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Knowledge and attitudes of dentists regarding the oral health of pregnant women

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Abstract

Objective: to describe the knowledge and attitudes of dentists regarding the oral health care to pregnant women in prenatal dental care. **Material and Methods:** this was a cross-sectional, census, and descriptive research, which applied a form with objective questions to dentists working in the primary health care of the urban area of the city of Vitória da Conquista, Bahia, in 2015. **Results:** twenty-nine dentists were interviewed, and, by the results, it was possible to identify that 20.7% were not encouraged to pay attention to the oral health of pregnant women during their graduation. Regarding knowledge, 82.8% pointed the second trimester as the best time for care; 24.1% indicate that teeth become weaker during this period. In addition, most had knowledge on controversial issues, such as the possibility of using dental anesthesia (93.1%) and radiography (69%). Concerning attitudes and practices in primary health care, 31% of the dentists did not discuss the importance of prenatal dental care with the team. **Conclusion:** the knowledge of the dentists was inconsistent in some important aspects, which may hinder the dialogue with pregnant women and other members of the health team. Actions on oral health education and on awareness of the importance of prenatal dental care require trained dentists, who can contribute to improve the comprehensive care of pregnant women.

Keywords: Knowledge; Attitudes and practice in health; Pregnant women; Oral health.

Introduction

The gestational period involves physiological and emotional changes, with implications for mother and child.[1-3] During this period, the woman shows greater receptivity to information for her and her child's health, because of a greater contact with health professionals.[4] Therefore, these professionals must provide a comprehensive and interdisciplinary care[4], from the conventional medical and nursing follow-up to the care of a dentist.[5] Prenatal dental care must be introduced in the health-care network, to incorporate a logic of care that integrates promotion, prevention, and rehabilitation actions, always bearing in mind the mother and child health.[6]

In this sense, the prenatal dental care seeks to materialize a care line to pregnant women, assigning new tasks to dentistry in this life cycle. The actions aim to minimize the suffering caused by oral diseases, eliminate sources of infection, deal with the oral changes of the gestational period, and subsidize the care to child oral health.[7]

Hormonal changes, such as increased levels of estrogen and progesterone, combined with the accumulation of bacterial biofilm because of lack of oral hygiene, can have oral implications, most commonly tooth decay and periodontal disease. However, the pregnancy itself is not crucial to their emergence, but the oral processes already initiated tend to worsen during this period.[8] Such problems affect the mother and child health, by compromising the maternal nutrition or contributing to the spread of pathogens in the bloodstream or local infectious processes.[9]

Although dental interventions are safe in pregnancy, they must be preferably carried out in the second trimester. The comfort of the woman must be ensured, by adjusting the chair position, conducting short consultations, and avoiding the morning period, which is more prone to nausea and low blood sugar. Finally, dental emergencies must always be managed, to relieve pain and treat infections.[10-12]

In this context, the comprehensive oral health care during pregnancy still requires identifying the social representations of pregnant women regarding prenatal dental care, to recognize cultural issues that affect its effectiveness. Finally, health education contributes to raise awareness to typical oral problems, balanced diet, adequate oral hygiene habits for mother and child, breastfeeding promotion, and risks of artificial nipples and non-nourishing sucking habits.[5]

Given this, this study aimed to identify the knowledge and attitudes of dentists regarding the oral health care of mother and child in the prenatal dental care, in Basic Health Units (UBS – *Unidades Básicas de Saúde*) and Family Health Units (USF – *Unidades de Saúde da Família*) in the city of Vitória da Conquista (BA), in 2015.

Material and Methods

This is a cross-sectional and census research with quantitative and descriptive approach, which involved dentists inserted in the primary health care network of Vitória da Conquista. In the study period, the primary health care of Vitória da Conquista had 38 Family Health Teams (ESF – *Equipes de Saúde da Família*), among which 15 were located

in the urban area. Furthermore, the city had 30 Oral Health Teams (ESB – *Equipes de Saúde Bucal*), of which seven were inserted in the urban USF, mostly in the 1:2 ratio (one ESB for two of ESF); moreover, all seven UBS had dental care. From this context, 22 units located in the urban area of this city were investigated.

The reference population for this research consisted of dentists involved in prenatal care within the primary health care network of the urban area of Vitória da Conquista, in 2015.

