

# KNOWLEDGE, ATTITUDE AND PRACTISES OF NURSES AND MIDWIVES TOWARDS ORAL AND DENTAL HEALTH CARE DURING PREGNANCY: A CROSS SECTIONAL STUDY

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## ABSTRACT

**Objective:** This study aimed to determine nurses' and midwives' knowledge, views and practices about oral and dental health during pregnancy.

**Methods:** This descriptive, cross-sectional study was conducted on 378 nurses/midwives in Istanbul between 5 and 30 May 2021. The data was collected using the self-administered questionnaire developed by the researchers.

**Results:** The mean age of the participants was 32.89± 8.25 years, 92.1% of the participants stated that pregnant should be guided on ODH, and 86.8% of the participants reported that ODH for pregnant should be a part of prenatal care, but 78% of them did not provide information to pregnant. 56.3% of the participants believed that nurses and midwives have limited contribution to the ODH of pregnant. 28.8% of the participants said that they had sufficient training to inform pregnant about ODH.

**Conclusions:** As a result, it has been determined that health professionals do not have enough knowledge about oral and dental health in pregnancy.

**Keywords:** Dental health; Knowledge; Health professional; Oral health; Pregnancy

## INTRODUCTION

Pregnancy is a period when the risk of oral and dental health problems (ODH) increases due to physiological changes that occur (1). The increasing level of estrogen and progesterone during pregnancy causes changes in the oral flora. This causes females to be more prone to oral and dental health related problems during pregnancy (2,3).

Gingivitis that develops due to increased gingival hyperplasia during pregnancy is quite prevalent, and it affects approximately 30% to 86% of all pregnant women (2,4,5). Such prevalent gingivitis causes the

irreversible destruction of teeth's supportive structures and tooth losses (2).

ODH-related problems during pregnancy also affect the period of pregnancy (1). Scientific studies that show a positive correlation between poor periodontal health and negative pregnancy results (preterm birth, low birth weight, and preeclampsia, etc.) reveal that oral and dental health problems affect both the health of the mother and baby negatively (2,3,6,7,8). Studies show the importance of preventive dental care and oral health training to protect and improve the health of pregnant women and the fetus during pregnancy.

However, there is deficiency in the basic knowledge and approaches of health professionals regarding the effects of oral health on the overall health of the mother and the developing fetus. This deficiency creates a significant obstacle in the demand of pregnant women for oral and dental health care (8,9). Midwives and nurses working in primary care health services have important duties in terms of the protection and development of ODH during pregnancy among females. They should assess the ODH of each pregnant woman within the scope of prenatal care and provide consultancy to pregnant women. All health care professionals should reach a consensus about the importance of ODH during pregnancy in order for females to get sufficient care and service before and during pregnancy (3,8). This study aimed to determine health professionals' knowledge, views and practices about oral and dental health during pregnancy.

## MATERIAL AND METHODS

### Type of Research the Study

This research has been planned as a descriptive and cross-sectional study.

### Place and Time of the Study

The study was conducted with the health care providers (nurse, midwife, midwife-nurse, health officer) working at the obstetrics and gynaecology clinics of various hospitals in Istanbul between 5 and 30 May 2021.

### Population and Sample of the Study

The population of the study consisted of all health care providers working at the obstetrics and gynaecology clinic of the hospitals in Istanbul who had participated in the "perinatology" in-service training, and the sample consisted of 420 participants who accepted to participate in the study. 42 questionnaires were not taken into consideration when collecting the research data since the participants did not fill them in. The questionnaires of 378 participants who filled in the forms completely were taken into consideration.

### Data Collection Tool

The data were collected using the questionnaire developed by the researchers in line with the literature (2,3,4,9). In the questionnaire, there are 15 questions on the sociodemographic features and 23

questions on the knowledge and opinions of the participants on ODH during pregnancy.

### Ethical Aspect of the Study

The permission of the ethics committee was obtained for the conduction of the study. Furthermore, the privacy of the identity information of the participants was disclosed, and their written individual consent was obtained.

### Data Analysis

The analyses were performed using SPSS 20.0 Package Program. Descriptive statistical methods were used in the analyses of the data.

