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Knowledge and Practice of General Dentists and Dental Students about Treatment Considerations during Pregnancy and lactation in Yazd, Iran

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ABSTRACT

Background & aim: Pregnant and lactating women need special considerations for dental treatments. This study was performed to evaluate the knowledge and practice of general dentists and dental students about treatment considerations during pregnancy and lactation.

Methods: In this cross-sectional study, 96 general dentists and 66 last-year dental students were selected by random number table and census, respectively. The knowledge and practice of the participants was assessed using a self-structured questionnaire on a self-report basis. Data were analyzed by SPSS software (version 17).

Results: The mean knowledge score of dentists and dental students was 8.56±2.33 and 8.11±2.23 (out of 13), with no significant difference between the two groups. There was a significant association between knowledge and age (p= 0.001) as well as work experience of dentists (p= 0.001). A significant relationship was found between students' knowledge and their gender and average grade point (p=0.040 and p=0.001). 0.6% of dentists and 28.7% of dental students did not choose the correct position on the unit during pregnancy. 32.3% of dentists and 27.3% of dental students wrongly considered adrenaline-containing anesthetics as contraindicated during pregnancy. 22.9% of dentists and 12.1% of dental students incorrectly considered Metronidazole and 20.8% of dentists and 30.3% of dental students Barbiturates as safe medications during lactation.

Conclusion: Considering the level of knowledge and practice of general dentists and dental students about treatment considerations during pregnancy and lactation, it is suggested to consider this subject in dentistry education programs and also to hold training workshops to improve the level of knowledge into ideal.

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Introduction

Oral health is necessary for overall health of pregnant women and their babies. Pregnancy may be associated with some negative oral consequences. For example, the prevalence of periodontitis increases during pregnancy, which may lead to premature birth or low birth weight (1-3). Due to the association between increasing gestational age and more need for periodontal treatment in pregnant women, oral health evaluation should be considered not only prior to, but also during the pregnancy (4). Streptococcus mutans also may be transmitted through the communication between mother and infant; therefore it is needed to reduce the amount of maternal oral microflora via preventive strategies to limit the risk of caries in children (5). Meanwhile, dental treatments such as scaling, restorations, radiographs, etc. may be necessary to maintain oral health depending on the mother's condition. Although pregnancy is

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not a medical disease, special considerations should be considered during pregnancy and subsequently breastfeeding. So dentists are required to have adequate levels of knowledge about the best time for dental treatments, proper position of pregnant women on the unit during dental visits, safe local anesthetics, safe antibiotics and analgesics and also the conditions in which radiographs are allowed.

Although dental considerations in pregnant women are not as complex as in patients with systemic diseases and pregnant women can be treated effectively in dental office, dentists often avoid treating them due to lack of knowledge or experience regarding pregnancy. On the other hand, there is a traditional misconception in our society that dental treatments will be harmful for pregnant mothers and their fetus (6). In such situations, the role of dentists is important to provide them the scientific information and encourage them to undergo required dental treatments. Based on the literature, most dentists generally are reluctant to do treatment pregnant women, usually do not consult a gynecologist before treatment and do not believe that dental treatment or radiography can be done at any time during pregnancy if necessary (7-13). A large part of dental community believe that periodontal surgery, amalgam repair and using analgesics can be harmful to pregnant women (13). Surprisingly, it has been reported that gynecologists feel more comfortable to provide oral health advice to pregnant women compared to dentists (14). According to the studies conducted in Saudi Arabia (15), Nigeria(16) and also Mashhad, Iran (17), the level of knowledge and practice of dentists is not suitable about providing dental treatment to pregnant and lactating women. Due to the limited information available in the field of oral health management in pregnant or lactating women referred to dental clinics in Yazd and even in Iran, the present study was performed to evaluate the knowledge and practice of general dentists and senior dental students of Yazd dental School regarding the considerations of dental treatments during pregnancy and breastfeeding in 2020.