The following inclusion criteria were adopted: working in the urban area of Vitória da Conquista; working at least six months in the UBS. On the other hand, professionals who were not found in their jobs during the research because of license or medical leave were excluded from the study.

The data collection instrument was a form with closed questions. It was divided into blocks of answers to identify socioeconomic and demographic aspects of the participants; satisfaction in performing mother and child care; knowledge of the professionals regarding the possible relations between pregnancy and oral health; and attitudes of the professionals concerning oral health during prenatal care. The instrument was applied in the form of interview by three properly trained interviewers.

The data obtained were arranged in banks and analyzed using the Statistical Package for the Social Sciences®, version 22.0. The analysis was descriptive; absolute and relative frequency measures were obtained for qualitative variables and central tendency and dispersion measures, for quantitative variables.

The research project was evaluated and approved by the Research Ethics Committee of Faculdade Independente do Nordeste, under CAAE 38810514.80000.5578.

Results

The research universe had a population of 35 dentists inserted in USF and UBS. Of these, one refused to participate in the study; two were on medical leave; one on vacation; and one was not found in any visit of the interviewers. Thus, 29 dentists were interviewed (82.8% of the universe of professionals), with 55.2% inserted in UBS and 44.8% in USF.

Table 1 shows the professional characteristics of respondents, who predominantly graduated on the public network (72.4%). The time of education of 48.3% was 13 years or more and there was a high frequency of graduate studies (69%), especially in Public Health (48.3%).

Table 1. Professional profile of dentists inserted in the primary health care of Vitória da Conquista, Bahia, Brazil. 2015

Variable	Category	N (29)	%
Time of education	Up to 3 years	7	24.10
	4-6 years	4	13.80
	7-9 years	0	0.00
	10-12 years	4	13.80
	13 or more	14	48.30
Type of university	Public	21	72.40
	Private	8	27.60
Graduate studies	Yes	20	69.00
	No	9	31.00
Main specialization	Radiology	2	6.90
	Public Health	14	48.30
	Has no graduate studies	9	31.00
	Others	4	13.80

*Surgery, Implant, Occupational Dentistry, and Prosthesis

Table 2 shows the participation in actions of continuing education and satisfaction with mother and child care. During the period of graduation, 79.3% were encouraged to pay attention to the oral health of pregnant women, although 69% did not attend an introductory course of primary health care, and those who did were not trained for the oral health of pregnant women (55.6%). Furthermore, although 82.9% self-evaluated their practices and child care as satisfactory, 55.2% did not take part in continuing or permanent training in this topic.

Table 2. Participation in actions of continuing education and satisfaction with mother and child care. Vitória da Conquista, Bahia, Brazil. 2015

Variable	Category	N (29)	%
Incentive in the graduation on the dental health of pregnant women	Yes	23	79.30
	No	6	20.70
Attended introductory course to work in health unit	Yes	9	31.00
	No	20	69.00
Introductory course drew attention to the oral health of pregnant women*	Yes	4	44.40
	No	5	55.60
Participated in mother and child care initiative	Yes	13	44.80
	No	16	55.20
Satisfaction with mother and child care	Satisfied	25	86.20
	Indifferent	2	6.90
	Dissatisfied	2	6.90
Self-assessment of performance in mother and child care	Very satisfactory	3	10.30
	Satisfactory	24	82.90
	Little satisfactory	1	3.40
	Unsatisfactory	1	3.40

*Only 9 respondents, because the answer was related to the previous question

All the professionals know the term "prenatal dental care." Table 3 shows the knowledge of the dentists on the oral health of mother/child. The dentists believe that pregnant women can receive any dental intervention (62.1%) and say it is safe to perform them (69%), preferably in the second trimester (82.8%). All acknowledged the influence of breastfeeding on the child's oral health, and 58.6% recommend it exclusively until 4-6 months. In addition, most (93.1%) recognize the risks associated with the use of artificial nipples and syrups (65.5%), and reported the need for oral hygiene since the birth (93.2%).

