İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi
ISSN: 2147-7892, Cilt 8, Sayı 2 (2020) 233-245
doi: 10.33715/inonusaglik.714324

Journal of Inonu University Health Services Vocational School
ISSN: 2147-7892, Volume 8, Issue 2 (2020) 233-245
doi: 10.33715/inonusaglik.714324

Original Article / Araştırma Makalesi

DETERMINATION OF AWARENESS OF MIDWIVES AND NURSES WORKING IN PRIMARY PREVENTIVE HEALTH SERVICES REGARDING ORAL AND DENTAL HEALTH IN PREGNANCY

Birinci Basamak Koruyucu Sağlık Hizmetlerinde Çalışan Ebe ve Hemşirelerin Gebelikte Ağız-Diş Sağlığına İlişkin Farkındalığının Belirlenmesi

Eylem TOKER[1] *Tansel BEKİROĞLU ERGÜN*[2]
Mine AKBEN[3] *Berna GÖÇEBE*[4]
[1,2,3]*Sütçü İmam University, Faculty of Health Sciences, Kahramanmaraş, Turkey*
[4]*Local Health Authority, Department of Public Health, Kahramanmaraş, Turkey*

Geliş Tarihi / Received: *04.04.2020* ***Kabul Tarihi / Accepted:****27.04.2020* ***Yayım Tarihi / Published:****21.06.2020*

ABSTRACT

This descriptive study was conducted to determine the awareness of midwives and nurses regarding oral and dental health in pregnancy. The universe of the study consists of midwives and nurses working in all Family Health Centers (n=34) in a city center in the Mediterranean region, Turkey. It was aimed to reach the whole universe (n=119) without sampling, and 106 midwives and nurses who volunteered to participate in the study formed the sample of the research. The data were collected by using a questionnaire including 22 questions. In the analysis of the data, the Chi-square test was used in addition to descriptive statistical methods. The midwives and nurses stated that the most common dental health problem during pregnancy was dental caries (67.0%), and the oral-dental health problem during pregnancy can be associated with the low birth weight (32.1%). Participants had no idea about the relationship between oral/dental health in pregnancy and stillbirth and preeclampsia. Only 39.6% of them answered the question of whether women should have dental treatment in their pregnancy asyes, while 59.4% had no idea about the dental examination. Professional experience year was determined to affect the participants' giving more positive responses in some issues related to oral and dental health (low birth weight, dental X-ray) ($p < 0.01$), and it was found that loss of teeth positively affected the state of giving education to pregnant women about oral health ($p < 0.05$). The study showed that the awareness of midwives and nurses about oral and dental health during pregnancy was not at the desired level, and they should be educated on this issue.

Keywords: Midwife, Nurse, Oral-dental health, Pregnancy, Prenatal care

ÖZ

Tanımlayıcı tipteki bu araştırma, ebe ve hemşirelerin gebelikte ağız ve diş sağlığı ile ilgili farkındalıklarını belirlemek amacıyla yapıldı. Araştırmanın evrenini, Türkiye'nin Akdeniz Bölgesi'ndeki bir il merkezine bağlı tüm Aile Sağlığı Merkezlerinde (n=34) çalışan ebe ve hemşireler oluşturmaktadır. Örneklem seçimine gidilmeyip evrenin tamamına (n= 119) ulaşılması hedeflendi ve araştırmaya katılmaya gönüllü 106 ebe ve hemşire araştırmanın örneklemini oluşturdu. Veriler22 soruluk bir anket formu kullanılaraktoplandı. Verilerin analizinde tanımlayıcı istatistiksel yöntemleri yanı sıra Ki-kare testi kullanıldı. Ebe ve hemşireler gebelikte en sık görülen ağız-diş sağlığı probleminin diş çürümesi (%67.0) olduğunu, ve gebelikteki ağız-diş sağlığı problem sorununun düşük doğum ağırlığı (%32.1) ile ilişkilendirilebileceğini belirttiler. Katılımcıların gebelikte ağız-diş sağlığı sorunu ile ölü doğum ve preeklampsi ilişkisi hakkında fikri bulunmamaktaydı. "Gebelikte diş tedavisi yaptırılmalı mıdır?" sorusuna yalnızca %39.6'ı evet yanıtını verirken, %59.4'ünün diş muayenesi hakkında fikri bulunmamaktaydı. Meslekte çalışma yılının gebelikte ağız-diş sağlığına ilişkin bazı konularda daha fazla olumlu yanıt vermeye etki ettiği (düşük doğum ağırlığı, diş röntgeni çektirme) ($p<0.01$), diş kaybı durumlarının gebelere ağız diş sağlığı konusunda eğitim verme durumunu pozitif etkilediği saptandı ($p<0.05$). Ebelerin ve hemşirelerin gebelikte ağız ve diş sağlığı konusunda farkındalıkları istenilen düzeyde olmadığı belirlendi ve bu konuda eğitilmelidirler.

