significance was set at $p \leq 0.05$.

Ethical Aspects

Ethical approval was obtained from Taibah University College of Dentistry Research Ethics Committee, IRB# 00010037.

Results

A total of 360 women participated in this study. Their mean age was 30.08 years (range= 18-52 years, SD=5.96). Socio-demographic characteristics of educational level, occupation and nationality are presented in Table 1.

Table 1. Socio-demographic characteristics of the study sample.

Demographics	N	%
Age Groups (Years)		
18-29	183	50.8
30-40	165	45.8
41-52	12	3.4
Educational Level		
Illiterate	3	0.8
School	129	35.8
University	203	56.5
Postgraduate	25	6.9
Occupation		
Employed	103	28.6
Unemployed	257	71.4
Nationality		
Saudi	318	88.3
Non-Saudi	42	11.7

Participants stated three misconceptions/reasons for avoiding dental visits during pregnancy. “Dental local anesthesia is not safe during pregnancy” was the most commonly cited statement (N=157, 43.6%), followed by “transportation is difficult” (N=135, 37.5%), and lastly “dental treatment in is not safe during pregnancy” (N= 68, 18.9%).

The analysis between socio-demographic factors and reasons/misconceptions for avoiding dental visits during pregnancy is presented in Table 2. Illiterate participants and school-graduated participants were significantly associated with the misconceptions: “dental treatment is not safe during pregnancy”, and “local anesthesia is not safe during pregnancy” (p=0.002, p=0.02 respectively).

Table 2. Frequency and percent of positive responses of participants to reasons/misconceptions for avoidance of dental visits during pregnancy according to their socio-demographic characteristics.

Socio-Demographics Variables	Dental Treatment is not Safe During Pregnancy N (%)	Local Anesthesia is not Safe During Pregnancy N (%)	Dental Treatment is Safe but Transportation is Difficult N (%)
Age Groups			
18-29	30 (16.4)	79 (43.2)	74 (40.4)
30-40	35 (21.2)	75 (45.5)	55 (33.3)
41-52	3 (25.0)	3 (25.0)	6 (50.0)
p-value	0.445	0.380	0.260
Educational Level			
Illiterate	3 (100.0)	0 (0.0%)	0 (0.0%)
School	19 (14.7)	69 (53.5)	41 (31.8)
University	41 (20.2)	79 (38.9)	83 (40.9)
Postgraduate	5 (20.0)	9 (36.0)	11 (44.0)
p-value	0.002*	0.020*	0.169
Occupation			
Employed	22 (21.3)	36 (35.0)	45 (43.7)
Unemployed	46 (17.9)	121 (47.1)	90 (35.0)
p-value	0.448	0.036*	0.125
Nationality			
Saudi	61 (19.2)	135 (42.5)	122 (38.3)
Non-Saudi	7 (16.7)	22 (52.3)	13 (31.0)
p-value	0.695	0.223	0.399

*Statistically significant association.

Unemployed participants were statistically significantly associated with the misconception: “local anesthesia is not safe during pregnancy” ($p=0.036$). Other socio-demographic factors have not shown statistically significant associations with participants’ responses ($p>0.05$).

Discussion

In January 2015 a project was initiated at Taibah University Dental College and Hospital aiming to investigate oral health of women in the reproductive age. It was noticed that minimal numbers of pregnant women attend for dental care and they do so only for emergency purposes like severe dental pain or facial cellulitis. This study investigated reasons/misconceptions of pregnant women regarding poor dental attendance during pregnancy.

The study sample have all confirmed their avoidance of dental visits during pregnancy, and they cited 3 main misconceptions/reasons. The most commonly cited reason was that “dental local anesthesia is not safe during pregnancy”. This misconception may be attributed to fear of adverse pregnancy outcomes like miscarriage or risk to fetal health. Local anesthetics are the most frequently used pharmaceutical agents in clinical dentistry [16], and they can be used safely in pregnant women.

Some authors recently reported no significant difference in the rate of birth defects of the fetus between pregnant women who were exposed to local anesthetics for dental treatment and those who were not exposed, although 53% of all pregnant women included in this study were exposed to the local anesthetics during the first trimester [17].

