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## **ORIGINAL ARTICLE**

# A 22 year comparison survey of dental knowledge in Al-Jubail antenatal clinic population



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#### KEYWORDS

Dental knowledge; Antenatal clinic; Generational comparison **Abstract** *Objective:* To analyze and compare dental knowledge between two generations of pregnant women attending the same antenatal clinic in Al-Jubail, Saudi Arabia.

Methods: A cross sectional self administered questionnaire was conducted among 252 pregnant women in three different antenatal clinics. Data were analyzed using SPSS (v. 21), p value < 0.05 was considered statistically significant.

*Results:* Most surveyed women were knowledgeable about dental health issues, although a large percentage did not visit dental clinics regularly during pregnancy. Results showed a decline in dental knowledge, compared with data collected 22 years ago. Pregnant women participating in the current survey had more dental problems and underwent more dental procedures than did those participating in the previous survey.

Conclusions: Results of this study show a decline in dental knowledge and oral health in pregnant women of the current generation, compared with those of the previous generation. Antenatal clinics should educate pregnant women more about the relationship between good oral and fetal health.

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#### 1. Introduction

Pregnancy is one of the most important stages in a woman's life. In this stage, a woman feels that she has become responsible not only for her health, but also for the health and well-being of the fetus growing in her. Pregnancy makes a woman more aware of all health issues and how they might relate to or be predisposing factors for her child's future

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health. Pregnant women thus become more receptive to all health information.

Antenatal clinics educate pregnant women about relevant health issues, but clinicians unfortunately neglect the importance of oral health. Furthermore, several studies have documented low utilization of antenatal dental services (Gaffield et al., 2001; Mangskau and Arrindell, 1996). Some statistics show that the majority of pregnant women do not visit a dentist during pregnancy (Lydon-Rochelle et al., 2004; Marchi et al., 2010). In addition, the underlying belief among pregnant women that pregnancy and fetal health and nutritional requirements lead to tooth loss and many other oral health issues has been documented. Patients' lack of knowledge regarding oral health care during pregnancy may be a

contributing factor to the low dental visitation rate (Timothe et al., 2005). Moreover, on some occasions, dental health providers choose to postpone major dental procedures until after delivery to avoid health risks to the mother and child; this behavior intensifies the belief that dental health care might pose risks to the fetus (Gaffield et al., 2001; Lydon-Rochelle et al., 2004). On the other hand, observational studies have shown significant correlations between poor oral health, particularly periodontal disease, and adverse pregnancy outcomes such as preterm birth and low birth weight (Jeffcoat et al., 2011; Lopez et al., 2005). Hormonal changes during pregnancy have also been shown to induce edema, hyperemia, bleeding in dental tissues, and increased risk of bacterial infection (Leine, 2002: Tanni et al., 2003). These results should be utilized more in antenatal clinics to educate pregnant women and promote oral health care during pregnancy.

In this study, we investigated differences in perceptions of dental health during pregnancy between pregnant women from two generations in the same location. We repeated a survey conducted in 1993 (Assery and Al-Saif, 1993), with some modifications to enable additional data collection. The survey consisted of questions about pregnant women's oral health care knowledge, attitudes, and habits. We conducted the survey in the same antenatal clinic in which the 1993 survey was conducted to reduce differences in variables that may affect the results.

#### 2. Methods

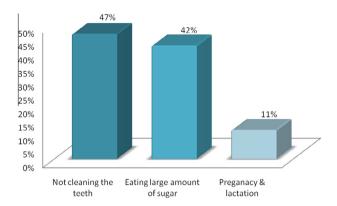
A self administered closed ended questionnaire was used. The questionnaire was divided into four sections, dental health knowledge, personal dental history and habits, current dental status and antenatal care (Appendix A). A total of 300 pregnant mothers were recruited and 252 responsed (84%) response rate. Questionnaire forms were distributed and collected with the help of a female social worker on the same day from the pregnant mothers while waiting in the antenatal clinic. The survey was conducted for 3 months from March 2014 to May 2014.

Descriptive statistics was performed and frequency tables were generated. All categorical variables were analyzed using cross tabulation and chi square test and continuous variables were compared using *t*-test. Statistical analysis was performed using SPSS software (v. 21; IBM Corporation, Armonk, NY, USA).

#### 3. Results

A total of 252 expectant mothers from the Al-Jubail antenatal clinic population participated in the survey. Eighty-three (32.9%) women were aged <20 years, 67 (26.5%) were aged 21–30 years, 65 (25.8%) were aged 31–40 years, and 37 (14.7%) women were aged  $\ge40$  years. The median age range of the respondents was 21–30 years. Sixty-four (25.4%) women were in their first gestation, 71 (28.2%) were in their second gestation, 42 (16.7%) were in their third gestation, and 75 (29.8%) women were in their fourth or more gestation.

Respondents believed that the following factors caused tooth decay: not cleaning the teeth (n=118,47%), eating a large amount of sugar (n=106,42%) and pregnancy and lactation (n=28,11%). The latter percentage was significantly smaller than the percentages of the other two responses (p<0.05; Fig. 1). Almost half (n=125,49.6%) of respondents perceived that pregnancy leads to



**Figure 1** Dental knowledge among pregnant women regarding the causes of tooth decay.

tooth decay; the remaining 127 (50.4%) or respondents believed that it did not. Out of 252 respondents, 117 (46%) respondents believed that negligence in tooth cleaning causes tooth decay in pregnant women, 93 (37%) believed that the fetus draws calcium from the mother's teeth, and 42 (17%) respondents believed that malnutrition affects the oral health of pregnant women (p < 0.05; Fig. 2). The pregnant women indicated the following perceived causes of gum inflammation during pregnancy: negligence in cleaning the teeth and gums (n = 113, 44.8%), pregnancy (n = 90, 35.7%), and malnutrition (n = 49, 19.4%; p < 0.05; Table 1).

Participants believed that tooth cleaning had the following effects on oral health: reducing tooth decay (n=120, 47.6%), maintaining healthy gums (n=106, 42.1%), and no effect on caries prevention or gingival health (n=26, 10.3%; Table 1). The latter percentage was significantly smaller than the percentages of the other two responses (p<0.05). More than two-thirds (n=172, 68.3%) of respondents knew what fluoride was and agreed that fluoride intake is of great importance in preventing tooth decay (Table 2).

Out of 247 respondents (n=115, 45.6%) responded that dental treatment during pregnancy is best performed in the second trimester, followed by the first trimester (n=98, 38.9%) and the third trimester (n=34, 13.5%). Ninety five (37.7%) respondents reported that they obtained dental knowledge from dentists and dental hygienists, followed by television and printed media (n=84, 33.3%) and online internet sources (n=39, 15.5%). Comparison of 2014 with 1991 survey data showed a significant decrease in dental knowledge (means lower scores) (p<0.05). Knowledge that sugar in the diet may contribute to decay and that toothbrushing maintains healthy gums and reduces tooth decay declined by 50%. No significant change was

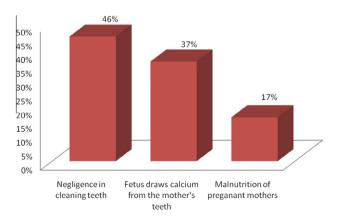


Figure 2 Perception of pregnant women on the effect of pregnancy on their oral health and teeth.

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