Anahtar Kelimeler: Ağız-diş sağlığı, Ebe, Gebelik, Hemşire, Prenatal bakım

Eylem TOKER ✉, tokereylem@gmail.com
Sütçü İmam University, Faculty of Health Sciences, Kahramanmaraş, Turkey

Bu makaleye atıf yapmak için(How to cite this article): Toker, E., Bekiroğlu Ergün, T., Akben, M., Göçebe, B. (2020). Awareness of Midwives and Nurses Working in Primary Preventive Health Services Regarding Oral and Dental Health in Pregnancy. İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi, 8(2), 233-245. doi: 10.33715/inonusaglik.714324

INTRODUCTION

Oral and dental health in pregnancy is an essential but often overlooked issue which may cause problems that can have adverse effects on maternal and fetal health (Boggess, 2008; Kısa & Zeyneloğlu, 2013; Mecdi & Hotun, 2015). In the literature, it has been reported that there may be a relationship between oral and dental health problems and pregnancy complications~~such~~ as pregnancy induced hypertension due to periodontal infections, pre-eclampsia, gestational diabetes, depression, premature rupture of membranes, preterm birth (Chaparro et al., 2013; Jarjoura et al., 2005; Mecdi & Hotun, 2015). Additionally, periodontal infections have been linked to negative pregnancy outcomes such as premature birth, low birth weight, and fetal loss (Sağlam, Saruhan & Çanakçı, 2014; Shanthi et al., 2012; Vergnes & Sixou, 2007). Periodontal infections may be due to the healthy pregnancy physiological changes. In addition, specific immunological changes leading to infections during pregnancy increase susceptibility to periodontal damage (Xiong, Buekens, Vastardis & Stella, 2007).

In general population, statistics about improvement of oral care habits as regular visits to the dentists in Turkey is far below the world average (Kılınç & Günay, 2010).According to 2009 data, toothpaste consumption in Turkey is 109 grams per person. This rate is 480 grams in England and 270 grams in Italy (Kılınç & Günay, 2010).The knowledge and care levels about oral and dental health in general population of Turkey and oral and dental health problems seen during pregnancy is insufficient (Kılınç & Günay, 2010). However, acute problems related to oral and dental health occur more in pregnancy, and applications for preventive measures may be insufficient (Kılınç & Günay, 2010).

It is imperative that midwives and nurses working in the family health centers possess knowledge regarding oral and dental health in pregnancy and incorporate this knowledge into routine antenatal care. Unlike dentists, midwives and nurses are the first healthcare professionals to meet with pregnant women and to support them and their families in the antenatal care. In addition, considering the roles of midwives and nurses in the activities ranging from pregnancy planning to the postpartum period, they should consider oral and dental health as one of the parts of the general health, make women more sensitive to this issue and play an active role in directing women to a dentist (Wagner & Heinrich-Weltzien, 2016).

In this context, the present study aimed to determine the awareness of midwives and nurses working in family health centers regarding oral and dental health in pregnancy and to

contribute to the limited literature addressing awareness of health professionals working in primary health care.

METHODS

Study Design, Setting, and Participants

This study was a descriptive design conducted on a population consisting of midwives and nurses working in 34 Family Health Centers (FHCs) in Mediterranean region of Turkey. All midwives and nurses who agreed to participate in the present study were included without sampling.

There were 34 FHCs in the city centers affiliated with the Provincial Public Health Directorate when the present study began on May 25, 2015, so the study was carried out in a total of 34 FHCs.

All the midwives and nurses (n=119) working in Family Health Centers (34 FHC) affiliated to the Provincial Directorate of Health created the sample of this research. A total of 106 midwives and nurses created the sample of this research because 11 of them were on leave and 2 of them did not want to participate in the study (Figure 1). The data collection process lasted nine months, from May 25, 2015 to January 25, 2016.