Materials and Methods

This cross sectional study was conducted in 2020 on 66 last-year dental students studying in the faculty and selected by census method and 96 general dentists working in Yazd and selected by the sample size determination formula and using a random number table. Considering the 95% confidence level and the amount of standard deviation for the knowledge score from similar previous study (18), as approximately 2.5 and considering the estimation error of 0.5, 96 dentists were recruited.

$$n = \left(\frac{zs}{d}\right)^2$$

The exclusion criteria were incomplete questionnaires. In the group of dentists, there were 3 sample loss which were replaced with 3 new ones.

To collect data, a self-strructured questionnaire was designed including demographic questions (gender, age, work experience and average grade point), five basic questions on attitude and practice and 13 questions on knowledge (related to treatment & medical prescriptions). Validity of the questionnaire was confirmed by a judgment of a panel of experts including six professors of periodontology department. The experts graded the items of the questionnaire based on a five-point Likert scale, including absolutely important (score 5), important (score4), moderately important (score 3), slightly important (score 2), and not important at all (score 1). In order to confirm the reliability of the questionnaire, it was distributed among 10 dental students and 10 dentists apart from participants. Data were extracted after collecting the questionnaires. Cronbach's alpha was calculated as 0.760 for this questionnaire, which confirmed its reliability.

Students were asked to answer the questionnaire at the end of a working day in the comprehensive treatment module in dental faculty. Referring to the private offices of the city, the dentists' questionnaire was distributed among the participants. Questionnaires were collected after 10 minutes. The frequency of answers to the basic questions on attitude and practice was also presented as a percentile. In scoring the questions on knowledge, each correct answer received score 1, incorrect response 0, and "I do not know" score 0.1. The

maximum attainable score was 13. The respondents were divided into four groups based on their scores: high knowledge (11-13), good knowledge (8-10), fair knowledge (5-7), and poor knowledge (< 4). Fair and poor levels of knowledge considered as not acceptable. Data were analyzed by SPSS software (version 17) and P< 0.05 was considered as significant.

This study was approved by the Ethics Committee of Shahid Sadoughi University of Medical Sciences (IR.SSU.REC.1398.224). Furthermore, the participants were also ensured about confidentiality of the collected information.

Results

In this study, data of 162 completed questionnaires were analyzed. The demographic information of the two study groups was provided in Table 1. The relative frequency of answers to knowledge questions (related to treatment & medication prescribing) was presented in Table 3.

The participants' total mean score of knowledge about "dental considerations during pregnancy and lactation" was 8.37±2.29 and those were 8.5 ±2.33 in dentists and 8.11± 2.23 in dental students which both were in acceptable range. The results of t-test didn't show any statistically significant difference between the mean knowledge scores of dentists and dental students (P= 0.214).

According to Table 4, no statistically significant difference was observed between the mean knowledge scores of male and female dentists (P= 0.983).

Table 1. Frequency distribution of the participants according to the demographic characteristics

Variable	N (%)
Group	
Student	
Dentist	66 (40.7 %)
Gender	
Male	52 (54.2 %)
Female	44(45.8%)
Student	
Male	33(50%)
Female	33(50%)
Age group	
Dentists	
26-34	46(47.9%)
34-60	50(52.1%)
Students	
23-24	35(53%)
25-28	31(47%)
Work experience of dentists	
1-10	42 (43.8%)
11-24	54 (56.2%)
Grade Point Average (GPA) of students	
14.6-16	28 (42.5%)
16.1-17.3	36 (57.5%)

The relative frequency of answers of dentists and dental students to attitudinal-practical questions was shown in Table 2.

