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Awareness of dental interns in managing cases of pregnant women in Saudi Arabia



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Abstract Pregnant patients are seen commonly in dental offices. However, the possible side effects of dental care on these patients can be misunderstood by both patients and dentists concerned. Therefore, it is important for dental interns, who work in almost every dental office, to know about dental management of pregnant women.

A survey which consisted of 18 items, was conducted between December 2011 and March 2012 in different dental colleges in Saudi Arabia. The aim of the present study was to objectify dental interns' knowledge of dental management of pregnant women.

152 dental interns responded to the survey (63.3% of the total). About 27% of dental interns in the study had never seen pregnant women in their clinic. The majority of dental interns see gingival inflammation as the most oral manifestation in pregnant women (92.1%), and Amoxicillin being the most common antibiotic prescribed for pregnant women (96.1%), when (96.1%) of the dental interns are prescribing it. Regarding their dental school subjects which include managing pregnant women, 29.6% of the dental interns described it as adequate, while 48% said it was little helpful, and 22.4% agreed that it was insufficient. However only 20.4% look for more additional sources of information, while 14.5% said they rarely do. This finding underscores the need to improve the knowledge and information of fundamentals of dental management of pregnant women. Improvement is needed to increase the awareness of dental interns in Saudi Arabia toward this kind of critical treatment.

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1. Introduction

In 2006 and 2007, the authors conducted a survey of 1604 general dentists in Oregon which asked dentists about their attitudes, beliefs and practices regarding dental care and management of pregnant patients. Most respondents (91.7%) agreed that dental treatment should be part of prenatal care.

However two-thirds of the respondents were interested in receiving continuing dental education (CDE) regarding the care of pregnant patients.¹ Dentists who were males had low knowledge scores compared with females who had moderate to high knowledge scores.²

According to the Surgeon General's report, Oral Health in America, perceptions must change to improve oral health and to make it an accepted component of general health.³ Untreated oral disease may compromise the health of the pregnant female and the unborn child.⁴ Most pregnant women of all ages do not seek dental care even though 50% of them may have dental problems.⁵

Pregnant women are at risk of many harmful procedures. A study of over 152,000 women who gave birth between 1996 and 2000 found that almost half were prescribed medications for which there was no clinical evidence of safety for use during pregnancy.⁶ The US Food and Drug Administration has defined five categories of drugs according to the risk they pose to pregnant women and their fetuses.⁷ These categories provide guidance to the relative safety of the medication for use by pregnant women. Category A includes drugs that have been studied in humans and have evidence supporting their safe use. Category B drugs show no evidence of risk to humans. Generally, these drugs are considered acceptable for use during pregnancy. Category C drugs such as aspirin and aspirin-containing products, may be used with caution, whereas drugs in categories D (i.e. Tetracycline) and X are not intended for use during pregnancy.⁸

Major biological risks from radiation exposure are carcinogenesis, fetal effects, and mutations.⁹ Health benefits will outweigh the risk from radiation exposure from any radiographic examination if:

- (1) The examination is clinically indicated and justified,
- (2) Technique is optimized to ensure high quality diagnostic images, and
- (3) Principles are followed to minimize exposure.⁹

Most dentists (77%) would take a radiograph of a patient 10 weeks into the pregnancy seeking treatment for dental pain.¹⁵

2. Oral conditions associated with pregnancy

Changes in the oral cavity have been associated with pregnancy. These include alterations in both the hard and soft tissues. An increase in caries has been associated with carbohydrate loading as snacking becomes more frequent.¹⁰ In some instances, morning sickness and vomiting may contribute to the onset of perimylolysis, an erosion of the lingual surfaces of the teeth caused by exposure to gastric acids. A confounding factor is that pregnancy-associated hormonal changes may cause dryness of the mouth. Approximately 44% of pregnant participants in one study reported persistent xerostomia.¹¹

The majority of the physicians (81%) agreed that pregnancy increases the tendency to have gingival inflammation.¹⁴ From a periodontal perspective, signs of gingivitis (i.e. bleeding, redness, swelling, and tenderness) are evident in the second trimester and peak in the eighth month of pregnancy.¹² Periodontitis during pregnancy, if left untreated, has been shown to contribute to preterm, low birth weight infants.¹²

The objectives of professional oral health care during the first trimester include avoiding fetal hypoxia, premature labor/abortion, and teratogenic effects⁴. Due to the increased risk of pregnancy loss, use of nitrous oxide may be contraindicated in the first trimester of pregnancy¹³. The safest and most comfortable time for dental treatment is during weeks 14–20 of gestation. Elective restorative and periodontal therapies during the second trimester may prevent any dental infections or other complications from occurring in the third trimester.⁴

3. Aim of study

The present study aims to objectify dental interns' knowledge of dental management of pregnant women.