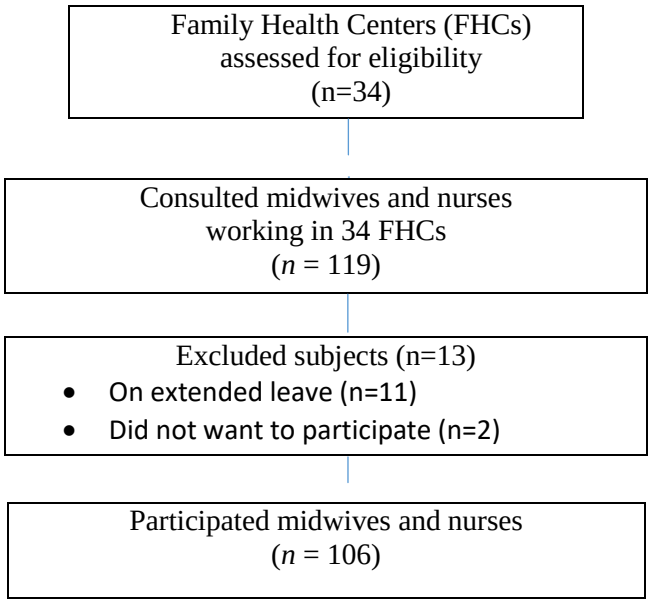

Figure 1. *Participant flow sheet*

Measures

The data was collected by a questionnaire consisting of 22 questions prepared by the researchers in line with the literature (Akar, 2014; Kısa&Zeyneloğlu, 2013; Wagner &Heinrich-Weltzien, 2016). The questionnaire was prepared according to the regulations,

instructions and informative documents disseminated on; the website of the Ministry of Health of Turkey, various related articles, and Turkish Dental Association Publications (Akar, 2014; Kısa&Zeyneloğlu, 2013; Turkey Strategic Planning of 2014-2017; Prenatal care management guideline, 2018; Wagner &Heinrich-Weltzien, 2016).A preliminary pilot test was performed on midwives and nurses working in FHCs (n=15) and evaluated concerning comprehensibility, objectivity and quantification sufficiency. The data of pilot test was included in the research.

The first part of the questionnaire is related to the personal information (four questions), second part is related to individual oral and dental health (six questions) and third part is related to oral and dental health in pregnancy (12 questions), respectively.

The self-administered questionnaire was given directly to the participants by the investigators in FHC visits. Following the receipt of informed consent, they were told to fill out the questionnaire at once in a quiet room. It took an average of 15 minutes to complete the questionnaire.

Compliance of Ethical Statement

Approval from the Provincial Public Health Directorate (May 23rd, 2015; no: 57159737-044) and the Ethics Committee (January 12th, 2015; no: 08) was obtained prior to the beginning of the study. Additionally, before the study, all of the participants were informed about the study and an informed consent form was given to each participant. All participants completed a consent form before the study.

Study Limitation

The main limitation of the present study was that represented only a select group of nurses and midwives working at FHCs.

Data Analysis

The data were evaluated using the SPSS v22.0 program. Descriptive statistical methods and the Chi-square test were used to analyze the data, and $p<0.05$ was accepted as statistically significant.

RESULTS

The mean age of the participants in the present study was 37.00±6.89 years ~~old~~ (25–54). In addition, 67,9% of the participants (n = 72) were midwives and 32,1% (n = 34) were nurses. Most of the midwives were educated to the Associate's degree level (75.6%) and most

of nurses were educated to high school (48.0%). Concerning professional working time, most of midwives (75,0%) had been working for more than twenty years and most of nurses (38,6%) had been working for less than ten years in the health clinic and FHCs (Table 1).

Table 1. Sociodemographic characteristics of midwives and nurses (n=106)

Profession	**Midwife (n(%))**	**Nurse (n(%))**	**Total[b](n(%))**
	72 (67.9)	34 (32.1)	106 (100)
	Mean±SD	**Mean±SD**	**Mean±SD**
Age	37,35±7,05	37,28±6,31	37,00±6,89
Education Status	**(n(%))**	**(n(%))**	**(n(%))**
High school	13 (52.0)	12 (48.0)	25 (100)
Associate degree	31 (75.6)	10 (24.4)	41 (100)
Undergraduate/Postgraduate	28 (70.0)	12 (30.0)	40 (100)
Working Years in Profession			
1-10 years	27 (61.4)	17 (38.6)	44 (100)
11-20 years	30 (71.4)	12 (28.6)	42 (100)
21-30 years	15 (75.0)	5 (25.0)	20 (100)
Working Year in FHCs[a]			
0-5 years	63 (67.0)	31 (33.0)	94 (100)
6-10 years	9 (75.0)	3 (25.0)	12 (100)

[a]*FHC: Family Health Centers* [b]Line sum is given

Although not shown in the table, 62.3% of the participants had tooth loss, 66.0% had not received information/education regarding oral and dental health in pregnancy, 60.4% gave instruction about oral and dental health to pregnant women within the scope of antenatal follow-up, and 42.5% directed their patients to dental examination.

