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Dental care: the perception of pregnant women in Primary Health Care

Cuidado odontológico: percepção das gestantes na Atenção Primária à Saúde

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ABSTRACT
The present study aimed to analyze the perspective of pregnant women on how dental care occurs in the context of Primary Health Care. This is a qualitative study through 16 semi-structured interviews with pregnant women in the second or third trimester of pregnancy, in a city in the countryside of São Paulo. The data was subjected to content analysis, thematic modality. It was observed that dental care in the Family Health Teams and Basic Health Units focuses on the general health of the pregnant woman and the fetus but has a weak focus on oral health. Pregnant women presented limitations related to oral self-care, as well as barriers that interfered with dental care during the gestational period. Despite identifying the importance of dental care during pregnancy, pregnant women face fears, fears, negative influences from relatives, lack of professional and care preparation, which limit the provision of prenatal dental care.

Keywords: Primary Health Care. Prenatal care. Patient Care Team. Pregnant women. Oral health.

RESUMO
O presente estudo objetivou analisar a perspectiva das gestantes sobre como ocorre o cuidado odontológico no contexto da Atenção Primária à Saúde. Trata-se de uma pesquisa de caráter qualitativo por meio de 16 entrevistas semiestruturadas com gestantes no segundo ou terceiro trimestre de gestação, em um município do interior paulista. Os dados foram submetidos à análise de conteúdo, modalidade temática. Observou-se que o acompanhamento odontológico nas Equipes de Saúde da Família e Unidades Básicas de Saúde têm foco na saúde geral da gestante e do feto, mas um olhar fragilizado para a saúde bucal. As gestantes apresentaram limitações relacionadas ao autocuidado bucal, bem como barreiras que interferiram no atendimento odontológico durante o período gestacional. Apesar da identificação da importância do atendimento odontológico no período gestacional, as gestantes enfrentam medos, receios, influências negativas de parentes, despreparo profissional e assistencial, que limitam a realização do pré-natal odontológico.

Palavras-chave: Atenção Primária à Saúde. Cuidado pré-natal. Equipe de Assistência ao Paciente. Gestantes. Saúde bucal.

INTRODUCTION

During pregnancy, women experience several changes in their bodies, with significant consequences for both them and the fetus. These changes encompass physical, physiological and psychological changes.[1,2]

Among these changes, which occur for the accommodation and healthy development of the fetus, are metabolic ones, such as endocrine and cardiovascular ones, which imply: increased cardiac work, which can be up to 40%; development of the uterine vascular network; production of the hormone chorionic gonadotropin; and hypervolemia. This aims to maintain blood supply, oxygen levels and nutrients for the pregnant woman and fetus. Psychological changes also occur, involving stress, anxiety, or sadness, modifying the pregnant woman's emotional state. In more specific cases, women may be affected by mental disorders, such as non-psychotic depressive symptoms. Furthermore, physically, weight gain, fatigue and, in some cases, limitation of daily activities are noticeable.[3]

Specifically in the oral environment, hormonal changes inherent to the gestational period induce an exacerbated inflammatory response to aggressive agents, causing bleeding and destruction of periodontal tissues. It is worth mentioning that, by definition, gingivitis and periodontitis are inflammatory pathologies that affect the supporting and protective tissues of the teeth due to the accumulation of biofilm and the lack of mechanical removal using a brush and dental floss. Considering this context, periodontal disease has been blamed as a risk factor for some gestational complications, such as premature birth, low birth weight, intrauterine growth restriction, pre-eclampsia, and spontaneous abortion.[3]

From a broader perspective, prenatal consultations during the gestational period are extremely important for disease prevention, risk reduction and health promotion for women and children. However, despite being a constitutional right, access to health services is directly harmed by the social inequality that exists in Brazil.[3] For example, women's access to dental care in the prenatal period is related to the opportunity they find in ABS.[4]

That said, as soon as he has the opportunity, the dentist must establish a bond and relationship of trust with pregnant women. Prenatal care must be comprehensive and restore oral health interrupted by pathological conditions. This bond should not be restricted to the gestational period, but rather be permanent, with the baby's health also monitored during the postpartum period.[3]

