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Evaluation of Dentists' and Gynecologists' Knowledge, Attitude, and Practice Regarding Oral and Dental Care during Pregnancy in Qom, Iran, in 2017

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Background & Aims of the Study: Dentists and gynecologists seem not to have sufficient information regarding oral and dental care to provide pregnant women. Moreover, their lack of preparation and undesirable attitude prevent them from transmitting any information. This study aimed to evaluate dentists' and gynecologists' knowledge, attitude, and practice regarding oral and dental care during pregnancy in Qom, Iran in 2017.

Materials and Methods: This cross-sectional descriptive study was conducted on 130 participants who were selected using the convenience sampling method. Subsequently, they were assigned into dentist (n=65) and gynecologist (n=65) groups. The data were collected using a researcher-made questionnaire. Moreover, the data were analyzed using descriptive statistics, analysis of variance, and t-test. A P-value less than 0.05 was considered statistically significant.

Results: According to the results, there was a significant difference between dentists' and gynecologists' levels of knowledge (P=0.000), attitude (P=0.000), and practice (P=0.000) (i.e., 80.85, 81.93, and 86.53 in the dentist group, respectively) and (i.e., 58.46, 72.65, and 70.76, in the gynecologist group, respectively). Furthermore, the gynecologists' age correlated significantly with the level of knowledge (P=0.04) and attitude (P=0.04). However, gynecologists' age was not correlated with the level of practice. Moreover, there was a significant difference between gynecologists' work experience and level of knowledge (P=0.016). Nonetheless, work experience had no correlation with gynecologists' levels of attitude and practice.

Conclusion: Based on the results, dentists and gynecologists obtained favorable mean values of knowledge, attitude, and practice in this study. However, dentists had higher scores in this regard. Therefore, greater interactions should be encouraged between oral health practitioners and those working in the health care system to improve their performance. Additionally, there is a need to update the information levels of these health care professionals in order to establish guidelines for prenatal dental care.

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Background

Women represent 50% of the world population, and since they are the potential mothers, the health of future generations depends on their well being. Oral and dental health affects the entire body. Much research has been conducted, especially in the last decade, on the relationship between oral and dental care and the health of the body (1-2). Pregnant women are at higher risk of dental caries and periodontal diseases, compared to others. Moreover, they are prone to showing less attention to their hygiene because of their special pregnancy conditions, such as food craving, mood swings, and mental health conditions (3). Pregnancy is an important milestone in the life of any woman which leads to physiological and hormonal changes though it is not considered a disease. These changes affect the dental health of mothers directly and indirectly. Poor oral hygiene and untreated oral diseases can have profound effects on the quality of one's life. The World Health Organization (WHO) has recognized oral and dental health as one of the aspects of human health and has indicated the association between oral health and some chronic diseases, such as diabetes and heart disease. Oral health is also correlated with mental health and certain mental characteristics, including positive self-image. Consequently, the WHO considers this issue in its health care plans with the aim of chronic disease prevention and health promotion (5).

Therefore, it is of utmost importance to pay attention to oral health in some vulnerable groups, including pregnant women to maintain their health and that of the fetus. Pregnancy is accompanied by changes in body organs, including mouth and teeth which can lead to oral diseases and dental caries in pregnant women if not treated properly (6). Failure to provide pregnant women with full health care may result in severe dental pain and increased caries. Therefore, pregnant women are required to pay more attention to oral and dental health; otherwise, it can be risky for mother and fetus. According to some studies, severe gingivitis is a significant cause of low birth weight and preterm birth among pregnant women (7,8).

However, the incidence of oral and dental diseases can be prevented by making pregnant women aware of hygienic issues and raising their knowledge about their health conditions. Some pregnant women avoid cleaning their mouths after vomiting which is a side effect of pregnancy, whereas nausea and vomiting decrease the pH of the mouth and increase the chance of decay. Given the fact that women are not aware of the importance of this issue, it is crucial to pay enough attention to it. Moreover, pregnant women often assume that dental practices are even harmful to them and their fetuses. The results of a study indicated that 45% of women believed that they should not take professional dental care during pregnancy; however, the fact is that they should take the necessary measures to get dental treatments (9).