Table 2. Responses of subjects to questions regarding oral and dental health, treatment and practices in pregnancy (n=106)

Variables	**True (n (%))**	**False (n (%))**	**No Idea* (n (%))**
Which oral and dental health problems may be seen in pregnancy?			
Tooth decay	71 (67.0)	15 (14.2)	20 (18.8)
Gingival bleeding	58 (54.7)	14 (13.2)	34 (32.1)
Pregnancy Gingivitis	53 (50.0)	10 (9.4)	43 (40.6)
Tooth loss	51 (48.1)	22 (20.8)	33 (31.1)
Gingival enlargement/redness	49 (46.2)	16 (15.1)	41 (38.7)
Oral Pregnancy Tumor	9 (8.5)	22 (20.8)	75 (70.8)
Which factors may be associated with oral and dental health problems in pregnancy?			
Low Birth Weight Baby	34 (32.1)	29 (27.4)	43 (40.6)
Preterm Labor	29 (27.4)	36 (34.0)	41 (38.7)
Stillbirth	10 (9.4)	42 (39.6)	54 (50.9)
Preeclampsia	7 (6.6)	38 (35.8)	61 (57.5)

Which practices of oral and dental health in pregnancy are safe?	**Safe (n (%))**	**Not safe (n (%))**	**In case of emergency (n (%))**	**No idea (n (%))**
Dental examination				
0-9 months period	22 (20.8)	7 (6.6)	14 (13.2)	63 (59.4)
0-3 months period	45 (42.5)	11 (10.4)	11 (10.4)	39 (36.8)
3-6 months period	54 (50.9)	6 (5.7)	5 (4.7)	41 (38.7)
6-9 months period	42 (39.6)	8 (7.5)	8 (7.5)	48 (45.3)
Dental x-rays				
0-9 months period	1 (0.9)	27 (25.5)	5 (4.7)	73 (68.9)
0-3 months period	1 (0.9)	52 (49.1)	10 (9.4)	43 (40.6)
3-6 months period	8 (7.5)	47 (44.3)	15 (14.2)	36 (34.0)
6-9 months period	9 (8.5)	44 (41.5)	12 (11.3)	41 (38.7)
Local Anesthesia	20 (18.9)	26 (24.5)	18 (17.0)	42 (39.6)
Teeth cleaning by dentist	49 (46.2)	9 (8.5)	17 (16.0)	31 (29.2)
Should dental treatment be done in pregnancy (tooth extraction, filling, root canal treatment etc.)?				
	Yes (n(%))[a]		**No (n(%))**	
0-9 months period	42(39.6)		64(60.4)	
0-3 months period	3 (7.1)			
3-6 months period	16 (38.1)			
6-9 months period	11 (26.2)			
At any time independent of months period	12 (11.3)			

*****No idea: It means the responders have not any idea about the question
[a] n=42: The answers are included only "yes" response.

The distribution of answers given by the health professionals regarding oral and dental health is provided in Table 2. When problems related to oral and dental health in pregnancy were questioned, the midwives and nurses stated tooth decay (67.0%) and oral tumors (8.5%) as the most and least common problems, respectively. The issues related to oral and dental health in pregnancy were mostly associated with low birth weight (32.1%), whereas 50.9% and 57.5% of participants had no opinion regarding the relationship of oral and dental health with stillbirth and pre-eclampsia. Concerning questions regarding the practices of oral and dental health in pregnancy, the midwives and nurses emphasized dental x-rays (25.5%) (especially in the first trimester (49.1%)) and local anesthesia to be unsafe (24.5%). More than half of the health professionals (59.4%) had no idea about dental examination, and 68.9% had no opinion about dental X-ray. When questioned whether women should have dental treatment in their pregnancy, 39.6% of midwives and nurses responded yes, 38.1% of those who answered yes stated that they can have treatment in the second trimester and 28.6% indicated that the trimester was irrelevant (Table 2).

Additionally, in the study 34.0% of participants responded yes to the question of whether women lose teeth as a result of pregnancy (Not given in the Tables). When the

independent variables affecting the answers of midwives and nurses were analyzed statistically in the present study, factors such as age, educational level, number of years working in FHCs, or having had education regarding oral and dental health were not found to be effective (Data not shown). Only, as the number of years working in the profession increased, the number of correct answers given to the questions significantly increased (respectively, p=0.002; p=0.001) (Table 3).