Table 2. Frequency distribution of the participants' answers to basic questions

Questions	Dentist		Student	
	Yes N (%)	No N (%)	Yes N (%)	No N (%)
Have you ever performed dentistry treatments for pregnant patients?	72(75)	24(25)	21(31.8)	45(68.1)
Do you prefer to refer a pregnant patient for her dentistry treatments to your colleagues in the future?	72(75)	24(25)	49(74.2)	17(25.8)
Do you think that providing pregnant women with health instructions is essential prior to any treatments?	72(75)	24(25)	49(74.2%)	17(25.8)
Do you think that it is essential to consult with a gynecologist before treating pregnant patients?	72(75)	24(25)	51(77.3%)	15(22.7)
Do you think that you have enough required knowledge about dental considerations during pregnancy and breastfeeding?	73(76)	23(24)	48(72.7)	18(27.3)

Table 3. Frequency distribution of dentists' answers to knowledge questions (related to treatment and medication prescribing)

Options	Group	
	Dentist	Student
	N (%)	N (%)
Is taking dental radiography for pregnant patients absolutely contraindicated?		
Yes	0 (0%)	5 (7.5%)
*No	79 82.3%)	43 (65.2%)
I do not know	17 (17.7%)	18 (27.3%)
What is the best period of time for dental treatment of pregnant patients?		
First trimester	2 (2.1%)	2 (3.1%)
*Second trimester	79 (82.3%)	57 (86.4%)
Third trimester	14 (14.6%)	4 (6%)
No trimester	1 (1%)	3 (4.5%)
Which type of local anesthetic can be used in pregnant patients for block injection?		
* Lidocaine	63 (56.6%)	9 (13.6%)
Mepivacaine	17 (17.7%)	12 (18.1%)
Bupivacaine	9 (9.4%)	9 (13.6%)
Articaine	7 (7.3%)	36 (54.5%)
Should injections of adrenaline-containing anesthesia be avoided during pregnancy?		
Yes	31 (32.3%)	18 (27.3%)
*No	31 (32.3%)	19 (28.8%)
I do not know	34 (35.4%)	29 (43.9%)
Is amalgam repair safe during pregnancy?		
Yes	83 (86.5%)	56 (84.9%)
*No	5 (5.2%)	4 (6.1%)
I do not know	8 (8.3%)	6 (9%)
What is the right position on dental unit in the last trimester of pregnancy?		
Lying to the right	22 (22.9%)	2 (3%)
* Lying to the left	57 (59.4%)	47 (71.3%)
Supine	12 (12.5%)	3 (4.5%)
Perfect sitting	5 (5.2%)	14 (21.2%)
In which period of pregnancy using nitrous oxide is safe?		
First trimester	6 (6.3%)	3 (4.5%)
Second & third trimester *	48 (50%)	40 (60.6%)
safe in all trimesters	17 (17.7%)	4 (6.1%)
Unsafe in all trimesters	25 (26%)	19 (28.8%)
In which period of pregnancy using Aspirin and Ibuprofen is prohibited?		
First trimester	20 (20.8%)	26 (39.4%)
Second trimester	3 (3.1%)	2 (3%)
Third trimester*	49 (51%)	32 (48.5%)
Totally safe	24 (25%)	6 (9.1%)
Which analgesic is safe during pregnancy?		
Acetaminophen*	69 (71.9%)	52 (78.8%)
Naproxen	2 (2.1%)	2 (3%))
Acetaminophen Codeine	22 (22.9%)	12 (18.2%)
Indomethacin	3 (3.1%)	0 (0%)
What are the side effects of using narcotics during pregnancy?		
Preterm delivery	10 (10.4%)	5 (7.6%)
Cleft of lip and palate	17 (17.7%)	11 (16.7%)
Delayed delivery	24 (25%)	9 (13.6%)
Respiratory depression*	45 (46.9%)	41 (62.1%)
What is the reason for not prescribing Tetracycline during pregnancy and lactation?		
Fetal bradycardia	2 (2.1%)	2 (3%)
Delayed delivery	2 (2.1%)	1 (1.5%)
Tooth discoloration*	89 (92.7%)	59 (89.4%)