Comprehensive prenatal health care should include oral health assessments though they are often neglected (10). Pregnant women have the most contact with midwives, gynecologists, and obstetricians and visit them regularly even before pregnancy (11). Therefore, pregnant women should be provided with information about their oral and dental health in this golden period (12). The American Dental Association believes that women should be encouraged to schedule a dental examination before pregnancy and continue receiving care during this period (13).

Gynecologists and midwives are the most common caregivers for pregnant women during pregnancy, and the majority of pregnant women have regular visits with them and follow their recommendations. Therefore, it is important to raise the health care providers' knowledge, attitude, and practice in this regard. Moreover, it is of utmost

importance that gynecologists have sufficient knowledge about oral health issues during pregnancy. Effective collaboration between gynecologists or midwives and dentists can play an important role in preventing and controlling many oral diseases in mother and child. Furthermore, many oral diseases can be prevented from raising mothers' awareness and giving them a proper education (14).

With this background in mind, this study aimed to evaluate dentists' and gynecologists' levels of knowledge, attitude, and practice regarding oral care during pregnancy in 2017 to take all necessary measures to improve the oral health of mothers which has effects on the health of the fetus.

Materials & Methods

This cross-sectional descriptive study was conducted in 2017. The participants were selected using convenience sampling. The sample size was determined based on the results of a study performed by Natalie et al. Regarding the dentists' level of knowledge as 80%, type I error as 0.05, and accuracy of 0.1, the sample size was estimated at 130 participants who were assigned into the dentist and gynecologist groups (n=65 per group) in Qom, Iran. Subsequently, the participants were requested to respond to the questionnaire (15). The inclusion criterion was the willingness to participate in the study. The data were collected using a researcher-made questionnaire. This tool seeks information about three domains, namely knowledge, practice, and attitude using closed-ended questions which can be completed as self-report.

The content validity of the questionnaire was assessed using an extensive literature review. Furthermore, some experts, including supervisors and advisors were asked to confirm its validity. It should be noted that their comments were applied to revise and improve the content of the tool.

The procedure for revision was as follows

In total, 10 faculty members of the School of Dentistry affiliated to Qom University of Medical Sciences, Qom, Iran, were requested to give their opinion on the items in the questionnaire. After data collection, the items were rated, and the questionnaires were again distributed among them. Finally, the validity of the items was confirmed based on their comments. Furthermore, the reliability of the questionnaire was estimated using Cronbach's alpha above 0.7. In the gynecologist group, the Cronbach's alpha coefficients were 0.79, 0.90, and 0.71 regarding knowledge, attitude, and practice, respectively. Moreover, in the dentist group, Cronbach's alpha scores were 0.86, 0.93, and 0.77 in terms of knowledge, attitude, and practice, respectively.

The researcher-made questionnaire used in this study consists of two sections. The first section covers demographic characteristics, and the second one seeks information about knowledge (18 items), attitude (14 items), and practice (9 items). Regarding the scoring of the items measuring the knowledge, the correct and wrong answers scored 1 and 0, respectively. The items on attitude are scored based on a 5-point Likert scale from 1 (strongly disagree) to 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). Moreover, practice-related items are scored on a 5-point Likert scale from 1 (never) to 2 (rarely), 3 (sometimes), 4 (often), and 5 (always).

After obtaining the approval from Ethics Committee of Qom University of Medical Sciences, Qom, Iran, and getting the required permissions for the research procedure, the researcher referred to medical centers and gynecology and dentistry clinics in Qom, Iran. Subsequently, the researcher explained the research objectives and procedure to the participants. It should be noted that all participants were informed of the confidentiality of data. After obtaining oral consent, the questionnaires were distributed and the

participants were asked to complete them.