Prenatal dental care is surrounded by myths, beliefs, and negative ideas, which leads to low demand for treatment and low adherence. The main reasons found by patients are: misinformation about the possibility of treatment during pregnancy; fear about the risks of interfering with fetal formation; low perception of the need for treatment; fear involving dental treatment; possibility of feeling pain and discomfort; high-speed pen noise; and belief that, because they are pregnant, they will feel more pain.[1,2,5] In addition to these, socioeconomic level, lack of interest, lack of time and the need to rest due to systemic arterial hypertension are also related to the low rate of dental treatment during pregnancy.[3]

The gestational period generates many doubts, which can lead pregnant women to seek new information and follow better health practices. It is a period in which they are willing to receive guidance regarding the benefits of adopting new and correct habits regarding health care, extending to the future child.[4,5]

Therefore, health professionals, including dental surgeons, need to seek knowledge related to the gestational period to provide humanized and comprehensive care.[4] As an example of the promotion of knowledge, an intervention through meetings of continuing education in Family Health Team meetings. By sharing information about the importance of oral care during pregnancy among professionals involved in prenatal care, it is expected that there will be a positive impact on comprehensive care for pregnant women, as well as on the indicator of the proportion of pregnant women cared for during the gestational period.[6]

It is important that undergraduate and postgraduate training processes — such as multi-professional residencies, specializations, and improvement courses — address this topic from the perspective of health promotion, education, and disease prevention. Health education is fundamental to guide or promote the redefinition of know-how. A certain health issue is only important when you know about it. Thus, only with information about oral diseases and their etiologies is it possible to generate good oral health habits; otherwise, prenatal dental care is limited.[4]

Promoting health and well-being for pregnant women involves not only consultations and clinical procedures, but also carrying out educational activities that clarify the possibility of treatment and the meaning of pathologies as factors that cause health problems during pregnancy.[7]

In view of this, this work raises the following questions: Does dental prenatal care occur in SUS care units? Are professionals trained to carry out prenatal dental care? Are

pregnant women being covered? What are the main barriers to dental prenatal care in the perception of pregnant women in Primary Health Care?

Thus, this study aimed to analyze, from the perspective of pregnant women, how dental care occurs in the context of Primary Health Care (PHC), in a city in the interior of São Paulo.

METHODOLOGY

This is a cross-sectional and qualitative study, developed in a municipality in the interior of São Paulo with an estimated population of 242,249 people in 2021.9 The process of choosing the units to carry out the research took place through a request, via telephone and e-mail to the Municipal Health Department (MHD - *Secretaria Municipal de Saúde* -SMS), of the number of pregnant women treated in each Basic Health Unit (BHU) and Family Health Units (FHU) in the city, during the year 2021.

According to the information received from the MHD on the number of pregnant women and their respective care units, a single care unit was selected for each geographic region, this unit being the one with the largest number of pregnant women covered, totaling two BHU and two FHUs.

16 pregnant women who were in the second or third trimester of pregnancy and who were undergoing prenatal care at the selected BHU and FHUs participated in the research. Pregnant women who were in the first trimester of pregnancy were not included in the research because they had not received prenatal care and, consequently, did not have the opportunity for dental care. The sample was defined by the progressive inclusion of interviewees until saturation was reached.[7] It is noteworthy that, in one FHU, there were two refusals to participate in the research; and, in a BHU, a refusal. The researcher had no personal or professional relationship with the participants.

During the research period, the world was facing the Covid-19 pandemic, a disease caused by the SARS-CoV-2 virus. Due to this situation, the municipality's Primary Care was reorganized to combat the pandemic. Many dental surgeons were relocated to other care units to carry out Covid-19 tests on patients with symptoms of the disease. This directly interfered with dental care for the city's population, so that many pregnant women had their prenatal care directed to other health units, making care for them and, especially, in this context, the development of research a challenge.

Based on the evidence that liquid particles infected with the SARS-CoV-2 virus spread between people when they speak, sneeze, cough or breathe, the interviews, although they were carried out in person, followed the safety measures necessary to prevent transmission of the virus. SARS-CoV2, for example, care was taken with social distancing, wearing a mask, and washing hands with alcohol gel.

