Original Article

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Knowledge, Attitude and Practices of Dentists about Oral Health Care during Pregnancy: A Cross-sectional Study from Turkey

Dentistry Section

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ABSTRACT

Introduction: Oral hygiene care during pregnancy is critically substantial. Nevertheless, previous studies indicated that pregnant women uptake less oral health care during pregnancy. There are some reasons that hinder pregnant women receive oral health care. Additionally, dentists are hesitant to treat pregnant women for fear of causing harm to the mother and foetus. Studies have not reported the perception of dentists about oral health care during pregnancy in Turkey.

Aim: The aim of the study was to evaluate the knowledge, attitude and practices of dentists about oral health care during pregnancy.

Materials and Methods: A questionnaire was prepared by reviewing the literature regarding dental care during pregnancy. A total of 210 questionnaire were distributed to dentists in Isparta and Burdur, Turkey and 200 (95.2%) completed surveys were returned. Statistical analyses were performed by chi-square test.

Results: Most of the dentists were knowledgeable about oral health care during pregnancy but had limited knowledge about the safety of radiographs during this period and early childhood caries. Only 27.5% of the dentists were sure about radiographs could be securely taken during this period. Around 48% of the dentists believed that poor maternal oral health can contribute to early childhood decay. The majority of the dentists in this study knew that basic dental treatment is safe during pregnancy (84%) and were aware of the dental procedures that are safe to undertake during this period. The dentists were knowledgeable about the safety of using medications (51.5-100%). The dentists had rather positive attitude towards perinatal oral health (59.5-99.5%). Higher proportions of the dentists stated that they wanted further information about dental care during pregnancy (77%).

Conclusion: The findings from this survey suggest a large consensus among dentists in the management of pregnant women. Nevertheless, further research with more national sample is recommended to confirm these findings. Education programs and practice guidelines on perinatal oral health can be beneficial for dentists to provide dental care during pregnancy.

Keywords: Dental care, Pregnant women, Questionnaire

INTRODUCTION

Oral diseases are the most common health problems in pregnant women due to hormonal variations and changes in their oral flora [1,2]. The oral flora becomes vulnerable to microbial colonisation because of the physiological changes and hormonal variations during pregnancy. Consequently, the incidence of oral and periodontal diseases increases [3]. Clinical studies have reported that poor periodontal health may be positively associated with adverse pregnancy outcomes including preeclampsia, preterm birth and low birthweight and the association is independent of other pregnancy risk factors [4]. Even after the birth, poor maternal oral health can cause early childhood caries via the transmission of saliva infected with bacteria causing dental caries to child [2]. The saliva transmission can occur with saliva-sharing activities, such as tasting food before feeding and sharing toothbrushes. For these reasons, oral hygiene care during pregnancy is critically substantial. Nevertheless, previous studies indicated that pregnant women are less concerned about their oral health care during pregnancy in many countries, even when they have existing dental problems [3,5,6].

There are a number of reasons that hinder pregnant women uptake oral health care such as high cost, lack of health insurance coverage, lack of knowledge regarding the priority of oral health during pregnancy, dental treatment fear and anxiety [7]. Additionally, there is a widespread misconception that women should not receive dental treatment during pregnancy due to concerns about infant safety [7]. Studies have showed a lack of consensus among dentists internationally about the safety of providing oral health care to pregnant women [8-10]. This lack of consensus prevents pregnant women receiving necessary dental care [9]. In many countries, dentists are hesitant to treat pregnant women for reasons including fear of causing harm to the foetus and fear of legal implications [8,9]. In Turkey, it has been reported that although pregnant women were aware about the importance of oral health during pregnancy, they had poor oral health and did not take oral health care enough [11,12].

To our knowledge, there are no studies that have looked at the perception of dentists about oral health care during pregnancy in Turkey. Therefore, the purpose of this study was to evaluate the knowledge, attitude and practice of the dentists about oral health care during pregnancy.

MATERIALS AND METHODS

The study was a cross-sectional study conducted in Isparta and Burdur provinces of Turkey from February 2018 to April 2018. Ethics approval was obtained from Suleyman Demirel University Ethics Committee (2018-27/3). Before survey, the required permissions were obtained from the head physicians of the hospitals. A total of 210 dentists work in Isparta and Burdur. The number of dentists was obtained from provincial health directorates. A questionnaire was distributed to all the dentists. Only 10 dentists did not accept to fill the questionnaire. A total of 200 dentists who participated in the survey were included in the study. The response rate was 95.2%. An informed consent was obtained from the dentists who were willing to respond to the questionnaire to publish the results.