Lignocaine and prilocaine are given a FDA category B ranking and, thus, may be considered the safest local anesthetics to give to a pregnant patient. Of these two agents, lignocaine may be considered ideal because of its lower concentration (2%) compared to prilocaine (4%), with the result of less drug being administered per injection. Mepivacaine, articaine and bupivacaine are given an FDA category C, making them a less favorable choice during pregnancy [16]. Among topical preparations, lignocaine is the preferred choice since it has FDA category B as opposed to benzocaine, which has an FDA category C ranking [18].

In contrary to common beliefs vasoconstrictors like epinephrine are advantageous when added to local anesthetics in the case of pregnant women. Vasoconstriction induced by epinephrine delays the absorption of local anesthetics by the mother, allowing the absorption of lidocaine to gradually occur in the maternal systemic circulation, while also allowing blood levels of lidocaine to gradually increase, and also allows the slow transfer of the local anesthetic to the fetus, and increasing its margin of safety [19]. Epinephrine used in the dental setting is of very low concentration, and therefore is unlikely to affect uterine blood flow [18]. Moreover, epinephrine increases the duration of local anesthetics and decreases bleeding at the site of administration and thus its administration is important and justified. [18]

In summary, in the pregnant patient, any amide local anaesthetic is considered safe with the ideal agent being 2% lignocaine with 1:100,000 adrenaline [20]. The recommendation when

performing dental treatments in pregnant women is to consider maintaining the doses of local anesthetics below the maximal permissible dose while aspiration is monitored to make sure that local anesthetics are not injected in blood vessels [19]. Pregnant women with eclampsia or preeclampsia have special consideration when receiving dental local anesthesia. This is partly due to the reduced protein binding of local anesthetics leading to possibility of transfer of a large amount of local anesthetics to the fetus, and the possibility of vasoconstriction inside the uterus due to the included epinephrine reducing the blood flow to the placenta [19].

The second most commonly cited reason for avoidance of dental visits during pregnancy was difficult transportation. Previous studies in this geographic area have indicated that women tend to have poor dental attendance and they visit the dentist mainly for pain relief [21]. Women have also expressed difficulty in getting transportation to their dentists [22]. In Saudi Arabia women mainly rely on male family members for transportation. However, the problem of difficulty in transportation is expected to disappear with the emergence of many smartphone applications that allow women to get pre-booked car transportation services. [14]. Furthermore, women will be allowed in the near future to drive cars in the Kingdom based on a recent royal decree.

A minority of participants believed that dental treatment is not safe during pregnancy. This confirms that knowledge and attitudes of women are changing favorably towards oral healthcare during pregnancy, and indicating that only specific aspects in dental treatment represent a cause of concern among pregnant women.

Illiterate participants and school-graduated participants were significantly associated with the misconceptions: “dental treatment is not safe during pregnancy”, and “local anesthesia is not safe during pregnancy” respectively. This confirms the important role of education in enhancing health attitudes among women. Also unemployed status was significantly associated with the misconception regarding local anesthesia. Employed women are expectedly better educated than unemployed women, and they are supposed to participate in continuing education courses as part of job promotion activities. It is expected that in the future a better picture will be seen for Saudi women in terms of education and employment based on the reports of the WHO that state that Saudi women’s employment rates have risen by 85% from the year 2009 to 2013, and that the literacy rates have increased from 79.7% in 2004 to 85.0% in 2010 [23,24].

Since pregnant women avoid consulting dentists during pregnancy for faulty beliefs, it would be more appropriate to initiate awareness programs in antenatal clinics. For this to be achieved collaborative programs involving obstetric care providers and dental practitioners are needed to address pregnant women of various socio-demographic characteristics, and initiate referrals to dental hospitals affiliated to universities and Ministry of Health.

Providing healthcare for pregnant women should be a good example of integrating the efforts of obstetric as well as oral healthcare providers, and a golden opportunity to reach women who neglect their oral health by poor dental attendance.

Conclusion

Misconception on the risk of dental local anesthesia and difficult transportation represent the most common reasons for avoiding dental visits among pregnant women. Education and employment seem to be two important factors in promoting favorable health attitudes among women.

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