In data collection, semi-structured interviews were carried out with pregnant women, with a socioeconomic survey and open questions, in which the interviewee can discuss the topic questioned without being tied to the question asked.[8]

For the interviews, prior contact was made with the nurse responsible for each unit to define a date and time. They occurred while the pregnant women were waiting for the prenatal consultation or after it, in a private environment, in order to preserve the information collected.

There was just a single interviewer, who used a voice recorder for recording, from November 2021 to March 2022. There were several visits to the units to collect data, as some complications arose, such as frequent absence of pregnant women to prenatal consultations and incorrect information about the date of appointments. In a FHU, to carry out the interviews, it was necessary for the interviewer to go to the pregnant women's homes, accompanied by the community health agent.

The interviews were transcribed in full for subsequent analysis of their content. Coding was carried out so that the interviewees had their identities preserved when presenting the results, with the letter “G” being defined for pregnant women, with numbers to identify the order of occurrence; “B” for BHU and “F” for FHU followed by numbers to identify the unit where the interview took place.

Content analysis was carried out using the thematic modality: after exhaustive readings of the interviews, the core meanings were delimited by grouping statements with the same meaning of information. It was then followed by the analysis of these meaning cores to define the themes.

This research was approved by the Research Ethics Committee (REC) of the Faculty of Medicine of Marília in partnership with the Municipal Research Assessment Committee (Comitê Municipal de Avaliação de Pesquisa - COMAP) of the Health Department of Marília, according to Resolution 466/2012, through the substantiated opinion of CEP no. 4,537,990, under protocol No. CAAE: 40684620.2.0000.5413.

All participants were guaranteed the confidentiality of their answers to both the socioeconomic questionnaire and the guiding questions. Information and clarifications were provided about the objective of the research. When agreeing to participate, they signed the Free and Informed Consent Form (FICF).

RESULTS AND DISCUSSION

SOCIOECONOMIC CHARACTERIZATION OF PREGNANT WOMEN

Of the 16 pregnant women who participated in the research, 43.75% were between 20 and 29 years old, the same percentage as those between 30 and 39 years old; and 2% were between 10 and 19 years old. According to the gestational period, 43.75% were in the second trimester of pregnancy; and 56.25%, in the third trimester of pregnancy.

Regarding education, 18.75% had completed primary education, 6.25% had not completed primary education, 18.75% had not completed secondary education, and 56.25% reported having completed secondary education. Regarding marital status, 31.5% were married; and 68.75%, single. Regarding employment status, 68.75% reported being unemployed; and 31.5%, employed.

When verifying the perception of pregnant women attended to by the SUS regarding dental prenatal care, a study demonstrated that, at the time of the research, 42% of pregnant women were not employed and that 58% had an employment contract[10], differing from what was found in this study, in which the majority of them reported being unemployed.

Another important factor in characterizing the pregnant women interviewed was their level of education. A study observed that 75% of pregnant women studied until high school, 8.4% until incomplete primary education, 8.4% until complete primary education, and 8.4% were attending higher education.[11] This data was similar- to findings in present work.

As for marital status, this study was in line with another study, in which it was observed that 60.7% of pregnant women interviewed were single; 32.8%, married; and 1.6% of them were separated from their husbands.[12] However, in the researched population, a direct relationship was observed between socioeconomic conditions and access to prenatal dental treatment.[10,11]

Four themes emerged from the research content, which will be addressed in this article: prenatal care; oral self-care and professional dental care; barriers to dental care; and physiological changes and their interference in oral care.