Table 3. Dentists' knowledge on the oral health of mother and child. Vitória da Conquista, Bahia, Brazil. 2015

Variable	Category	N (29)	%
What type of intervention can pregnant women receive?	Any type of intervention	18	62.10
	Any intervention that does not require surgery	11	37.90
	Only prevention and health education	0	0.00
	None	0	0.00
Regarding the safety to treat pregnant women	Very safe	7	24.10
	Safe	20	69.00
	Little safe	2	6.90
	Unsafe	0	0.00
Stage of pregnancy in which dental procedures should preferably be performed	Any time	2	6.90
	First trimester	2	6.90
	Second trimester	24	82.80
	Third trimester	1	3.40
	They should not be performed	0	0.00
Pacifiers can affect the child's oral health	Yes, positively	2	6.90
	Yes, negatively	27	93.10
	I don't know	0	0.00
When one should start to perform the baby's oral hygiene?	Shortly after birth	27	93.20
	When all the deciduous teeth erupt	1	3.40
	When starting complementary feeding	1	3.40

Controversial issues in prenatal dental care were accepted by most, such as the use of anesthesia (93.1%) and radiography (69%). In the same direction, 89.7% recognized the increased susceptibility of pregnant women to periodontal disease, although only 58.6% report the same for tooth decay. On the other hand, 24.1% mistakenly believe that their teeth become more fragile, and indicate tooth decay as a risk factor for miscarriage (37.9%), low birth weight (62.1%), and premature births (55.2%, Table 4).

Table 4. Dentists' practical knowledge on the oral health of mother and child. Vitória da Conquista, Bahia, Brazil. 2015

	Agrees		Disagrees		Does not know	
	N	%	N	%	N	%
Pregnant women can receive dental anesthesia	27	93.10	2	6.90	0	0.00
Pregnant women can perform dental radiography	20	69.00	4	13.80	5	17.20
Pregnancy can affect the oral health of pregnant women	28	96.6	1	3.40	0	0.00
Pregnancy increases susceptibility to dental caries	17	58.60	9	31.10	3	10.30
Pregnancy increases susceptibility to periodontal disease	26	89.70	3	10.30	0	0.00
Pregnancy increases susceptibility to lesions on the oral mucosa	21	72.40	8	27.60	0	0.00
Teeth become weaker during pregnancy	7	24.10	22	75.90	0	0.00
The oral health condition of pregnant women can affect their pregnancy	26	89.70	3	10.30	0	0.00
Decayed teeth increase the risk of premature birth	16	55.20	10	34.50	3	10.30
Decayed teeth increase the susceptibility to miscarriage	11	37.90	10	34.50	8	27.60
Decayed teeth increase the risk of low birth weight	18	62.10	7	24.10	4	13.80
Periodontal disease increases the risk of premature birth	24	82.80	3	10.30	2	6.90
Periodontal disease increases susceptibility to miscarriage	19	65.50	4	13.80	6	20.70
Periodontal disease increases the risk of low birth weight	23	79.40	3	10.30	3	10.30
Use of antibiotics increases the risk of tooth decay	7	24.10	20	69.00	2	6.90
Use of syrups affects the oral health of children	19	65.50	8	27.60	2	6.90

Regarding practices related to the oral health of pregnant women, 31% never discussed the importance of prenatal dental care with the health team. Table 5 shows that the professional practices in the oral health of pregnant women presented weaknesses, such as: little contact with SISPRENATAL (72.5%), little use of the shared schedule (51.7%), not carrying out active search of pregnant women (55.2%), lack of home visit (72.5%), and not carrying out waiting room activities (75.9%). On the other hand, the following guidelines are positively highlighted: oral hygiene after using sugary syrups (75.9%), benefits of breastfeeding (89.7%), risk of artificial nipples (82.8%).

Discussion

The role of the dentists in the prenatal care developed in the primary health was strongly affected by the biomedical practice, a fact that is translated by the low frequency of disease prevention and health promotion actions for pregnant women. Important features such as shared schedule, groups of pregnant women, and waiting room activities do not rely on the constant presence of the dentists, compromising the reach of oral health.

Besides, the dentists almost did not discuss relevant aspects about oral health/pregnancy with the health team, failing to share required information so that other profes-

Table 5. Dentists' attitudes and practices on the oral health of mother and child. Vitória da Conquista, Bahia, Brazil. 2015