The participants' knowledge level was scored using the scores from 0 to 9. Moreover, the correct answer was scored "1" and the wrong or unanswered one was scored "0". Regarding attitude and practice items, the frequency of each item was presented in percentage. The data were analyzed using descriptive (i.e., frequency, percentage, mean, and standard deviation) and inferential statistics (i.e., ANOVA and t-test). Furthermore, an independent t-test was utilized to compare the mean values of knowledge, attitude, and practice between the two groups. In the same line, the correlation between demographic characteristics and level of knowledge, attitude, and practice was estimated using one-way ANOVA. A P-value less than 0.05 was considered statistically significant.

Results

This study included a total of 130 dentists (n=65) and gynecologists (n=65). The majority of the gynecologists were between ages 36 and 40 years (33.8%) and had 15 years of work experience (35.4%). Moreover, they were graduated after 2006 (35.4%). On the other hand, the majority of the dentists were male (60%) and between ages 36 and 40 years (32.3%). In addition, they had 11-15 years of work experience (35.4%) and were graduated between the years 2002-2005 (44.6%). It is worth mentioning that no significant difference was observed between the two groups regarding their level of education (i.e., General Practice and Specialist Degree) (Table 1).

Table1) Demographic characteristics of dentists and gynecologists in Qom, Iran

Demographic Characteristics		Dentist Group Number (Percentage)	Gynecologist Group Number (Percentage)
Age Range	Under 30	3(4.6%)	5(7.7%)
	31-35	18(27.7%)	11(16.9%)
	36-40	21(32.3%)	22(33.8%)
	41-45	16(24.6%)	20(30.8%)
	Over 45	7(10.8%)	7(10.8%)
Work Experience	Less than 5 Years	7(10.8%)	5(7.7%)
	6-10 years	18(27.7%)	20(30.8%)
	11-15	23(35.4%)	17(26.2%)
	More than 15	17(26.2%)	23(35.4%)
Year of Graduation	Before 1996	11(16.9%)	17(26.2%)
	1997-2001	16(24.6%)	13(20%)
	2002-2006	29(44.6%)	12(18.5%)
	After 2006	9(13.8%)	23(35.4%)
Place Of Education	Iran University	8(12.3%)	9(13.8%)
	Tehran University	8(12.3%)	15(23.1%)
	Shahid Beheshti University	9(13.8%)	12(18.5%)
	Other	40(61.3%)	29(44.6%)
Knowledge	Less than 25%	1(1.5%)	9(13.8%)
	25%-50%	7(10.8%)	19(29.2%)
	50%-75%	13(20%)	17(26.2%)
	More than 75%	44(67.7%)	20(30.8%)
Attitude	25%-50%	12(18.5%)	32(49.2%)
	50%-75%	52(80%)	29(44.6%)
	More than 75%	1(1.5%)	4(6.2%)
Practice	25%-50%	0(0%)	1(1.5%)
	50%-75%	9(13.8%)	44(67.7%)
	More than 75%	56(86.2%)	20(30.8%)

Table 2) Relationship between dentists and gynecologists regarding knowledge, attitude, and practice in Qom, Iran

Variables	Field of Study	Mean±SD	P-value	t	Degree of Freedom	Levine test	
						Sig	F
Knowledge	Gynecology Dentistry	58.46±26.89 80.85±22.28	0.000	-8.40	128	0.066	450.3
Attitude	Gynecology Dentistry	72.65±11.64 81.93±8.40	0.000	-5.16	128	0.054	768.3
Practice	Gynecology Dentistry	70.76±11.63 86.53±9.67	0.000	-5.16	128	0.054	768.3

Table 3) Relationship between demographic characteristics and variables under study (i.e., knowledge, attitude, and practice)

Variables	Field of Study	Mean±SD	Place of Education P-value	Year of Graduation P-value	Work Experience P-value	Age P-value
Knowledge	Gynecology	58.46±26.89	0.221	0.564	0.016	0.046
	Dentistry	80.85±22.28	0.153	0.014	0.588	0.118
Attitude	Gynecology	72.65±11.64	0.961	0.186	0.051	0.045
	Dentistry	81.93±8.40	0.205	0.036	0.511	0.104
Practice	Gynecology	70.76±11.63	0.333	0.242	0.221	0.435
	Dentistry	86.53±9.67	0.725	0.113	0.742	0.291

The gynecologists obtained the highest scores of 75, 25-50, and 50-75 regarding knowledge, attitude, and practice, respectively. On the other hand, the highest scores of knowledge, attitude, and practice were > 75, 50-75, and < 75 in the dentist group, respectively. Moreover, the mean values of knowledge, attitude, and practice in the gynecologist group were estimated at 10.52, 50.86, and 28.30, respectively. Additionally, the dentists obtained 14.55, 57.35, and 34.61 in terms of mean values of knowledge, attitude, and practice, respectively.