## RESULTS

370 females and 8 males participated in the study, and 36.5% (n:138) of the participants were nurses, 54.4% (n:206) were midwives, 4.8% (n:18) were midwife-nurses and 4.3% (n:16) were health officials. The age average of the participants is  $32.88 \pm 8.25$  years (min:16- max:60). All the participants work in the field of gynecology, and most of them have undergraduate/postgraduate degrees (Table 1). The participants reported that they obtained information on ODH from various sources (school, professional journals, congress/symposium, the internet, television, etc.). The participants reported the causes of periodontal diseases to be bacteria (28%), caries (15.1%), brushing problems (12.2%), sugary food (2.1%), and advanced age (0.8%).

Table 1. Socio-Demographic Feature of the Participants

| Parameter     |                          | n   | %    |
|---------------|--------------------------|-----|------|
| Gender        | Female                   | 370 | 97.9 |
|               | Male                     | 8   | 2.1  |
| Profession    | Nurse                    | 138 | 36.5 |
|               | Midwife                  | 206 | 54.4 |
|               | Midwife – Nurse          | 18  | 4.8  |
|               | Health Official          | 16  | 4.3  |
| Graduation    | Health                   | 61  | 16.1 |
|               | Vocational Health School |     |      |
|               | Associate's              | 82  | 21.7 |
|               | Undergraduate            | 176 | 46.6 |
|               | Postgraduate             | 59  | 15.6 |
| Working Field | Perinatology             | 19  | 5.0  |
|               | Policlinic               | 67  | 17.7 |
|               | Delivery Room            | 179 | 47.3 |
|               | Pregnant Educator        | 13  | 3.4  |
|               |                          |     |      |

When the participants were asked about the

**Table 2.** Practices of the participants in relation to oral and dental health (n=378)

|   |     | n   | %    |
|---|-----|-----|------|
| Giving pregnant women information on oral and dental health | Yes | 83  | 22.0 |
|   | No  | 295 | 78.0 |
| Referring to dentist in routine pregnancy follow-ups        | Yes | 65  | 17.2 |
|   | No  | 313 | 82.8 |
| Suggesting pregnant women gingival care in prenatal care    | Yes | 67  | 17.7 |
|   | No  | 311 | 82.3 |

definitions of periodontitis and gingivitis, they reported both to be periodontal infections in a similar manner (48.1% and 44.4%). When their importance in terms of periodontal diseases was asked, while periodontitis and gingivitis were found to be more important by 38.6% and 32.3%, respectively, 29.1% of the participants stated that they had no idea.

The participants said that dental examination (96.3%) and routine tooth cleaning (81.2%) could be performed during pregnancy, however, the treatment of periodontal diseases (72.5%) and filling/coating (74.1%) could not be performed.

Seventy-eight percent of the participants reported that no information on ODH is given to pregnant women, while 82.8% of them reported that they did not refer pregnant women to dentists in routine pregnancy follow-ups. Moreover, 82.3% of them stated that they did not give suggestions to pregnant women about gingival care in prenatal care (Table 2). The knowledge and views of the participants on ODH are presented in Table 3. Accordingly, the participants think that caries (80.2%), gingival enlargement (58.5%), gingival bleeding (83.6%) and tooth losses (72.5%) are experienced during pregnancy. They think that tooth treatment should be a part of prenatal care (86.8%), and it affects both the health of the pregnant woman (89.9%) and the fetus (77%). The participants who reported that pregnant women should be guided regarding oral health and care (92.1%) stated that pregnant women would be more positive towards tooth treatment only if this guidance was provided by gynecologists (82%).

Approximately half of the participants (56.1%) stated that they did not have the knowledge required for informing pregnant women about ODH, while more than half (63%) stated that they would be interested in training/seminars regarding the protection of ODH during pregnancy.

## DISCUSSION

Upon examining the ODH data in general in Turkey, it is observed that the prevalence of oral and dental health problems is quite high and the requirement for treatment is high. Nevertheless, the frequency of visiting dentists in our country is 0.9 year/time, while this frequency is 6 year/time in Europe (10). Considering the hormonal changes during pregnancy, the OHD problems increase, but there is no change in the rate of visiting dentists. In the systematic review of George et al. (2012) (11), the fact that pregnant women do not consider periodontal diseases as problems of top priority, fallacies, the lack of time of health professionals for training, the fear of dentists' harming the fetus and worries about the safety of the patient, the risk of litigation in case of negative pregnancy, the fact that pregnant women have limited knowledge about safe treatment were determined to be the factors that prevent pregnant women from receiving treatment. In addition to these, the fact that health professionals have not reached sufficient consensus about the subject, less focus on oral and dental health and not providing the necessary guidance to dentists are also among other preventive factors (12). The fact that oral and dental health is not considered as a problem of top priority during pregnancy, the belief that gynaecologists should refer pregnant women to dentists, and the fear of being sued due to malpractice have also been determined to be the factors that prevent giving care on ODH in this study, in a similar way. In the studies investigating the dental health of pregnant women conducted in Turkey, it was reported that 42-70% of women experienced ODH problems during pregnancy, but only 5.9-13.7% visited dentists (13-15). The data in the studies carried out overlap with the data on the fact that health care providers who have participated in our study do not give pregnant women information on ODH (78%) and do not refer pregnant women to dentists in their routine pregnancy follow-ups (82.8%). This may result from the fact that health care providers think that they do not have the knowledge accumulation to inform pregnant women on ODH or the evaluation of the oral and dental health during pregnancy is primarily the duty of dentists. Oral and dental care during pregnancy is a significant part of prenatal care (11). The insufficient oral and dental hygiene during pregnancy is an important subject that should be focused on due to its causing