Options	Group	
	Dentist	Student
	N (%)	N (%)
Respiratory depression	3 (3.1%)	6 (9.1%)
Which drug should be avoided during pregnancy, especially in the third trimester, but is safe during breastfeeding?		
Tetracycline	3 (3.2%)	4 (6.1%)
Metronidazole	22 (22.9%)	8 (12.1%)
Ibuprofen*	51 (53.1%)	34 (51.5%)
Barbiturates	20 (20.8%)	20 (30.3%)
Which of the following antibiotics is contraindicated in pregnancy?		
Amoxicillin	2 (2.1%)	2 (3%)
Cefixime	9 (9.4%)	10 (15.2%)
Metronidazole*	79 (82.2%)	46 (69.7%)
Penicillin V	6 (6.2%)	8 (12.1%)

The difference between the mean scores of dentists' knowledge was statistically significant in terms of the participants' age group (P= 0.001), so that the mean score of knowledge in the age group of 35-60 years was higher than the age group of 26-34 years.

Table 4. Comparison of the mean scores of knowledge of participants in terms of demographic variables

Variables	Mean± SD	Max.	Min.	P-value
Dentists				
Gender				
Male	8.56±2.29	13	2	0.983
Female	8.57±2.39	13	3	
Age groups				
26-34	7.73±2.83	13	2	0.001
35-60	9.32±1.37	13	7	
Work experience (year)				
1-10	7.54±2.74	13	2	0.001
11-24	9.42±1.44	13	7	
Students				
Gender				
Male	7.54±2.32	12	5	0.040
Female	8.67±1.88	12	4	
Age group				
23-24	8.56±2.32	12	4	0.203
25-28	8.42±2.06	12	4	
GPA				
14.6-16	7.15±2.03	12	4	0.001
16.1-17.3	8.94±2.12	12	5	

T-test

Moreover, the mean score of dentists' knowledge in the group with 11-24 years of dental work experience was significantly higher than the group with 1-10 years of work experience (P= 0.001). No statistically significant difference was found between the mean knowledge scores of students in the two age groups (P= 0.203). The difference in the mean score of students' knowledge by gender was statistically significant (P= 0.040), so that the mean score of knowledge of women was higher than men. Furthermore, the mean score of students' knowledge in the group with a grade point average (GPA) of 16-17.3 was significantly higher than the group with a GPA of 14.6-16 (P-value = 0.001).

Discussion

Recently there were few studies done on senior dental students and dentists in different parts of the world to assess their knowledge about treatment consideration during pregnancy and lactation. The aim of this study was to evaluate the response of our current students as well as graduates to give them more confidence in treating these two groups of women as they need to be skilled in potential dental emergencies and also have enough knowledge about what kind of prescription can be advised and what treatment was permitted in expecting pregnant or lactating mother.

According to the findings of the present study, 75% of the dentists stated that they performed dental treatment for pregnant patients, while this rate was significantly lower (31.8%) for the dental students. This difference in the outcomes of the present study may be due to the fact that pregnant women prefer to go to a dentist's office rather than to a dental school, as this is likely to make them more relaxed. In addition, some dental students and their supervisors are concerned about accepting pregnant patients and may refuse to treat them. In the study by Swapna, 62% of the dental students reported that they have not provided dental treatment to any pregnant women (18) and the main reason was low confidence of dental students. In the present study, most of the dentists and dental students provided oral health instructions for pregnant women and they adhered to consulting a gynecologist prior to taking any dental treatments. Majority of dentists and dental students thought that they have enough required knowledge about dental considerations during pregnancy and breastfeeding, which of course, was not consistent with final obtained results. This information has rarely been reported in previous studies, which limited the possibility of comparison.

The findings of the present study showed that participants' mean score of total knowledge about "dental considerations during pregnancy and lactation" was 8.37 out of 13, which is evaluated as good level. This result is consistent with the findings of similar studies conducted in this field. In the study conducted by Mossanan Mozafari, the level of knowledge of general and specialized dentists about dental considerations in pregnant and diabetic patients was assessed as average (17). In a narrative review by Cardoso, most studies have shown that although many experts say they have enough knowledge about dental considerations during pregnancy, this does not guarantee that some dentists will properly answer some of the questions in this area. Since the treatment of pregnant women should never be neglected, it is essential that these specialists provide these services, either through the development of protocols or that higher education institutions take a more intensive approach to this content (19).