The result of the mean comparison of these indices between the two groups indicated that the mean values of knowledge were 58.46 and 80.85 in the gynecologist and dentist groups, respectively. Moreover, the mean values of attitude were obtained at 72.65 and 81.93 in the gynecologist and dentist groups, respectively. Regarding practice, the gynecologists and dentists obtained the mean values of 70.76 and 86.53, respectively (Table 2).

According to Table 2, a significant difference is observed between dentists' and gynecologists' level of knowledge, attitude, and practice regarding the oral and dental care during pregnancy (P=0.000) in Qom, Iran (Table 2).

Moreover, the results showed no correlation between the gynecologists' attitude (P=0.04) and knowledge (P=0.04) regarding oral care during pregnancy with age. However, age was correlated significantly with gynecologists' practice regarding oral care. Furthermore, gynecologists' level of knowledge had a significant relationship with work experience (P=0.01); nevertheless, no significant correlation was observed between attitude and practice regarding oral care during pregnancy with work experience. Additionally, there was a correlation between dentists' level of knowledge (P=0.01) and attitude (P=0.03) with the year of graduation (Table 3).

Discussion

Some previous studies have reported the dentists' and gynecologists' level of knowledge regarding oral health and pregnancy outcomes (16). Physical factors, such as hormonal and immunological changes during pregnancy

increase the risk of oral infections, including periodontal diseases. Among these periodontal changes, the most frequent ones include pregnancy gingivitis and epulis or granuloma. Based on the results of epidemiological studies, the prevalence rate of pregnancy gingivitis ranges from 35% to 100%. The periodontal diseases during pregnancy can lead to complications, such as preterm labor and low birth weight. Nevertheless, there is a dearth of research investigating the effects of periodontal diseases on pregnancy outcomes and mother's health during this period.

In this study, there was a significant difference between dentists' and gynecologists' level of knowledge, attitude, and practice regarding oral care during pregnancy in Qom, Iran. Moreover, the dentists obtained higher mean scores regarding these variables compared to the gynecologists. However, the results of a study performed by Patil et al. in 2013 indicated that gynecologists and general dentists had the same level of knowledge about the scientific principles of oral and dental prenatal care. Moreover, the attitudes of these two groups, which were resulted from their knowledge, were on the same level as well. However, regarding the practice, the dentists obtained higher scores, compared to the gynecologists.

The results of a study conducted by Patil et al. were consistent with those of the present study regarding practice; however, they were in line with the findings of the present study in terms of knowledge and attitude. In another study carried out by Zanata et al., 40.5% of the dentists believed in consulting with gynecologists before treatment, and 72.2% of gynecologists reported that dentists needed counseling before they started treatment (18). Therefore, given the importance of oral and dental care during pregnancy, dental offices and clinics are required to pay more attention to this issue. Moreover, regarding the relationship between periodontal diseases and certain systemic disorders, all professionals within the health care system, especially gynecologists and dentists, should be aware of the oral health conditions of pregnant women (19).

The results of the present study showed that dentists and gynecologists obtained favorable mean values of knowledge, attitude, and practice; however, the mean values of these variables were slightly higher in the dentist group, compared to the gynecologist group. Nonetheless, the results of a study conducted by Malek Mohammadi et al. showed that the target group had no high level of knowledge; however, they obtained moderate mean scores which was more than 50% of the total score. Moreover, this study showed that the participants obtained a favorable level of practice which satisfied the patients (20). Therefore, regarding knowledge, the result of the present study is not consistent with that of Malek Mohammadi et al.; however, the findings are in line with those of the aforementioned study in terms of practice.