PRE-NATAL FOLLOW-UP

When questioning pregnant women about those responsible for prenatal care, they said that, in the BHU, in addition to doctors, there was a first consultation with student interns in the service at that time.:

> "[...] There are students and then they pass it on to her. At the end, now, that I spent first with the students." G3B1)

> "First was the assistance with the students: they wrote everything down, passed it on to the doctor [...]" (G4B1)

In the FHUs, those responsible for caring for pregnant women in their prenatal consultations were the doctors and also the nurses at the units.:

> "I see the doctor and the nurse too." (G3F4)

The gestational period is full of physiological, hormonal and psychological changes with the aim of allowing the development of the fetus and preparing the pregnant woman for childbirth and breastfeeding. In order to help pregnant women by contributing to a peaceful and healthy pregnancy, health professionals must provide comprehensive care to the pregnant woman's health.[13] In prenatal consultations, the topics discussed were mainly related to the patient's clinical issues and the baby's health:

> "[...] She asked what I was feeling, symptoms, if I was ok, gave me medicine, vitamins [...] they were suspecting gestational diabetes [...]" (G2B1)

> "Most of the guidelines were based on the baby's weight, which was a little underweight. [...]" (G4B1)

It was observed that, both at the BHU, where there are specialist doctors, and at the FHU, where the doctor responsible for prenatal care is the family doctor, prenatal care takes

place at equal intervals; and even where students are present, there is always a trained health professional responsible for providing care.

When pregnant women were questioned about whether they had received oral care guidance from the professionals responsible for care, several situations were reported. The lack of guidance on the importance of dental prenatal care from professionals can be observed in these statements:

> "Brush your teeth, no, they never said anything." (G1F4)
>
> "It's difficult for them to say anything [...] they never talked about teeth." (G2F4)

Pregnant women should receive guidance from professionals responsible for prenatal care regarding the need and importance of dental prenatal care for the good development of the pregnancy. Sometimes, referral to a dental surgeon is given, but without discussion regarding oral diseases such as gingivitis and periodontitis, nor their implications for premature birth and low birth weight of the newborn.

In a study, it is shown that medical professionals, especially doctors, are fundamental in the process of providing guidance on dental prenatal care.[14] In agreement with this, such guidance was reported:

> "[...] There was a guy who was a student and he gave me a piece of paper, but I don't remember it very well, because it was at the very beginning. [...] it was during the consultation, before the consultation, they called me into a room and, like, a little lesson. Then I asked the nurse, and she said it was normal, that it was because of the pregnancy." (G4F4)

Some obstetricians, despite having knowledge about the relationship between poor oral health and undesirable pregnancy outcomes such as increased risk of premature birth, low birth weight and changes in the babies' dental development, would have difficulty answering questions relating to oral health. This fact would be mainly related to their limited knowledge on the subject. However, pregnant women who participated in the study reported surprise when receiving information about the relationship between maternal oral health and undesirable situations during childbirth; and said they would be receptive to new knowledge.[15]

It was also possible to observe that, although the patient was undergoing dental care, there was no professional concern in knowing how this monitoring was carried out and

whether specific guidance was given related to the interference of oral health during pregnancy. This situation is portrayed in the report of the following pregnant woman:

> "No, not that I remember. No, as I said I was seeing the dentist, no one said anything." (G1F3)

These reports demonstrate weaknesses in dental care, corroborating other studies, which show that, although there is dental care for pregnant women in both BHU and FHUs, the service presents flaws in the implementation of public health policies.[16] According to SUS guidelines, the Pregnant women are a priority in health services and oral health education programs.[14]

However, obstetricians report that they prioritize information related to birth and breastfeeding to the detriment of guidance on dental care, due to the time they have for discussions and the lack of confidence in the subject. By prioritizing the discussion regarding maternal oral health, space is opened for guidance regarding the availability of a service focused on this subject. In this context, pregnant women report that they seek dental care during the gestational period due to the information provided by obstetricians.[15]

A study of 298 low-income women belonging to an ethnic minority group, attended at two prenatal clinics in suburban New York, revealed: women who received guidance on dental prenatal care had a rate 4.6 times higher of visits to the dentist during pregnancy than those who did not receive guidance. This study concludes: women who receive guidance from professionals responsible for prenatal care will seek and use dental services more frequently.[18] In another survey, 67% of gynecologists reported advising their patients to seek dental care during the gestational period.[19]

Furthermore, a study in Australia demonstrated that the work of obstetricians had a low cost-benefit ratio, as, despite promoting oral health education, assessment and referral to a dental service, the action was not able to improve the oral health of pregnant women. On the other hand, the inclusion of a dental professional in the team resulted in better cost-benefit in the long term.[20]

ORAL SELF-CARE AND PROFESSIONAL DENTAL ATTENTION

Oral hygiene by pregnant women, identified in this research, is based on tooth brushing using a toothbrush and toothpaste, but with low adherence to the use of dental floss.