4. Materials and methods

Our cross-sectional survey was conducted between December 2011 and March 2012 in different dental colleges in Saudi Arabia. The questionnaire was designed to contain 18 questions in four pages. It was developed in consultation with oral medicine specialist to improve its content validity.

This questionnaire first contained questions about the dental intern profile: sex, grade point average (GPA), etc. The knowledge assessment survey included questions about dental management of pregnant women. Also, there were some questions regarding awareness of dental intern with these types of cases and how to deal with them.

The survey questionnaire was distributed randomly to about 240 Saudi dental interns both males and females in the King Saud University in addition to 3 different dental colleges (Riyadh Colleges, Dammam University, and King Khalid University), who were working in hospitals and universities in the kingdom.

Of 240 dental interns approached, 152 (63.3%) participated in this study, 97 (63.8%) were males while 55 (36.2%) were females, and their GPAs out of 5 is given in Table 1. Among those who could not participate (36.7%), some refused due to lack of time or did not read the invitation we sent earlier, and some did not write the full profile information or did not answer all questions, so they were not counted in the survey results.

We distributed the questionnaire in two ways, either by delivering it directly -hard copies- to dentists or by -soft copies- e-mailing it.

Table 1 Sample shows distribution and their GPAs.

Sex	Frequency	Valid percent (%)
Male	97	63.8
Female	55	36.2
Total	152	100
GPA (out of 5)	Frequency	Valid percent (%)
< 3	24	15.8
3–3.5	62	40.8
3.5–4	39	25.7
> 4	27	17.8
Total	152	100.0

P value < 0.05.

Analysis of survey results was performed using the Statistical Package for the Social Sciences SPSS. A P -value < 0.05 was considered to be statistically significant.

5. Results

Regarding the 152 dental interns who took part in this study, 97 were males (63.8%) and 55 (36.2%) were females. About 27% of dental interns in the study have never seen pregnant women in their clinic, 50% of the dental interns have not seen more than five cases, 13.8% of them have seen from five to ten, while 9.2% of the dental interns in the study have seen more than 10 patients.

When we ask about their information related to dental management of pregnant women that has been given at dental school, 29.6% of them said “it is sufficient”, and 48% of them said “it is just little”, and 22.4% of them said “it is inadequate” (Fig. 1).

About 20% of dental interns are always looking for additional information about dental management of pregnant women, 59.2% of them said “sometimes”, 14.5% of them said “rarely”, while 5.9% said they never look for any sources of information (Fig. 2). Regarding their sources of information, 61.2% stated they have taken their information from books and lectures, 3.3% from brochures, 30.3% from internet, while 5.3% told that videos are their preferred way.

One of the key objectives of this study was to assess the dental interns’ knowledge and we specifically asked about

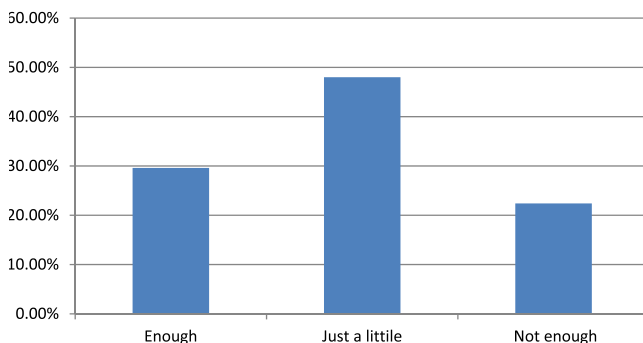


Figure 1 Shows how did the participants evaluate their knowledge regarding pregnant women management which has been taught during their undergraduate study.

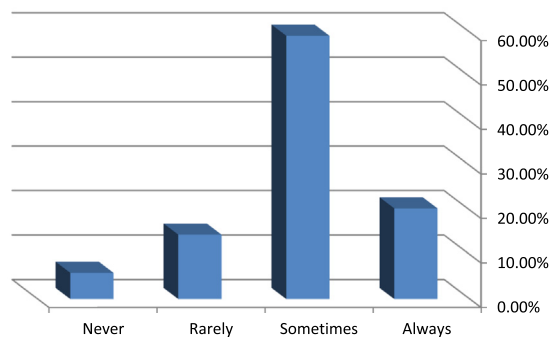


Figure 2 Shows frequency of looking for additional information about managing pregnant women.

the best period to treat pregnant women. Most of them answered that the second trimester is the best period to treat pregnant women (82.9%) (Table 2).

Regarding the most suitable position for pregnant women in dental clinic, 13.8% of them said “flat on her back”, 61.8% of them said “placing a small pillow under the woman’s right hip”, while 24.3% of them did not know the most suitable position for pregnant women.

Most of them answered that the most common oral manifestation in pregnant women is gingival inflammation (92.1%). However they thought pregnancy with local factor (dental plaque) is more common than pregnancy without local factor in oral health (95.3%). As diagnostic X ray is needed for pregnant women, 63.8% of them said “no problem with that”, 27% said “it can cause a problem”, while 9.2% simply did not know.

