

Special considerations by dentists while rendering dental treatment to pregnant women: a cross-sectional study

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Abstract

Objective: Oral health care has been adjudged an important component of a healthy pregnancy. The importance of maintaining good oral health during pregnancy has been emphasized due to its potential to reduce the transmission of pathogenic bacteria from mother to their babies. Special considerations are taken while rendering dental treatment to pregnant patients. This study was carried out to assess the special considerations taken by dentists while rendering dental treatment to pregnant patients

Method: The study was a descriptive cross-sectional study of fully registered dentists in the South-South geopolitical zone of Nigeria practicing in public health institutions. A multi-stage stratified sampling was done to pick 3 states from the South-South Geopolitical zone and then to pick participants for the study. The questionnaire elicited information on demographic characteristics and special considerations employed by dentists when rendering dental treatment to pregnant women. The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 17.0.

Result: Majority (94.7%) considered the gestational age of the fetus before rendering treatment to the patient. 75.2% of the respondents knew that a pregnant woman should be positioned in a special way on the dental chair while receiving dental treatment. The respondents had varied responses with regards to the position of the pregnant patients' head in relation to their feet while performing dental procedures with less than half of the respondents knowing that her head should be higher than her feet. There was statistically significant association between the position of the pregnant patient's head in relation to her feet and the status of the respondents with all the senior residents knowing the correct head position in relation to her feet.

Conclusion: There is need to do more with regards to pregnancy specific education for dentists by the way of continued dental education.

Key words: Dentist, dental treatment, pregnancy

Introduction

Pregnancy is a unique time in a woman's life and is characterized by complex physiological changes⁽¹⁾. Oral health care has been adjudged an important component of a healthy pregnancy⁽²⁾. The importance of maintaining good oral health during pregnancy has been emphasized due to its potential to reduce the transmission of pathogenic bacteria from mother to their babies^(2,3). Despite reports that dental care during pregnancy is safe⁽⁴⁾ an overwhelming number of women do not seek oral health care during pregnancy^(2,5). Pregnancy by itself is not a reason to defer routine dental

care and necessary treatment of oral health problems^(1,6). The dental care provider should be aware of the altered physiologic status of the pregnant patient to avoid inappropriate interpretation of normal changes as pathologic⁽⁷⁾. It has been reported that dentists avoid treating pregnant women because of confusion or misconception about the safety and importance of dental treatment during pregnancy⁽⁵⁾. Prevention, diagnosis and treatment of oral diseases, including necessary dental radiographs, fluoride and use of local anesthesia have been reported to be beneficial and can be undertaken with no additional fetal or maternal risk when compared to the risk of not providing care⁽⁶⁾.

Appropriate positioning of the pregnant woman can be achieved by keeping her head at a higher level than her feet, placing her in a semi-reclining position as she can tolerate while also allowing frequent position changes⁽²⁾. A small pillow may be placed under her right hip or she turns slightly to the left as needed to avoid dizziness or nausea resulting from hypotension⁽²⁾. It is important that consultation with an obstetrician is prudent prior to providing dental treatment when a co-morbidity exists^(6, 8-10).

Diagnostic X-rays should be performed utilizing the lowest amount of reasonably achievable radiation, lead shielding with an apron and thyroid collar⁽⁶⁾. Diagnosis and treatment, including needed dental X-rays can be undertaken safely during the first trimester of pregnancy^(1,10,11). Needed treatment can be provided throughout the remainder of the pregnancy, however the time period between the 14th and 20th week is considered ideal^(1,6,12,13). Treatment of emergency oral condition or infection should not be delayed as the consequences of not treating an active infection during pregnancy outweighs the possible risks^(1,6,13).

Dentists being the leading oral health care providers are in the best position to render oral health care to pregnant women. There is a need to evaluate what dentists take into consideration while rendering treatment to pregnant women hence the purpose of this study.

Materials and method

The study was a descriptive cross-sectional study of fully registered dentists in the South- South geopolitical zone of Nigeria practicing in public health institutions. A multi-stage stratified sampling using simple random sampling was done to pick 3 states from the South- South Geopolitical zone. A convenient sampling was used to pick participants for the study. This involved dentists who attended continued medical education programs in the states mapped out for the study and agreed to be part of the study.