Practice (N=29)	Always		Often		Rarely		Never	
	n	%	n	%	n	%	n	%
Access to the list of pregnant women registered in SISPRENATAL	3	10.30	5	17.20	0	0.00	21	72.50
Notes the information contained in the medical record during the consultation	12	41.40	13	44.90	1	3.40	3	10.30
Can identify the attributed gestational risk for accompanied pregnant women	9	31.00	14	48.30	4	13.80	2	6.90
Uses shared schedule	8	27.60	6	20.70	6	20.70	9	31.00
Performs active search of pregnant women to prenatal dental care	4	13.80	9	31.00	6	20.70	10	34.50
Performs home visits during pregnancy and puerperium	1	3.40	1	3.40	6	20.70	21	72.50
Performs urgency/emergency dental care in pregnant women	22	75.90	3	10.30	4	13.80	0	0.00
Performs the referral of pregnant women to other levels of care	19	65.60	1	3.40	6	20.70	3	10.30
Formation of groups of pregnant women in the unit	14	48.30	6	20.70	3	10.30	6	20.70
Participation in the activities carried out with the groups of pregnant women	7	24.10	8	27.60	4	13.80	10	34.50
Develops waiting room activity focused on the oral health of the pregnant women	2	6.90	5	17.20	9	31.00	13	44.90
Planning of educational actions in oral health for pregnant women	5	17.20	13	44.90	2	6.90	9	31.00
Seeks to identify pregnant women who do not seek dental care because of myths	6	20.70	4	13.80	8	27.60	11	37.90
Encourages pregnant women to keep breastfeeding after the introduction of food	13	44.80	5	17.20	5	17.20	6	20.70
Guides pregnant women about the risks of using artificial nipples (pacifier and baby bottle)	24	82.80	3	10.30	0	0.00	2	6.90
Guides pregnant women to avoid the use of sugar in the child's diet	26	89.70	2	6.90	0	0.00	1	3.40

sionals can be inserted on the principles of prenatal dental care. These barriers may be influenced by the poor knowledge shown by respondents, who report having received little incentive on dental care to pregnant women during graduation; not attending an introductory training to work in the primary health care; and still maintaining and sharing myths about the dental treatment of pregnant women.

Higher education institutions, responsible for the training of students of dentistry, are responsible for disseminating the importance of dental care to pregnant women, which are perceived as essential, priority, and necessary. However, a relevant portion of the dentists was not encouraged to pay attention to the oral health of pregnant women during graduation.

The basis of the teaching-learning process must be established from its social utility, intention, and priorities. There are flaws in the education and training of many professionals by the lack of multidisciplinary and transdisciplinary approach of the contents, which can result in fear of many dentists in treating pregnant women, reinforcing myths about this care.[13] Thus, the challenge posed to higher education institutions is in breaking with an education focused on the hegemonic medical model, giving priority to a training based on the principles of public health.[14]

In addition, the non-participation of dentists in introductory courses to work in the primary health care may harm their work. The introductory course is an important tool to guide a professional practice aligned with the guidelines and objectives of the ESF, bringing the principles of SUS to the regional reality of each unit and encouraging professionals to abandon assistentialist model-based training.[15] The prior participation of dentists in such courses can result in theoretical appropriation and adoption of desired practices in the primary health care, with more comprehensive actions, which should always be determined by the needs of the user, requiring inter and transdisciplinary work.[15-17]

Although most dentists reported being confident in their care to pregnant women, we observed a deficiency regarding the knowledge presented. Myths, such as the contraindication of surgical procedures; the relation between tooth decay and gestational complications; weakening of teeth and increased risk of caries during pregnancy, are still supported by many professionals, being shared with patients and other members of the health team.

It is known that the maternal donation of calcium to the fetus does not lead to dental demineralization[18], and that the increased prevalence of caries does not occur by systemic changes related to pregnancy, but because of habits acquired by pregnant women, such as poor oral hygiene and higher consumption of sucrose, which are also associated with nausea and vomiting.[19] Thus, tooth demineralization is favored by a decreased oral pH[20] and by the presence and permanence of bacterial plate[21,22], showing no direct link with pregnancy.[8]

Many professionals still seem to be unsure or wrong about the use of x-rays and surgical procedures during pregnancy. Provided that the risk-benefit is assessed and precautions related to the patient's conditions are taken, no dental procedure is formally contraindicated during pregnancy.[23] Elective surgeries and research radiographs must be avoided or postponed to the postpartum, thus avoiding the exposure of pregnant women to the risks inherent in the procedures without due justification.[24] The dentists must evaluate and decide if it is appropriate or not to perform procedures that can determine the reduction of inflammatory and infectious conditions, with consequent well-being of pregnant women.