Regarding the complications and side effects that could result from the use of local anesthetic with epinephrine, 9.9% of the dental interns do not know any, 60.5% of them said “we can use it without any complications”, while 29.6% said “it might cause problems”.

Regarding the precautions during using mercury restorations, 56.6% of them said “it is safe to use it”, 21.1% of them said “it is not safe”, while 22.4% of them simply did not know. Most of dental interns answered that oral hygiene instruction is important (98%).

Amoxicillin is the antibiotic drug of choice for most of the Saudi dental interns (96.1%) (Table 2). Most of the Saudi dental interns (76.3%) prefer to prescribe paracetamol as analgesic, 18.4% prefer ibuprofen, while 5.3% prefer aspirin.

6. Discussion

The aim of study is to objectify dental interns’ knowledge of dental management of pregnant women. The 152 dental interns surveyed are working in hospitals and universities in Saudi Arabia.

Prior to the summary, some limitations in this work should be acknowledged. The participants of the current study are not representatives of all dental interns in Saudi Arabia and the sample size is small to some extent. The geographic area represented by the respondents was quite large. There was lack of available and reliable data in addition to lack of prior research studies on the topic. Lastly, the fluency in language (English being the second language for the researchers).

70.4% of surveyed dental interns think that the information that has been given about dental management of pregnant women in dental school was less than enough (Fig. 1). In a similar study approximate numbers were registered, two-thirds of the respondents were interested in receiving continuing dental education (CDE) regarding the care of pregnant patients.¹ However only 20.4% of the sample are always looking for additional information in this subject, while about 20% of them either are rarely or never looking for additional information (Fig. 2).

Regarding gingivitis, our study shows that about 92% of the participants agreed that gingivitis is the most oral manifestation in pregnant women. Another study had registered that about 81% of participants agreed that pregnancy increases the tendency to have gingival inflammation.¹⁴

Using a diagnostic dental X ray in pregnancy, 63.8% of them said “no problem with that”, 27% said “it can cause a problem”, while 9.2% simply did not have any idea. It clearly shows that most of them consider the use of X ray when it is

Table 2 Answers to questions.

Do you think that the information that was taught about dental management of pregnant women in dental school was sufficient?	Diagnostic X ray in pregnant women is:
(a) It is enough 45 (29.6%)	(a) Not contraindicated 97 (63.8%)
(b) Just a little 73 (48%)	(b) Contraindicated 41 (27%)
(c) Not enough 34 (22.4%)	(c) I do not know 14 (9.2%)
What is the most frequent source of information about dental management of pregnant women you prefer?	For pregnant women patients, is it safe to use mercury restorations?
(a) Brochure 5 (3.3%)	(a) Yes 86 (56.6%)
(b) Lectures and books 93 (61.2%)	(b) No 32 (21.1%)
(c) Internet 46 (30.3%)	(c) I do not know 34 (22.4%)
(d) Video 8 (5.3%)	
What is the best period to treat pregnant women?	Which antibiotics you prefer for pregnant women?
(a) First trimester 6 (3.9%)	(a) Tetracycline 2 (1.3%)
(b) Second trimester 126 (82.9%)	(b) Amoxicillin 146 (96.1%)
(c) Third trimester 20 (13.2%)	(c) Tavanic 4 (2.6%)
What is the most oral manifestation in pregnant women?	Which analgesics you prefer to use for pregnant women?
(a) Erosion 4 (2.6%)	(a) Aspirin 8 (5.3%)
(b) Dental caries 8 (5.3%)	(b) Paracetamol 116 (76.3%)
(c) Gingival diseases 140 (92%)	(c) Ibuprofen 28 (18.4%)

indicated, furthermore 82% of dental interns are with the opinion that “the second trimester is the most suitable period to treat pregnant women” especially with dental pain. A similar study, held in Connecticut, to evaluate general dentists found that most dentists (77%) would take a radiograph of a patient 10 weeks into the pregnancy (second trimester) seeking treatment for dental pain.¹⁵

Using amalgam filling with pregnant women was a controversy issue, more than half of the sample said that it is safe to use it, while the rest was either not sure of its safety or even against using it.

The use of ibuprofen in the second trimester was significantly associated with low birth weight, moreover ibuprofen use in the second and third trimesters was significantly associated with asthma in 18 month old children.¹⁶ Yet, 18% of participants in the present study show their preference to use ibuprofen as analgesic.

7. Conclusion

This study surveyed male and female dental interns. Reviewing their knowledge about clinical management of pregnant women, they show an acceptable knowledge in some areas but they still need to have more training and continuing education during their under and post graduate life to improve their knowledge of how to handle pregnant dental patients. Improvement is needed to increase the awareness of future Saudi dentists toward this kind of treatment through continuous medical education and media services.

Conflict of interest

No conflict of interest.

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