In the same line, the results of a study performed by Golkari et al. indicated that gynecologists obtained higher scores regarding knowledge, compared to midwives and general physicians, and due to improper education, midwives had an insufficient level of knowledge (21). The results of the mentioned study were not consistent with those of the present study, and the participants in the current study obtained higher levels of knowledge. This discrepancy can be attributed to the differences in the sample size.

Furthermore, there was a significant correlation between gynecologists' level of knowledge and attitude regarding oral care during pregnancy with age. However, there was no association between age and level of practice. Moreover, a significant difference was observed between gynecologists' level of knowledge and work experience; nonetheless, work experience was not correlated with attitude and practice, which was not in line with

the results of a study carried out by George et al.; however, it was consistent with the findings of a study by Hashim et al.

Based on the results of a study performed by George et al., a significant correlation was found between gynecologists' level of knowledge and practice with the mean value of the work experience of > 20.2 years (22). It seems that the differences between the results of this study and that of George et al. can be attributed to the inequality between dentists and gynecologists.

Additionally, there was no significant correlation between gynecologists' place of education and year of graduation with their levels of knowledge, attitude, and practice regarding oral care during pregnancy, which was in line with the results of a study conducted by Malek Mohammadi et al. (20).

Similarly, Zanata et al. reported that the gynecologists with more years passed from their graduation recommended using less lidocaine with a vasoconstrictor (18). Based on the results of this study, the place of education did not play an important role in the dentists' and gynecologists' knowledge, attitude, and practice. This may be due to the high quality of education regardless of place, and there is no necessity to consider this variable in the studies in this regard. Moreover, no significant differences were reported between the place of education and dentists' and gynecologists' knowledge, attitude, and practice in the present study, and all groups had sufficient information about the topic under investigation. However, there is a dearth of research to compare this variable in this study with the one in other studies.

There was no significant correlation between dentists' and gynecologists' level of knowledge, attitude, and practice regarding oral care during pregnancy in Qom, Iran with age, place of education, year of education, gender, age, work experience, and level of education (i.e., General Practice and Specialist Degree). Regarding work experience, the results of the studies by Mozaffari and Ebadi were consistent with the findings of the present study. However, the results of the studies performed by Razi and Eftekhar were not in line with the findings of this study in terms of age, whereas they were in line with those of a study performed by Ebadi.

The results of a study performed by Eftekhar were not consistent with those obtained from this study regarding work experience and level of education; however, considering gender, the results of the study performed by Mozaffari and Eftekhar are consistent with the findings of this study (1, 24, 25). As the results show, gender was not correlated significantly with the level of knowledge, attitude, and practice regarding oral care during pregnancy. Accordingly, it can be concluded that both males and females have a similar level of information about oral care in pregnant women.

With this background in mind, it is necessary to provide pregnant women with the proper information. The results of a study performed by Mozaffari showed no significant relationship between the level of knowledge and the place of study (4) which was in line with the findings obtained from this study. The results of this study indicated the same quality of education in different universities. Moreover, a lack of correlation between the dentists' and gynecologists' level of knowledge with the place of education indicates that skill acquisition is an individual-based ability. However, variations can be observed in the quality of education in different universities. Nevertheless, individuals may make their serious attempts to improve their level of knowledge.

Conclusion

The dentists' and gynecologists' mean scores of knowledge, attitude, and practice were favorable in this study; however, the dentist

group obtained higher scores in this regard which was not unexpected. In general, the individuals' levels of practice was in accordance with their level of knowledge. Nonetheless, there is still a need to raise the level of knowledge and consequently promote the level of practice. These results necessitate the presence of further professional training and the retraining of the individuals. Furthermore, a closer professional collaboration between gynecologists and dentists is also essential to improve the oral and dental health of pregnant women. Therefore, more interactions should be implemented between oral health practitioners and health care providers to enhance their performance.

Footnotes

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Conflict of Interest

There is no conflict of interest regarding the publication of the study.

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