The results of the present study showed no statistically significant difference between the knowledge mean scores of dentists and dental students as well as male and female dentists. Examination of knowledge scores among different age groups showed that the mean score of dentists' knowledge in the age group of 35-60 years was higher than the age group of 26-24 years. The mean score of dentists' knowledge in the group with 11-12 years of work experience was significantly higher than the group with 1-10 years of work experience. No statistically significant difference was observed between the students' mean scores of knowledge in the two age groups. However, the difference between the students' mean scores of knowledge was significant in terms of gender, so that the mean scores of knowledge was higher in female than male. In addition, mean scores of the students' knowledge in the group with a GPA of 16.1-17.3 was significantly higher than the group with a GPA of 14.6 to 16. On the contrary, Mossanan Mozafari (17) showed no difference between male and female dentists regarding their knowledge scores. They also noted that increased work experience had no effect on dentists' level of knowledge. This difference may be justified by indicating that the main source of receiving knowledge for the selected participants was their academic studies, not their work experience or post-graduate learning such as retraining courses.

According to the guidelines provided by the Academy of Pediatrics and American Association of Obstetricians and Gynecologists, "Diagnostic dental radiographs should not be performed during pregnancy, unless these

radiographies be necessary and was not attainable through other means (20)." It is estimated that there is a 1% increase in congenital anomalies after exposure to 10 rad (100 mg) fetal dose. As diagnostic doses in dentistry are less than 10 rads, such abnormalities cannot be attributed to diagnostic doses of dental radiographs (21). In short, the contraindication of taking radiographs during pregnancy is not absolute. In the present study, 76% of the dental students indicated that radiography should be absolutely prohibited in pregnant women, while none of the dentists believed this. This discrepancy may be due to the students' lack of knowledge or insufficient attention to the question. In a similar study in Karachi, Wali reported that 47.68% of the dentists believed that radiography could be performed during pregnancy and 52.7% believed that the second trimester was the most safe time for radiography (22). According to AlSadhan, 43% of the dentists stated that they never take an X-ray of a pregnant patient under any circumstances (10). In the study by Zanata (23), 16% of the dentists considered that x-rays was safe for pregnant patients, 38% stated that x-rays were safe only after the first trimester, and 8% were opposed to take x-rays at any time during pregnancy. Huebner (8) noted that 54% of the dentists were opposed to tak full-mouth radiographs in pregnant patients. Pina and Douglass showed that 77% of the dentists performed radiographs on pregnant patients after 10th week of pregnancy (24). In the study by Costa (25), 18% of general dentists believed that taking radiography was not safe for a pregnant patient. Similarly, 40% of dentists in the study by Caneppele (26) stated that they do not take any X-rays from a pregnant patient. According to the study of Razi et al in Tabriz (21), general dentists didn't have enough knowledge about the safety of diagnostic radiation doses in pregnant women and only 28.4% of them were aware that diagnostic doses cause no problems in physical and mental development of the fetus.

Selective dental treatments should be avoided during first and third trimester (27). The ideal time to perform dental treatment is the second trimester (17 to 28 weeks of gestation). In the present study, 2 (2.1%), 79 (82.3%), and 14 (14.6%) dentists selected the first, second, and third trimesters, respectively as the best time for dental treatments; while 1 dentist (1%) believed that dental treatments should never be performed at any time during pregnancy. Moreover, 2 (3%), 57 (86.4%), and 4 (6.1%) of dental students responded that dental procedures can be performed in the first, second, and third trimesters of the pregnancy, respectively; whereas, 3 (4.5%) students answered that dental treatment is not permissible during pregnancy at all. Although in the present study, low percentage of all participants chose the first trimester of pregnancy as the best time period for dental treatment, due to the importance of this issue and the danger that unawareness of the proper time for selective treatments may pose to pregnant patients, more attention should be paid to training this subject to dental students during their education. In a similar study by Costa (25), 73.7% of the dentists considered the second trimester as the best time period for dental treatment. In another study by Braimoh (16), 82.4% of the participants reported that they will perform dental treatment at any trimester of pregnancy. Pistorius et al. reported that 36% of the dentists postponed dental treatments to the postpartum and 10% performed essential treatments during the pregnancy. Less than 50% and 9% of the dentists didn't perform treatment in the first and second trimesters, respectively (28). In the study by Capucho (29) , 71% of the dentists were unaware of the best time to treat pregnant patients.