The questionnaire was developed by reviewing the literature regarding dental care during pregnancy. The participated dentists had two choice on the questions (true/false or agree/disagree). The majority of the survey items were derived from existing questionnaires used in previous studies relating to perinatal oral health [1,8,9,13]. The questionnaire consisted of three parts. In the

first part, data regarding personal information and demographics was collected. The second part involved two-choice closed-end questions (true/false) to assess the knowledge of the dentists about oral health care during pregnancy. The last part involved two-choice closed-end questions (agree/disagree) to evaluate the attitudes and practices of the dentists related to oral health in pregnant women. The questionnaire was evaluated with a pilot study to check the perception, accuracy and validity of the survey questions. The questionnaire finalised, after the proposed revisions were made.

Statistical analyses were performed with the SPSS Program, version 20.0 (Statistical Package for the Social Sciences; SPSS, Chicago, IL, USA). Demographics were presented as mean±standard deviation for continuous variables and frequencies (percentages) for categorical variables, respectively. The chi-square test was used to determine the significance levels between categorical variables. A significance level of 5% was used throughout.

RESULTS

Two hundred dentists participated in the study. Responses were received from 49.5% (n=99) male and 50.5% (n=101) female dentists [Table/Fig-1]. The mean age for the dentists was 39.3±10.7 years (range, 25-71). They had an average of 15.8±10.6 years of dental experience. Of dentists who responded, 50.0% (n=100) worked in the private hospital, 40.0% (n=80) in a public setting and 10.0% (n=20) in a faculty of dentistry. Around 28.5% (n=57) of the participating dentists had a specialisation field (oral radiology, oral surgery, periodontology, endodontics, orthodontics, prosthodontics). All of the dentists treated one pregnant woman per month at least and most of them (85.0%) treated average number 1-5 pregnant woman per month. Only 37% of dentists (n=74) noted that they had received some formal education/training on oral health care during pregnancy [Table/Fig-1].

Demographics	Mean (SD)
Age (years)	39.3 (10.7)
Years of experience	15.8 (10.6)
Demographics	n (%)
Gender	
Male	99 (49.5)
Female	101 (50.5)
Work sector	
Public hospital	80 (40.0)
Private setting	100 (50.0)
Faculty of dentistry	20 (10.0)
Do you Have a specialisation field?	
Yes	57 (28.5)
No	143 (71.5)
What is the average number of pregnant women you would treat per month?	
None	0 (0.0)
1-5	170 (85.0)
6-10	24 (12.0)
>10	6 (3.0)
Have you received formal education/training on oral health care during pregnancy?	
Yes	74 (37.0)
No	126 (63.0)

[Table/Fig-1]: Demographic characteristics of the dentists (n=200).

The proportion of correct answers for the 21 knowledge items was rather more [Table/Fig-2]. But, the percentage of some correct answers was lower. Around 48% of the dentists believed that poor maternal oral health can contribute to early childhood decay. Only 27.5% of the dentists knew that it is safe to obtain dental radiographs in pregnant women. Total, 53% of the dentists thought that pregnant women should receive only emergency dental care [Table/Fig-2]. Of dentists who responded, 92% consulted obstetricians before/after dental procedures [Table/Fig-3]. The dentists usually undertook routine treatments such as local anaesthesia, extractions, fillings, root canal treatment, scaling and root planning. Total 99.5% of the dentists advised pregnant women on oral health during a dental visit, and 97.5% advised pregnant women to visit dentists during early pregnancy and after pregnancy. Around 77% of the dentists wanted to get further information about dental care in pregnant women [Table/Fig-3].