It is performed after the main meals, but not routinely, with flaws in terms of frequency. Oral care is performed according to habits acquired prior to pregnancy, without additional guidance from dental surgeons. The following excerpt from the interviews illustrates the difficulties with oral hygiene:

> "I can't use dental floss, [...] I don't really like dental floss, but I try to use dental floss, but it's difficult. Brushing... I brush every day [...] I brush in the morning, in the afternoon, at night, when I get up, then, when I have lunch, I brush again." (G3B1)

This fragility in oral care may be related to the lack of professional support; Furthermore, in cases of professional monitoring, even if private, there are no specific guidelines for the condition of pregnant women.

Poor oral hygiene results in the accumulation of large quantities of pathogenic microorganisms and the development of oral diseases with the highest incidence during the gestational period. Caries, a multifactorial disease associated with Streptococcus mutans, can be present in the mother with a high rate of transmission to the child after birth. This happens through the transmission of the microorganism when using the same cutlery or when contact with maternal saliva occurs.[21]

Opposing the idea that an individual's socioeconomic condition is directly proportional to their general and oral health, a study related the "DMFT index and the microbiological assessment of the risk factor for dental caries" with the "salivary colony-forming units of Streptococcus mutans" from 50 primal pregnant women, divided into different socioeconomic categories. The results were compared with those of a group of 50 non-pregnant women of the same age group. It was demonstrated that pregnant women had a higher risk of developing dental caries when compared to non-pregnant women. However, there was no difference regarding the socioeconomic status of the participants in relation to oral hygiene practices, as the risk of increased cavities was noted in all socioeconomic classes studied. It was concluded that there is an increase in oral hygiene care among pregnant women of all socioeconomic classes.[22]

Even undergoing dental treatment, pregnant women sometimes end up not receiving adequate care, having their treatment interrupted.:

> "He said it was okay, because I didn't want to, because it was giving me a lot of anxiety when I moved the tooth." (G3B1)

> "[...] I asked the dentist if there was a problem, and she said there wasn't, that it was my choice: if I wanted to do it while I was pregnant, I could do it. But then I told her that I would wait for the baby to be born and then I would do it. Then she agreed." (G1F3)

Pregnancy is not a condition for not undergoing dental treatment. Oral health is an essential issue for an individual's general health. It is important that health professionals carry out necessary assessments and treatments with the aim of promoting the well-being of the mother and baby. Recognizing oral health problems can be more dangerous than the possible risks associated with dental treatment during pregnancy. It is noteworthy that pregnant women are open to new knowledge, making it an opportune moment to practice health education. Correcting habits, introducing new oral hygiene techniques and making pregnant women aware of the importance of oral health should be a routine for dental surgeons in the practice of prenatal dentistry.[21]

Dental follow-up during the gestational period is hampered by fear and fears of pregnant women regarding care, as well as by the insecurity of dental surgeons in carrying out procedures during this period, postponing them until after birth. In this sense, the participants demonstrate the non-prioritization of oral health, as evidenced in the following reports.

> "[...] I imagined that, as it would take a while, it would be at the very end, so I won't even move, I'll wait for the baby to be born, and when he's about three or four months old, I'll look for." (G1B1)

> "[...] I didn't even get to talk to the dentist here about whether it's possible or not." (G4F3)

Prenatal care is one of the priority programs offered in PHC and is based on the SUS principles of universality, equity and comprehensiveness, which guarantee the right to universal and equal access to health. There are two programs with this objective: *Rede Cegonha*; and the Prenatal and Birth Humanization Program (*Programa de Humanização do Pré-natal e Nascimento* - PHPN).[23, 24]