Since some anesthetics can across through the placenta and affect the fetus health, more information about safety of anesthetics during pregnancy is crucial. FDA (Food and Drug association) has classified lidocaine and Articaine as Class B and allowed to be injected during pregnancy, but Articaine should not be used for block injections and is only permitted for infiltration injections. Long-lasting anesthetics such as Mepivacaine and Bupivacaine are in C category and should be used with caution and only after consulting physician. In general, lidocaine is the anesthetic of choice due to its safety in pregnancy(30). In the present study, the most commonly used

anesthetic by dentists was lidocaine, followed by Mepivacaine. About half of the students (54.5%) mistakenly considered that Articaine was the preferred anesthetic for block injection in a pregnant patient. In the study conducted by Pistorius (28), 14% of participants considered that no types of anesthesia was allowed during pregnancy. Capucho (29) reported that 43% of the dentists were unaware of the best anesthetic for a pregnant patient. In another study by Navarro et al. (31), 60% of the dentists correctly considered lidocaine followed by Mepivacaine as the anesthetic of choice in treating pregnant women (22%). According to FDA, dentists can use vasoconstrictors if it is necessary during dental procedures, but in the present study, 67.7% of general dentists and 71.2% of students were unaware of their safety in pregnancy. AlSadhan (11) concluded that 75% of the dentists reported using lidocaine without vasoconstrictors for pregnant patients.

In the present study, the majority of dentists (86%) and dental students (83%) stated that amalgam repair was safe for pregnant patients. Considering the study by Swanpa (18), about half of the dental students were not sure about the safety of compounds containing mercury for the pregnant women. Moreover, Aljulayfa et al. (15) reported that 56.6% of the dental students indicated that using amalgam was safe in restoring the pregnant women's teeth, 21.1% considered it unsafe, and 22.4% had no idea in this regard.

Clark et al. examined the effect of pregnant patients' position on dental unit during treatment and concluded that the risk of hypotension was high in a supine position during the second and third trimesters of pregnancy. This is due to the reduction of venous return to the heart through compression of the inferior vena cava by the uterus, which can lead to a 14% reduction in cardiac output (32). In the present study, the results showed that in terms of the appropriate position for treatment in the third trimester of pregnancy, most of the dental students (71.2%) and dentists (59.4%) replied correctly (lying to the left position). The majority of participants knew that the supine position was not suitable for the pregnant patients; so, their knowledge in this field can be considered desirable. According to Patil (33), only 56% of the dentists treated pregnant patients in lying-to-the-left position.

Based on the results of the present study, the participants' knowledge about using nitrous oxide in pregnancy was not at a good level. Improper use of nitrous oxide in the first trimester can cause respiratory depression in the fetus and miscarriage (33). In the present study, 6% of dentist and dental student mistakenly selected 'the first trimester' as the safe period and 27% mistakenly believed that this drug was contraindicated during the whole pregnancy period. This finding can be justified by the fact that prescribing nitrous oxide due to the legal considerations is not allowed by general dentists in Iran; so, dentists and dental students have low information about its application.