Item (correct response as per current evidence and guidelines)	Correct responses n (%)
1. Pregnancy exacerbates existing dental problems (true)	177 (88.5)
2. Calcium will be drawn out of mother's teeth by developing baby (false)	163 (81.5)
3. Poor maternal oral health can contribute to early childhood decay (true)	96 (48.0)
4. Periodontal disease has been associated with preterm delivery and low birthweight (true)	136 (68.0)
5. Women should receive preventive dental care during pregnancy (true)	193 (96.5)
6. Basic dental treatment is safe during pregnancy (true)	168 (84.0)
7. It is unsafe to obtain dental radiographs in pregnant women (false)	55 (27.5)
8. Pregnant women should receive only emergency dental care (false)	94 (47.0)
9. Elective dental treatment should be delayed until after pregnancy (true)	175 (87.5)
10. The second trimester is optimal period for dental care during pregnancy (true)	191 (95.5)
11. These dental procedures are safe during pregnancy	
Local anaesthesia (true)	128 (64.0)
Extractions (true)	122 (61.0)
Fillings (true)	149 (74.5)
Root canal treatment (true)	119 (59.5)
Scaling and root planning (true)	168 (84.0)
12. These medications are safe during pregnancy	
Paracetamol (true)	188 (94.0)
Aspirin (false)	195 (97.5)
NSAIDs (false)	189 (94.5)
Amoxicillin (true)	103 (51.5)
Erythromycin (false)	186 (93.0)
Doxycycline (false)	200 (100.0)

[Table/Fig-2]: Percentage of correct responses to perinatal oral health knowledge items of the dentists (n=200).
True: The item is accurate according to current literatures
False: The item is inaccurate according to current literatures

Attitude and practice	Agree n (%)	Disagree n (%)
1. I consult obstetricians before/after dental procedures	184 (92.0)	16 (8.0)
2. Routine treatments I undertake in pregnant women		
Local anaesthesia	128 (64.0)	72 (36.0)
Extractions	122 (61.0)	78 (39.0)
Fillings	149 (74.5)	51 (25.5)
Root canal treatment	119 (59.5)	81 (40.5)
Scaling and root planning	168 (84.0)	32 (16.0)
3. I broadly advise pregnant women on oral health during a dental visit	199 (99.5)	1 (0.5)
4. I advise pregnant women to visit dentists during early pregnancy and after pregnancy	195 (97.5)	5 (2.5)
5. I am interested in further information about dental care to pregnant women	154 (77.0)	46 (23.0)

[Table/Fig-3]: Attitudes and practice to perinatal health items of the dentists (n=200).

Among demographic factors especially gender showed a significant effect on the knowledge of the dentists about oral health care during pregnancy [Table/Fig-4,5]. The female dentists were more aware that pregnancy exacerbates existing dental problems (p=0.001). The male dentists believed more that calcium will be drawn out of mother's teeth by developing baby (p=0.000). The female dentists knew more that periodontal disease has been associated with preterm delivery and low birthweight (p=0.026). The female dentists agreed more that women should receive preventive dental care during pregnancy (p=0.007). The female dentists were more aware that basic dental treatment is safe during pregnancy (p=0.000). The dentists who didn't receive formal education/training on oral health care during pregnancy consulted more obstetricians before/after dental procedures (p=0.028). The female dentists advised more pregnant women to visit dentists during early pregnancy and after pregnancy (p=0.022).

	Gender	Work place	Specialisation field	Formal education
Item 1	0.001*	0.122	0.091	0.092
Item 2	0.000*	0.059	0.163	0.524
Item 3	0.065	0.055	0.841	0.888
Item 4	0.026*	0.063	0.677	0.175
Item 5	0.007*	0.514	0.085	0.261
Item 6	0.000*	0.059	0.059	0.257
Item 7	0.943	0.122	0.243	0.678
Item 8	0.085	0.120	0.488	0.819
Item 9	0.095	0.150	0.314	0.912
Item 10	0.055	0.150	0.314	0.912
Item 11	0.104	0.206	0.554	0.849
Item 12	0.122	0.100	0.344	0.123

[Table/Fig-4]: The significant levels of the demographic parameters on the frequency of correct responses to perinatal oral health knowledge items of the dentists (p-values).

	Gender	Work place	Specialisation field	Formal education
Item 1	0.128	0.059	0.159	0.028*
Item 2	0.104	0.206	0.554	0.849
Item 3	0.311	0.605	0.527	0.442
Item 4	0.022*	0.077	0.153	0.092
Item 5	0.796	0.063	0.069	0.166

[Table/Fig-5]: The significant levels of the demographic parameters on the frequency of attitudes and practice to perinatal health items of the dentists (p-values).