negative maternal and fetal results (15). In a study conducted in 12 countries between 1996 and 2006, it was shown that there was a positive relationship between periodontitis and preterm birth and low

weight birth (16). Furthermore, in many studies conducted with health care professionals, health workers stated that periodontal diseases might be related to preterm birth by 48.9% in the study of Sharif

**Table 3.** Knowledge and views of the participants on the expressions regarding oral and dental health (ODH) (n=378)

| Expressions   | Yes |      | No  |      | No Idea |      |
|---|-----|------|-----|------|---------|------|
|   | n   | %    | n   | %    | n       | %    |
| An increase occurs in the rate of caries during pregnancy.  | 303 | 80.2 | 30  | 7.9  | 45      | 11.9 |
| Gingival enlargement is observed during pregnancy.  | 221 | 58.5 | 44  | 11.6 | 113     | 29.9 |
| Gingival bleeding may be observed during pregnancy.   | 316 | 83.6 | 21  | 56.0 | 41      | 10.8 |
| Tooth losses occur because of pregnancy.  | 274 | 72.5 | 45  | 11.9 | 59      | 15.6 |
| Gingival infections during pregnancy may result in preeclampsia.  | 65  | 17.2 | 141 | 37.3 | 172     | 45.5 |
| Periodontal diseases during pregnancy are not different from those that do not occur during pregnancy.  | 74  | 19.6 | 154 | 40.7 | 150     | 39.2 |
| Periodontal diseases during pregnancy do not affect the delivery.   | 110 | 29.1 | 120 | 31.7 | 148     | 39.2 |
| It is not possible to be protected from periodontal diseases during pregnancy.  | 121 | 32.0 | 156 | 41.3 | 101     | 26.7 |
| The nutrition of the pregnant woman is irrelevant to dental problems.   | 52  | 13.8 | 256 | 41.3 | 80      | 21.2 |
| Tooth treatments should be a part of prenatal care in pregnant women.   | 328 | 86.8 | 17  | 4.5  | 33      | 8.7  |
| Pregnant women should be guided in terms of oral health and care.   | 348 | 92.1 | 8   | 2.1  | 22      | 5.8  |
| Pregnant women who are guided by gynecologists are more positive towards tooth treatments.  | 310 | 82   | 17  | 4.5  | 51      | 13.5 |
| The fact that the budget of certain pregnant women is limited prevents planning in relation to oral and dental health treatment.  | 277 | 73.3 | 49  | 13.0 | 52      | 13.8 |
| Information cannot be given to pregnant women due to workload in prenatal follow-ups.   | 250 | 66.1 | 48  | 12.7 | 80      | 21.2 |
| It is important to inform pregnant women about oral and dental health in terms of the general health.   | 340 | 89.9 | 10  | 2.6  | 28      | 7.4  |
| It is important to inform pregnant women about the effects of caries in pregnant women on the baby.   | 318 | 84.1 | 12  | 3.2  | 48      | 12.7 |
| Females who plan pregnancy should be certainly evaluated in terms of oral and dental health.  | 42  | 11.1 | 228 | 60.3 | 108     | 28.6 |
| The contribution of nurses and midwives to the oral and dental health of pregnant women is limited.   | 213 | 56.3 | 118 | 31.2 | 47      | 12.4 |
| It is not necessary to warn pregnant women about the relationship between periodontal diseases and preterm birth since I find the relationship between them to be weak. | 42  | 11.1 | 228 | 60.3 | 108     | 28.6 |
| It is not necessary to warn pregnant women since I do not think that caries during pregnancy will affect the fetus.   | 20  | 5.3  | 291 | 77.0 | 67      | 17.7 |
| Nurses and midwives do not want to make any evaluation of oral and dental health since they are afraid to be sued if something goes wrong with the pregnancy process.   | 55  | 14.6 | 205 | 54.2 | 118     | 36.2 |
| I have the knowledge to inform pregnant women about oral and dental health.   | 109 | 28.8 | 212 | 56.1 | 57      | 15.1 |
| Training/seminars about the protection of oral and dental health during pregnancy will attract my interest.   | 238 | 63.0 | 85  | 22.5 | 55      | 14.6 |