Although there are scientific evidence assuring the safety of dental treatments in pregnant women,[13,25,26] dentists still fear performing them, mainly because of myths and popular beliefs, which advise against the care during this period, under the allegations of potential interference in the course of pregnancy and child health,[27] as well as by the lack of knowledge and experience of the dentists, who restrict the follow-up to this group for fear of complications during dental interventions.[28] In agreement, Capucho *et al.*[29] identified several doubts in the dental conduct during pregnancy, with uncertainty about the type of anesthetic that could be used (42.8%), which procedures could be performed (64.2%), and what is the best period for treatment (71.4%). The insecurity and lack of knowledge of dentists are a reality in prenatal dental care, confirming the fragility of the care provided to pregnant women and reaffirming the need for continuing and permanent education.

The deficiencies observed regarding the knowledge of the oral health of pregnant women can be directly related with the actions developed by the dentists in the primary health care. Although relevant attitudes are developed by these professionals, there are still obstacles in the inclusion of dentists in multidisciplinary team activities, such as the low participation in groups of pregnant women and in shared schedule and the non-planning of educational activities in oral health aimed at pregnant women.

The shared schedule is an important tool for exchanges between health professionals, taking advantage of the period of permanence of pregnant women in the unit and optimizing the comprehensive care.[30] In addition, confirming the findings of Bastiane *et al.*,[31] prenatal programs have low participation of dentists, who are also not included in the planning of educational actions, converted into the formation of groups of pregnant women and waiting room activities.

Dentists must see themselves broadly as health professionals, not only focusing on the technical-curative work, but expanding their knowledge beyond the limit of the oral

cavity, with interaction and exchange of knowledge between professionals of the team, and between the team and users, to contribute to the comprehensive care of the individual.[32] In this sense, resources such as shared schedule, groups of pregnant women, and waiting room activities can promote the interaction between the reality of the service to be provided and the real needs of pregnant women.

The reality of the interdisciplinary team also faces difficulties and resistance to be put into practice. A significant portion of the dentists interviewed does not promote discussions with the team on the importance of prenatal dental care or on relevant aspects of oral health to be valued during the consultations of the other professionals. The interaction between professionals is important to the extent that nurses and doctors, being the first, and often the only ones, to have contact with this target audience, must be aware of their roles and have the responsibility to inform about the systemic condition, concentrating on the need for monitoring oral health and acting along with the dentists to promote health.[25]

Prenatal care is a strategy to promote health and prevent diseases, and the insertion of dentists in the multidisciplinary team is essential so that they become accessible and dentistry is democratized. This favors the prevention of oral complications of pregnancy, as well as their consequences, and the debunking of the dental treatment to pregnant women, explaining to the population the importance and need of oral care, even during pregnancy.[5,25]

Although other studies have been carried out with the same topic and similar methodology,[33] the data obtained in this study was self-reported by professionals by direct interviews, and thus one must be careful to interpret them. In addition, since the research is directed to the public health system of the urban area of the city, it is not possible to examine the whole picture, as prenatal dental care is also offered in rural areas and in the private network.

Conclusion

Based on the results presented, it is plausible to infer that the knowledge presented by dentists, in many cases, do not match their attitudes, being inconsistent in some important aspects of prenatal dental care, which can hinder the dialogue, relationship, and bonding with pregnant women and other members of the health team.

The interaction between the health care team should always be encouraged, as well as the process of permanent and continuing education of all professionals, so that their insecurity in treating pregnant women can be minimized, thus improving their comprehensive care.

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Mini Curriculum and Author's Contribution

1. Jinária Fernandes da Silva – DDS. Contribution: effective scientific and intellectual contribution in the study; data collection; data interpretation; preparation of the manuscript; writing of the manuscript.
2. Suélem Maria Santana Pinheiro-Ferreira – DDS and MSc. Contribution: effective scientific and intellectual contribution in the study; conception and design of the study; data analysis; data interpretation; preparation of the manuscript; writing of the manuscript; critical review and approval of the final text of the article.
3. Rogério Vieira Silva – DDS and MSc. Contribution: effective scientific and intellectual contribution in the study; data interpretation; preparation of the manuscript; writing of the manuscript; critical review and approval of the final text of the article.
4. Rejane Marques Pereira – DDS. Contribution: effective scientific and intellectual contribution in the study; data collection; data interpretation; writing of the manuscript.
5. Isis Cardoso Benício dos Santos – DDS. Contribution: effective scientific and intellectual contribution in the study; data collection; data interpretation; writing of the manuscript.

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