Thus, those who thought that oral and dental health problems were related to low birth weight (38.2%) were mostly found to be midwives and nurses who had worked in the profession for 21–30 years (p = 0.002). However, 48.2% of those who had worked in the profession for 1-10 years answered that dental X-rays in pregnancy were unsafe (p = 0.001) (Table 3).

Table 3. Impact of working year in the profession and midwives & nurses' tooth loss on the responses

	Working Year in Profession							
	1-10 years		**11-20 years**		**21-30 years**			
Variables	**n**	**%**	**n**	**%**	**n**	**%**	**X^2**	**p**
Low Birth Weight Infant								
Unrelated	34	47.2	31	43.1	7	9.7	12.384[a]	**0.002**[b]
Related	10	29.4	11	32.4	13	38.2		
Dental x-rays								
Unsafe	40	48.2	32	38.6	11	13.3	10.373[a]	**0.001**[b]
Safe	4	17.4	10	43.5	9	39.1		
Total[c]	44	41.5	42	39.6	20	18.9		
Variables	**Giving Education to Pregnant Women on Oral and Dental Health in Antenatal Period**							
	No			**Yes**				
Tooth Loss	**n**		**%**	**n**	**%**		**X^2**	**p**
No	22		55.0	18	45.0		6.350[a]	**0.010**[b]
Yes	20		30.3	46	69.7			
Total[c]	42		39.6	64	60.4			

[a] Pearson Chi-Square [b] $p<0.05$ [c]Line sum is given.

Besides, of the participants who had experienced tooth loss, 69.7% gave training on oral and dental health within the scope of antenatal care (p = 0.010) (Table 3).

DISCUSSION

There are physiological, psychological, and estrogen- and progesterone-related hormonal changes throughout the pregnancy. There may also be impairment of oral hygiene and the breakdown of gingival tissue because of nausea-vomiting and malnutrition during pregnancy (Kısa&Zeyneloğlu, 2013; Sağlam, 2014).

The finding of the present study was that the knowledge and awareness of both nurses and midwives were not sufficient about oral and dental problems related to oral and dental

health in pregnancy. In Turkey concerning oral and dental health; "National Protective Oral Dental Health Program" was started in 2014 by the Ministry of Health (Akar, 2014; Turkish Health Minister, Public Health Institution of Turkey Strategic Planning, 2014). Also, according to the "Prenatal Care Management Guideline" of the Ministry, minimum four visits are recommended for antenatal care and also in every visit conductance of information and consultation about oral and dental health to the pregnant by midwives and nurses and other health professions are being advised (Prenatal Care Management Guideline, Turkish Health Minister, 2018).Thus, midwives and nurses who perform prenatal care and follow-up have an essential role in protecting the oral and dental health of pregnant women (George et al., 2018; Kısa & Zeyneloğlu, 2013). Besides, the antenatal care period may be an opportunity to identify oral health behaviors and dental problems for them (Lasisi& Abdus-Salam, 2018).

In the present study, the awareness of tooth decay, gingival bleeding, etc. related to pregnancy was found at different levels in the participants. Almost half of the them had no idea about the presence or absence of these problems in pregnancy. In different studies, the correct responses given by the health professionals regarding the relationship between gingivitis, gingival bleeding, tooth decay and pregnancy have been reported to be higher than the present study. In the obstetrician group, more correct answers were reported than in the other groups; however, it was found that the answers given by midwives and nurses regarding problems related to oral and dental health during the antenatal period were quite a lot higher than those in the present study (Golkari, Khosropanah & Saadati, 2013; Rocha et al., 2011; Sharif, Saddki & Yusoff, 2016).According to the results of the present study, participants have partial knowledge regarding periodontal health in pregnant women, but their awareness should be higher. In our study midwives and nurses' awareness regarding oral and dental health of pregnancy was insufficient, they need education about this issue. This difference may occur since the education and practice of health professionals in the present study not include enough issues regarding the relationship between dental problems and adverse pregnancy outcomes.