DISCUSSION

Hormonal and physiological changes occurring during pregnancy make it a peerless but complex period. Appropriate oral health care provided during pregnancy has an impact on the oral health of the mother and the child [13-15]. Therefore, not only emergency but also routine dental care should be provided to pregnant women; however, there is no information about current practices of the dentists in Turkey related to oral health care during pregnancy. The focus of this cross-sectional study was to evaluate the current knowledge, attitudes and practices of the dentists about oral health care during pregnancy. There was no performed study about this subject in Turkey.

In this study, a high percentage of the dentists were knowledgeable regarding oral health care during pregnancy. The percentage was lower in some items [Table/Fig-2]. It is safe to receive not only emergency dental care but also basic dental treatment [9]. But, 53% of the dentists believed that pregnant women should receive only emergency dental care. Poor maternal oral health can increase the risk for early childhood caries through the transmission of saliva infected with Streptococcus mutans that is the bacteria associated with dental caries [16]. Nevertheless, 48% of the dentists thought that poor maternal oral health can contribute to early childhood decay. The correct knowledge of dentists about this subject can contribute to the prevention of early childhood caries. Current perinatal oral health guidelines state that radiographs do not need to be avoided during pregnancy [17]. It is best to take them in the second trimester of pregnancy after all necessary precautions are taken, such as the use of lead apron and avoiding unnecessary exposure; because, the foetus is less susceptible to radiation in the second trimester [8]. However, 72.5% of the dentists believed that it is unsafe to undertake radiograph during pregnancy. Other studies have also reported similar misinformation of dentists in Spain and India on the use of radiographs [18,19]. This misinformation may hinder correct diagnosis and treatment planning.

The majority of the participating dentists were aware of the routine dental treatments that are safe during pregnancy (59.5–84%). Similar findings were reported among dentists in Australia and USA [13,20,21]. In this study, the dentists were also knowledgeable about the safety of using medications like paracetamol and amoxicillin. Moreover, their understanding regarding the unsafety of using medications like aspirin, non-steroidal anti-inflammatory drugs, erythromycin and doxycycline was markedly more than dentists from earlier studies [13,22]. Dentists' perception about use of medications during pregnancy is crucial. Otherwise, the lack of knowledge or misunderstanding about medications can have serious implications for pregnant women and baby [8]. In the present study, the dentists had rather positive attitude towards perinatal oral health. Almost all of the dentist (99.5%) broadly advised pregnant women on oral health during a dental visit. Most of the dentists (97.5%) also advised pregnant women to visit dentists during early pregnancy and after pregnancy. These findings showed that most of the dentists have favourable attitudes toward pregnancy-specific counselling.

According to previous studies, lack of knowledge about oral health care for pregnant women is one of the reasons that dentists delay treatment during pregnancy [9,23]. It was reported that there was a link between dentists' knowledge about safety of dental treatments during pregnancy and number of pregnant patients treated [9,23]. The lack of the knowledge could evoke a need to consult the patient's obstetrician prior to undertaking any dental procedure [24]. Our results showed that although most of the dentists hold the correct knowledge, they consulted the patients' obstetrician before or after dental procedures. Moreover, the dentists who did not received formal education/training on oral health care during pregnancy consulted more obstetricians (p=0.028). A written approval of the obstetrician could make the dentists feel more secure and comfortable. However, it has been stated that there is no need for prior consultation with the obstetrician for performing dental procedures in healthy pregnant women [25].

There was a significant difference in ratio of some correct responses when compared with gender. The female dentists were more knowledgeable and interested about prenatal oral health. As reported in a study, this could be because the survey is relevant to them and they may be concerned about their oral health [13].

LIMITATION

Despite the data presented here, it is necessary to emphasise that this study has limitations regarding the study design. The findings may not be representative of all dentists within Isparta and Burdur. There was a risk of response bias as we were able to personally contact the dentists. The survey could be done with more participants at other places in Turkey. In retrospect, we feel that some of the important questions were missed in the questionnaire, which could otherwise have been added. In spite of the limitations, the study findings have provided a valuable insight into this under-researched subject in Turkey.

CONCLUSION

Despite the dentists' awareness of the evident necessity for dental care during pregnancy, the findings show a need to broaden the knowledge of dentists regarding dental care of pregnant women. The training program on these topics may be required for dentists after graduation in order to increase the knowledge of dentists. The education programs may increase the confidence of dentists in providing required dental care to the pregnant women. Furthermore, the gaps identified in the knowledge and practice of dentists indicates the need of developing evidence-based guidelines on perinatal oral health in Turkey.

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