Ethical approval was sought from the College Ethical Committee of the College of Medical Sciences, University of Benin before the commencement of this study. Written informed consent was obtained from all participants in this study.

Prior to the actual study, pre-testing of the questionnaire was completed on 20 final year dental students. This was to enable the researchers determine the appropriateness of the questionnaire as a tool for collecting the required information. The questionnaire elicited information on demographic characteristics and special considerations employed by dentists when rendering dental treatment to pregnant women.

The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 17.0. The analysis was done using frequency distribution, cross tabulations and test of significance with chi square. $P < 0.05$ was considered statistically significant.

Results

A total of 150 questionnaires were administered, 137 were filled and returned giving a response rate of 91.3%. The participants consisted of 63.5% males and 36.5% females with majority 75% in the 26-30 years age group while

Table 1. Demographic characteristics of the respondents

Characteristics	Frequency (n)	Percent(%)
Age (years)		
21-25	14	10.2
26-30	75	54.7
31-35	28	20.4
36-40	15	10.9
41-45	4	2.9
46-50	1	0.7
Gender		
Male	87	63.5
Female	50	36.5
Status		
House Officer	70	51.1
Dental Officer	11	8.0
Junior Resident	48	35.0
Senior Resident	5	3.6
Consultant	3	2.2
Total	137	100.0

Table 2. What respondents take into consideration while rendering dental treatment to pregnant women

Considerations	Yes n(%)	No n(%)
Gestational age of the fetus	127(94.2)	8(5.8)
Risk of aspiration during dental procedure	110(80.3)	27(19.7)
Risk of inducing abortions or premature delivery	116(84.7)	21(15.3)
Harmful maternal behavior		
Maternal tobacco use	129(94.2)	8(5.8)
Maternal alcohol abuse	128(93.4)	9(6.6)
Maternal cocaine use	126(92.0)	11(8.0)
Maternal marijuana use	123(89.8)	14(10.2)
Maternal diazepam use	122(89.1)	15(10.9)
Presence of Medical conditions		
Hypertensive disorders of pregnancy	128(93.4)	9(6.6)
Gestational diabetes	130(94.9)	7(5.1)
Maternal use of heparin	121(88.3)	16(11.7)
Scope of procedure		
Whether general anesthesia is necessary	91(66.4)	46(33.6)
Major surgical procedure is anticipated	94(68.6)	43(31.4)
Inhalational sedation is required	92(67.2)	45(32.8)

Table 3. Respondents' opinion of position of patient's head in relation to her feet

Position of patient's head in relation to her feet	Frequency	Percent
Be lower than her feet	22	16.1
Be higher than her feet	57	41.6
At same level with her feet	20	14.6
It does not matter	13	9.5
No response	25	18.2
Total	137	100.0

the pregnant patient in relation to her feet while performing dental procedures (**Table 3**). There was statistically significant association between the position of the pregnant patient's head in relation to her feet and the status of the respondents with all the senior residents knowing that the correct head position in relation to her feet (**Table 4**).

Discussion

Despite encouraging shifts in gender distribution of dentists⁽¹⁴⁻¹⁸⁾, the participants in this study were

Table 4. Association between opinion of head position in relation to feet and status of the respondents

Head position in relation to feet	House officer n (%)	Dental officer n (%)	Junior resident n (%)	Senior resident n (%)	Consultant n (%)	Total n (%)
Be lower than her feet	8 (11.4)	2 (18.2)	11 (22.9)	0 (0.0)	1 (33.3)	22 (16.1)
Be higher than her feet	32 (45.7)	4 (36.4)	14 (29.2)	5 (100.0)	2 (66.7)	57 (41.6)
At same level with her feet	7 (10.0)	0 (0.0)	13 (27.1)	0 (0.0)	0 (0.0)	20 (14.6)
It does not matter	6 (8.6)	2 (18.2)	5 (10.4)	0 (0.0)	0 (0.0)	13 (9.5)
No response	19 (24.3)	3 (27.3)	5 (10.4)	0 (0.0)	0 (0.0)	25 (18.2)
Total	70 (100.0)	11 (100.0)	48 (100.0)	5 (100.0)	3 (100.0)	137 (100.0)

51.1% were house officers (**Table 1**). The number of years of Practice of the respondents ranged from 1-20 years with a mean of 3.45 ± 3.7 years.