In these study, the rate of knowledge in midwives and nurses regarding oral and dental health causing preterm labor (27.4%) and miscarriages (32.1%) was low, and other pregnancy results (stillbirth, pre-eclampsia) were at minimal levels (9.4% and 6.6%, respectively) (Table 2). Although other studies in the literature have reported a higher correct answer rate regarding the relationship between dental problems and adverse pregnancy outcomes than those in the present study, knowledge of midwives and nurses regarding these issues was still found to be inadequate and limited (Sharif et al., 2016; Wagner & Heinrich-Weltzien, 2016;

Wooten, Lee, Jared, Boggess& Wilder, 2011).In one study conducted with Iranian midwives, the knowledge of the association rate between periodontal disease and preterm labor/low birth weight was found to be quite high as compared with the present study (Golkari et al., 2013). This difference may occur since the oral and health problems of pregnancy only be left to dentists up to now in Turkey.

In the present study, 34.0% of participants responded yes to the question of whether women lose teeth as a result of pregnancy; and in many cultures, the belief remains that pregnancy is a reason for tooth loss (Armitage, 2013), while elsewhere this is known to be untrue (Mecdi&Hotun, 2015). In parallel to the present work, it has been reported that there is a similar belief in the literature regarding tooth loss as a result of pregnancy (Golkari et al., 2013; Rocha et al., 2011). Health providers should address the lack of information on this subject.

On the other hand, knowledge and attitudes of participants regarding the treatment for oral and dental health in pregnancy are also crucial for maternal and fetal health. Studies have shown that treatment and care for oral and dental health in pregnancy are safe and effective (ACOG Committee Opinion, 2013; Kısa & Zeyneloğlu, 2013). However, knowledge of midwives and nurses providing antenatal care has been found to be inadequate in dental practice, timing, and treatment in pregnancy, especially in local anesthesia use, dental X-rays, and dental treatment. In a study carried out in nurses who give antenatal care, the right rate of the answers about having dental treatment during pregnancy was found to be similar to the present study (Sharif et al., 2016). These results show that there is a need for education in this regard. It has been reported in the literature that training given to improve knowledge of oral health in midwives and developed the Midwifery Initiated Oral Health Dental Service (MIOH-DS) program in Australia had positive results (Dahlen et al., 2018; Heilbrunn-Lang et al., 2015). Only 34.0% of midwives and nurses receiving information/education about oral-dental health in pregnancy has been seen in the present study as a need.

In the present study, independent variables such as age, education level, number of years working in FHCs, or having had education regarding oral and dental health were not statistically effective on the rate of correct answers given by midwives and nurses working in FHCs (p>0.05). Similarly, studies in the literature have shown that the age, duration of working in an antenatal clinic, or working conditions of midwives and nurses do not significantly affect the protective suggestions given for oral and dental health in pregnancy, which only appears to be influenced by the number of years working in the profession (Sharif et al., 2016; Wagner & Heinrich-Weltzien, 2016). It has been shown statistically in the

present study that the number of years working in the profession positively affects the correct answers given regarding poor oral health causing low birth weight. When it comes to the question of how safe it is to have a dental X-ray during the pregnancy period, the majority of those who have worked for up to 10 years in the profession said it is unsafe and those who have worked for more than 10 years in the profession said it is safe (Table 3). Apart from the answers given to these questions, it is clear that the professional experience, which increased with working years, positively affected the answers given to certain items, but did not make any difference overall.

Interestingly, in the present study, experiencing tooth loss statistically affected the delivery of antenatal education to pregnant women by midwives and nurses working in the family health centers (Table 3). Health professionals who had experienced tooth loss provided higher levels of education regarding oral-dental health to pregnant women within the scope of antenatal care. We think that this may be due to their oral health problem and that the awareness and sensitivity experienced with this issue may have had an impact on the antenatal care they provided to pregnant women. In one study, it was also found that obstetricians who had recently undergone a dental examination had significantly higher rates of recommending their patients to go for a dental examination (Rocha et al., 2011).

In this regard, it has been reported in the literature that dental hygiene practitioners (dentists, midwives, and nurses) generally reflect their habits and behaviors related to oral and dental health and are an important factor in the oral health of patients (Kawamura, Spadafora, Kim & Komabayashi, 2002).

It has been observed that education regarding oral and dental health during the antenatal period, and directing pregnant women to a dental examination are not yet at the desired level. On the other hand, physicians, dentists, nurses, and midwives should agree on the importance of oral health in pregnancy to ensure that women receive adequate care and services prior to and during pregnancy (Mecdi & Hotun, 2015).The fight against preventable oral and dental health problems should not only be left to dentists, whose numbers are limited worldwide (Kılınç & Günay, 2010; Turkish Dentist Association, 2015).

In accordance with the results obtained, it has been determined that knowledge of midwives and nurses is inadequate in terms of; oral and dental health related problems in pregnancy, its maternal and fetal outcomes, dental examination and treatment in pregnancy, and directing women to a dentist. We can state that midwives and nurses have inadequate knowledge regarding the importance of oral and dental health, especially during the antenatal period, which requires new education programs.