Dentists usually have many options in prescribing analgesics for normal patients, but this situation changes for pregnant patients. The participants' knowledge about the prohibition of prescribing Aspirin and Ibuprofen in pregnancy was not satisfactory; 18.5% of the participants in the present study considered these drugs unimpeded in pregnancy. Intake of Aspirin throughout the pregnancy as well as administration of Ibuprofen in the third trimester can cause preterm labor and bleeding tendency(34, 35). In this regard, Acetaminophen is the analgesic of choice in pregnant patients and the participants of the present study had a favorable level of knowledge in this case, so that 74.4% considered Acetaminophen as safe. Followed by Acetaminophen, Naproxen (2.5%), Acetaminophen Codeine (21%), and Indomethacin (1.9%) were considered safe by the participants. In a similar study by Navarro et al., Acetaminophen was recommended by 68% of dentists to pregnant women as an analgesic. 31.1% of participants did not prescribe anti-inflammatory drugs, however the same number of them, recommended other NSAIDS such as Piroxicam and Nimesulide (31) . AlSadhan (11) found that 5 to 13% of the dentists prescribed Ibuprofen, Aspirin and Codeine to pregnant patients, while 76 to 85 % of the participants said that they didn't prescribe any of these drugs. According to Zanata (23), 67% of the dentists considered Acetaminophen as the first choice for analgesia, while 21% preferred

Dipyrone. Huebner et al. (8) also reported that 13% of the dentists didn't choose Acetaminophen to a pregnant patient; whereas, 28% prescribed Aspirin to pregnant patients. In the study by Caneppele (26), Acetaminophen was the most prescribed drug by the participants (85%).

According to FDA guidelines, Tetracyclines including Doxycycline and Minocycline may cause depression of bone growth, enamel hypoplasia and gray-brown tooth discoloration in babies and should be avoided during pregnancy and breastfeeding. Penicillins such as Amoxicillin and penicillin V and Cephalosporins such as Cefixime, are safe choices during both pregnancy and breastfeeding period. Also, Metronidazole should be avoided in both pregnancy and breastfeeding (36). In the present study, fortunately majority of the dentists and dental students (92.7% and 89.4%, respectively) were aware of tooth discoloration as the main complication of Tetracyclines. Swapna (18) reported that 20% of dental students mistakenly preferred prescribing Tetracycline to pregnant patients. In the present study, 77.2%, of the dentists knew that Metronidazole is contraindicated during pregnancy. Similarly, AlSadhan (11) also showed that only 15% of the dentists wrongly prescribed Metronidazole for pregnant patients. According to Patil (33), 10% of dentists who treated pregnant women and 12% of dentists who treated lactating women prescribed antibiotics for them, regardless of possible contraindications. In the study of Aragoneses, most dentists had sufficient knowledge about the use of antibiotics in pregnant / lactating women, but in practice, a significant proportion of participants prescribed inappropriate antibiotics during these periods (37).

Barbiturates are dangerous for the fetus during pregnancy because they increase the risk of birth defects in the baby. Barbiturates enter the breast milk and may affect the baby, causing drowsiness, decreased heart rate and shortness of breath in the baby (11). So they should be avoided in pregnant / lactating women. In the present study, 20.8% of dentists and 30.3% of students mistakenly considered Barbiturates as safe in breastfeeding. Ibuprofen usage is forbidden in the third trimester of pregnancy but it can be used in breastfeeding. About half the dentists and dental students were aware of Ibuprofen safety during breastfeeding.

Barriers deterring pregnant or breastfeeding women from receiving dental care apart from high costs, are included concerns about fetus safety during dental procedures, beliefs about the unavoidable effects of pregnancy on dental health, and a lack of awareness of the importance of oral health during pregnancy. In addition, dentists may be reluctant to provide dental care during pregnancy, which hinders oral health care for pregnant women (38). Therefore, educating dentists both in terms of raising awareness and improving their attitude-functional status in this area, can increase the role of dentists in reducing the barriers for oral care in pregnant and lactating women.

Collecting questionnaires from private offices at the defined time to complete each questionnaire was associated with difficulties. As far as the authors knew, the other studies in this field were limited to pregnancy and did not address breastfeeding and its related considerations. Although addressing breastfeeding is a strength of the present study, it was not possible to compare the findings with other studies.

Conclusion

The knowledge of senior dental students and general dentists in Yazd about treatment considerations during pregnancy and lactation was acceptable, but it will be better to consider this subject on the priority of dentistry education programs and also hold training workshops to improve the level of knowledge into ideal.

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Conflicts of interest

Authors declared no conflicts of interest.

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