With regards to what considerations they make when rendering dental treatment to pregnant women, a majority (94.7%) claimed they considered the gestational age of the fetus before rendering treatment to the patient. However, not as many considered the risk of aspiration (80.3%) and risk of inducing abortion or premature delivery (84.7%) while rendering treatment to pregnant women (**Table 2**). There was no statistically significant association between the above considerations and the status of the respondents. Over 90% of the respondents considered various harmful maternal behavior and presence of medical conditions whereas over 60% considered the scope of dental procedure while rendering dental treatment to pregnant women (**Table 2**).

A majority (75.2%) of the respondents knew that a pregnant woman should be positioned in a special way on the dental chair while receiving dental treatment. A few (10.9%) of the respondents claimed they did not know and 13.9% were not sure if pregnant women should be positioned in a special way on the dental chair while receiving dental treatment. There was no statistically significant relationship between this and the status of the respondents. The respondents gave different positions of

predominantly males reflecting that dentistry is still a male-dominated profession in Nigeria.

It has been advocated that while developing a treatment plan for pregnant women, oral health care providers should take into consideration the gestational age of the fetus, harmful maternal behaviors and other medical conditions^(1,19,20). Majority of the respondents considered the gestational age of the fetus before rendering treatment to the patient. This is not unexpected given the fact there are various physiological changes associated with each trimester⁽²¹⁾ which may impact directly or indirectly on the type of dental treatment to be rendered. Pregnant women tend to have delayed gastric emptying owing to the hormonal changes and associated incompetent esophageal valve which predisposes them to the risk of aspiration⁽¹⁹⁾. In this study over three quarters of the respondents were alert to the possibility of aspiration in pregnant women while receiving dental treatment and this is very encouraging. Harmful maternal behaviors during pregnancy have been stated to have profound consequences⁽¹⁹⁾, over 90% of the respondents claimed to have considered various harmful maternal behavior such as tobacco use, alcohol use, cocaine use, marijuana use and abuse of diazepam while planning treatment for pregnant women. The presence of other medical

conditions was also considered by most of the respondents. This may be due to the fact that medical conditions such as hypertensive disorders of pregnancy and use of heparin during pregnancy has been associated with increased risk of bleeding during dental procedures⁽¹⁹⁾ and may present problems during dental management⁽¹⁾. It has been reported that many dentists are indeterminate about the safety of dental procedures and maybe overly cautious about treating pregnant women⁽²²⁾. This brings to the fore the importance of taking into consideration the scope of dental procedure while planning dental treatment. Over 60% of the respondents considered the scope of dental procedure while rendering dental treatment to pregnant women which is quite encouraging. However, there is still a need for pregnancy specific dental education for dentists, to enable them provide adequate care for pregnant women.

The position of a pregnant woman on the dental chair is vital while rendering dental treatment because of syncopal attacks. Majority (75.2%) of the respondents knew that a pregnant woman should be positioned in a special way on the dental chair while receiving dental treatment.

The respondents had varied responses with regards to the position of the pregnant patients' head in relation to their feet while performing dental procedures with less than half of the respondents knowing that her head should be higher than her feet. There was statistically significant association between position of the pregnant patient's head in relation to her feet and the status of the respondents with all the senior residents knowing the correct head position in relation to her feet. This corroborates the need for pregnancy-specific education for dentists⁽²³⁾ and a pointer to the fact that clinical exposure and educational experiences improve practice and knowledge. This result also suggests that this pregnancy-specific education for dentists should have some important aspects taught to undergraduate dental students to equip them with sound knowledge for clinical practice soon after graduation.

Lack of practice standards, inadequate information and training reported in a previous study⁽²⁴⁾ is upheld in this study confirming the need to do more with regards to pregnancy specific education for dentists by the way of continued dental education.

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