The current health policies, antenatal care guidelines, and studies on this issue are noteworthy, but their reflection on the field is not adequate. Midwives and nurses, along with dentists, may play an active role in solving problems related to oral and dental health in pregnancy. It would be useful to educate all health professionals on oral and dental health by starting with undergraduate education, and to continue to support them with in-service training; in line with the following:

- Evaluation of pregnant women's oral hygiene at follow-ups by health professionals, primarily by midwives and nurses, and directing them to a dentist.

- Application of oral and dental health improvement programs intending to prevent~~ing~~ the complications that may occur in pregnancy.

- Emphasizing the importance of oral and dental health by informing pregnant women about changes that may occur in their mouth and with their teeth during pregnancy.

- Educating both pregnant women and the health professionals providing the care with respect to oral and dental health in pregnancy.

- Explaining that dental treatment in pregnancy is effective and safe, increasing the utilization rates of health institutions and dentists.

- Trainings that will raise awareness among midwives and nurses should be organized on oral and dental health in pregnancy,

- Midwives and nurses should be educated on oral and dental health by starting with undergraduate education, and to continue to support them with in-service training,

- Pregnancy and oral health course (elective course) should be adding to undergraduate midwifery and nursing curriculum.

Acknowledgments

The authors thank the Provincial Public Health Directorate for permission and support and also the midwives and the nurses, who have been working in Family Health Centers (34 FHCs) affiliated with the Provincial Directorate of Health for their support and participation. We also thank Prof. Dr. Yusuf Ergün for revising the paper regarding clarity and scientific and language convenience. This manuscript would be presented as an oral presentation at 1st International Midwifery Education and Research Development Congress, held in İzmir, on 07-09 November 2018.

REFERENCES

Akar, Ç. (2014). Strategy evaluation of oral health services in Turkey.Turkish Dental Association Publications, Research Series, 9, 1-73.

American College of Obstetricians and Gynecologists.(2013). Oral health care during pregnancy and through the lifespan. Committee Opinion 569, Obstet Gynecol, 122(2), 417-422. doi: 10.1097/01.AOG.0000433007.16843.10.

Armitage, G. C. (2013). Bi-directional relationship between pregnancy and periodontal disease. Periodontol 2000, 61(1), 160-176. doi: 10.1111/j.1600-0757.2011.00396.x.

Boggess, K. A. (2008). Society for maternal-fetal medicine publications committee. Maternal oral health in pregnancy, Obstet Gynecol, 111(4), 976-986. doi: 10.1097/AOG.0b013e31816a49d3.

Chaparro, A., Sanz, A., Quintero, A., Inostroza, C., Ramirez, V., Carrion, F., ... Illanes, S. E. (2013). Increased inflammatory biomarkers in early pregnancy is associated with the development of pre-eclampsia in patients with periodontitis: A case control study. J Periodontal Res, 48(3), 302-7. doi: 10.1111/jre.12008.

Dahlen, H. G., Johnson, M., Hoolsema, J., Norrie, T. P., Ajwani, S., Blinkhorn, A., ... George, A. (2019).Process evaluation of the midwifery initiated oral health-dental service program: Perceptions of midwives in Greater Western Sydney. Australia, Women Birth, 32(2), 159-165. doi: 10.1016/j.wombi.2018.06.021.

George, A., Dahlen, HG., Blinkhorn, A., Ajwani, S., Bhole, S., Ellis, S., ... Johnson, M. (2018). Evaluation of a midwifery initiated oral health-dental service program to improve oralhealth and birth outcomes for pregnant women: A multi-centre randomised controlled trial.Int J Nurs Stud, 82, 49-57. doi: 10.1016/j.ijnurstu.2018.03.006.

Golkari, A., Khosropanah, H., Saadati, F. (2013). Evaluation of knowledge and practice behaviours of a group of Iranian obstetricians, general practitioners, and midwives, regarding periodontal disease and its effect on the pregnancy outcome. J Public Health Res, 2(2), 15. doi: 10.4081/jphr.2013.e15.

Heilbrunn-Lang, A. Y., De Silva, A. M., Lang, G., et al. (2015). Midwives' perspectives of their ability to promote the oral health of pregnant women in Victoria. Australia, BMC Pregnancy Childbirth, 15, 110. doi: 10.1186/s12884-015-0536-x.