et al. (2016) (2); by 68.8% in the study of Costa et al. (2010) (17); by 57% in the study of Zanata et al. (2008) (18); by 43% in the study of Strafford et al. (2008) (19), and low birth weight by 43.6% in the study of Sharif et al. (2016) (2); by 77% in the study of Costa et al. (2010) (17); by 57% in the study of Zanata et al. (2008) (18); by 54% in the study of Strafford et al. (2008) (19). In the study conducted by George et al. (2017) dentists stated that they had limited knowledge about periodontal diseases and obstetric results.<sup>3</sup> In our study, more than half of the participants of the study (60%) stated that they thought that there was a correlation between periodontal diseases and preterm birth in a similar way to the literature data. However, awareness should be raised by giving information to nurses and midwives about the relationship between pregnancy and oral and dental health with proof-based information.

Oral care is an important component of the routine health care for pregnant women. Nurses and midwives are among the most important health care providers of prenatal health services. Nurses and midwives have important duties for raising ODH awareness and ODH services to be given to pregnant women. In the study carried out by Sharif et al. (2016) (2) and investigating the knowledge and experience of nurses in relation to oral and dental health during pregnancy, many nurses stated that caries (86.5%) and excessive sugar consumption (87.2%) were related to the gingival disease. Moreover, 78.2% of the nurses agreed with the expression that the developing fetus takes calcium from the mother's teeth (2). In another study conducted in North Carolina (20), most of the nurses and midwives who participated in the study stated that caries was correlated with periodontal disease (76%) and excessive sugar intake (62%), in a similar way. As a result of our study, the participants think that bacteria (28%), sugary food (2.1%), caries (15.1%), advanced age (0.8%) and brushing problems (12.2%) are the reasons for gingival diseases in line with the literature. The study results show that health care providers have deficient or incorrect information. The effective and correct guidance can be only provided to pregnant women with the correct knowledge and approaches of health service providers.

Although the importance of ODH during pregnancy is known, dentists think that the application of dental treatments in pregnant women is not safe (21,22). Actually, the study results show that dentists can

safely perform the necessary treatments to stop the advancement of tooth diseases during pregnancy and prevent more serious problems (21-25). Many practices such as tooth whitening, minor operations or prosthesis treatments may be delayed to the postnatal period not because they are harmful to the fetus, but because the pregnant woman should lie in the supine position for a long time (21,23-24). In the study conducted by Sharif et al. (2016) (2), one-fourth of the nurses think that tooth treatment affects the fetus negatively.<sup>2</sup> In our study, only 17.7% of the participants stated in a similar way that they would suggest gingival care to pregnant women in prenatal care. Nurses and midwives should be providing pregnant women with correct and evidence-based health information.

#### Limitation

Studies demonstrating the national data obtained on oral and dental health during pregnancy in Turkey is insufficient. Study results cannot be generalized since the study has been conducted within a specific group.

#### CONCLUSION

Consequently, it has been determined that nurses and midwives do not have sufficient knowledge on ODH during pregnancy, do not give pregnant women information on ODH and they do not refer them to dentists in their routine pregnancy follow-ups. Nevertheless, health care providers think that ODH is a part of prenatal care and pregnant women should be guided.

In this direction, nurses and midwives should be educated about the effectiveness and safety of ODH services during pregnancy.

All health care professionals should reach consensus on the importance of ODH during pregnancy in order for females to get sufficient care and service in terms of oral and dental health before and during pregnancy. In this direction, guidebooks and manuals on oral and dental health can be prepared especially for nurses and midwives. ODH should be turned into a part of routine prenatal care.

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**Conflict of interest:** The authors declare that they have no competing interests.

**Ethical approval:** The study was approved by Istanbul University Cerrahpasa Social and Human Sciences Research Ethics Committee with the decision dated on 04.05.2021 and 2021/117

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