Jarjoura, K., Devine, P. C., Perez-Delboy, A., Herrera-Abreu, M., D'Alton,M., Papapanou, P. N. (2015).Markers of periodontal infection and preterm birth. Am J Obstet Gynecol, 192(2), 513-519. doi: 10.1016/j.ajog.2004.07.018.

Kawamura, M., Spadafora, A., Kim, K. J., Komabayashi, T. (2002).Comparison of united states and korean dental hygiene students using the hiroshima university-dental behavioural inventory (HU-DBI). Int Dent J, 52(3), 156-162.doi: 10.1111/j.1875-595X.2002.tb00621.x.

Kılınç, G., Günay, T. (2010). Oral and dental health knowledge of medical students in Dokuz Eylul University. J DEÜ Medical Faculty, 24(3), 131-137. https://doi.org/10.17567/ataunidfd.461351.

Kısa, S., Zeyneloğlu, S. (2013). Inpatient postpartum women's status of oral hygiene habits and visit to the dentist during their most recent pregnancy. TAF Prev Med Bull, 12(1), 65-74. doi: 10.5455/pmb.1-1344345051.

Lasisi, T.J., Abdus-Salam, R.A. (2018). Pattern of oral health among a population of pregnant women in Southwestern Nigeria, Arch Basic Appl Med, 6, 99-103. https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC6052798/.

Mecdi, M., Hotun, N.Ş. (2015). Oral and dental health in pregnancy. Sted, 24(4), 161-166.

Prenatal care management guideline. (2014). Turkish Health Minister, Public Health Institution of Turkey, Ankara.http://sbu.saglik.gov.tr/Ekutuphane/kitaplar/dogumonubakim.pdf. Published March, Accessed May 15, 2019.

Rocha, J.M.d., Chaves, V.R, Urbanetz, A.A., Baldissera Rdos, S., Rösing, C.K. (2011). Obstetricians' knowledge of periodontal disease as a potential risk factor for preterm delivery and low birth weight. Brazilian Oral Res, 25(3), 248-254. doi: 10.1590/S1806-83242011000300010.

Sağlam, E., Saruhan, N., Çanakçı, C.F. (2014). Pregnancy and periodontal disease. MÜSBED, 4(4), 261-267..doi: 10.5455/musbed.20141015013328.

Shanthi V., Vanka, A., Bhambal, A., Saxena, V., Saxena, S., Kumar, S.S. (2012). Association of pregnant women periodontal status to preterm and low-birth weight babies: A systematic and evidence-based review. Dent Res J (Isfahan), 9(4), 368-380.

Sharif, S., Saddki, N., Yusoff, A. (2016). Knowledge and attitude of medical nurses toward oral health and oral health care of pregnant women.Malays J Med Sci, 23(1), 63-71.

Turkish Dentist Association. Distribution of Turkish Dentists' Working Styles to Institutions and Provinces / Provinces by 2014, 2015. (Original Report in Turkish). http://www.tdb.org.tr/tdb/v2/yayinlar/ Dishekimi_Dagilim_Kitapciklari/2014YiliDishDagKitapcigi.pdf. Published May 5, 2015. Accessed May 15, 2019.

Turkish Health Minister, public health institution of Turkey Strategic Planning of 2014-2017, Ankara: Public Health Institution of Turkey; 2014. 2014. http://www.sp.gov.tr/upload/xSPStratejikPlan/files/x4rRI +Stratejik_Plan_2014-2017.pdf. Published January 1, 2014. Accessed May 15, 2018.

Vergnes, J. N., Sixou, M. (2007). Preterm low birth weight and maternal periodontal status: a meta-analysis. Am J Obstet Gynecol, 196(2), 135-7. doi:10.1016/j.ajog.2006.09.028.

Wagner, Y., Heinrich-Weltzien, R. (2016). Midwives' oral health recommendations for pregnant women, infants and young children: results of a nationwide survey in Germany. BMC Oral Health, 16:36. doi:10.1186/s12903-016-0192-1.

Wooten, K. T., Lee, J., Jared, H., Boggess, K., Wilder, R. S. (2011). Nurse practitioner's and certified nurse midwives' knowledge, opinions and practice behaviors regarding periodontal disease and adverse pregnancy outcomes. J Dent Hyg, 85(2), 122-131.doi:10.1097/01.ogx.0000279292.63435.40.

Xiong, X.,Buekens, P., Vastardis, S., Yu, S. M. (2007).Periodontaldiseaseandpregnancyoutcomes: state-of-the-science. ObstetGynecollSurv, 62(9), 605-615.