BARRIERS TO DENTAL CARE

There are several barriers that interfere with the implementation of dental prenatal programs, such as: misunderstanding of the importance of dental prenatal care; low importance given to oral health; fear of procedures; situations involving psychological

conditions such as anxiety; difficulty accessing treatment; socioeconomic condition; situations related to service hours; previous dissatisfaction with the quality of the service provided; and beliefs that dental treatment is contraindicated during pregnancy.[16, 25]

Contributing to these barriers is the fact that, even though there is a section in the pregnant woman's booklet dedicated to dental care, the professionals responsible for prenatal care, be they doctors or nurses, end up not paying attention to the subject, which is also a common attitude among pregnant women. This makes it difficult to receive dental prenatal care:

> "I see it there, but as I didn't need to go to the dentist, I didn't need any emergency like that, so that part was never filled in. Nobody ever said anything." (G2F4)

In a recent study, it was identified that SUS users considered consultation with the dentist dangerous, even when they thought this assistance was important, without being able to explain the reasons clearly.[26]

Some concerns and fears of pregnant women regarding dental treatment are related to the procedures carried out in the dental office. There is a direct relationship between pregnant women's beliefs about the treatment and the use of the service. The main concern is the fact that they believe that dental procedures can cause complications for the fetus or miscarriage.[16]

A focus group study aimed to understand barriers, facilitators, and patient-centered prevention strategies related to prenatal dental service use among underserved women. Pregnant women reported that they did not know the importance of monitoring and the benefits of care. The socioeconomic condition was a barrier due to some factors such as the possibility of having a nanny to take care of a child, transport failures to reach the appointment location and, in some cases, the existence of other priorities. Lack of knowledge about free treatment, interprofessional communication in promoting care and insufficient technical knowledge on the part of dental surgeons were also reported as barriers to prenatal dental care. As facilitators, it was mentioned that mass communication, interprofessional collaboration, traditional consultations, community groups with family and friends, social services, social media and even applications for disseminating information are potential forms of information and stimulation to carry out dental prenatal care.[27]

The idea that dental care during prenatal care is unsafe is due to the fact that pregnant women suffer from previous traumatic experiences and reports from family and friends,

which become some of the main factors for the lack of seeking care.[26] In agreement with the literature, the following statement from a pregnant woman interviewed exemplifies the situation:

> "[...] because my mother said she couldn't, because they were going to move it and I couldn't move it to give anesthesia." (G1F4)

Still according to the literature, pregnant women revealed concerns about the need to use medications and their adverse effects:

> "They talked about anesthesia that could cause some harm, antibiotics, you'll need to take something, and because of the pregnancy it could cause some problems." (G1B1)

New medicines are introduced onto the market every year, but little information in their leaflets refers to the safety of their use in pregnant and breastfeeding women. Serious adverse effects of some medications, such as thalidomide (with teratogenic effects), increased the perception of the possible risks of medications during the gestational period. In 2015, the Food and Drug Administration (FDA) reformulated the content and format of the leaflets, removing references to the old classification dated 1979 with the division of medicines into categories A, B, C, D and X. This classification was replaced by a summary of the possible risks of medications if used during pregnancy, with important information for your prescriptions. The aim is, therefore, to increase safety in prescribing medications through consistent and well-structured information on their possible harm when used by pregnant and breastfeeding women.[28]

Health professionals also present fears and concerns regarding dental treatment during the gestational period. There are cases in which the dentist advises the pregnant woman to seek treatment after the birth of the child.[16] In some situations, this occurs in a direct and explicit dialogue, but in others, this guidance is carried out subjectively through the permissiveness, according to the report:

> "[...] I asked if I had to have anesthesia, she said there was anesthesia, but without harming the pregnancy. I told her that it would be better for when the baby was born, then I would do it, and she consented." (G1F3)

A complicating factor regarding health professionals involved in prenatal care is the report of dental surgeons who declare insufficient knowledge on the subject and who did not receive specific training during their undergraduate studies. They present doubts and fears

regarding dental care during pregnancy and uncertainties related to the safety of the procedures.[25]

The gynecologist is one of the first professionals in contact with pregnant women in the line of care, being responsible for evaluation and treatment. A study evaluated gynecologists' knowledge and care regarding oral health during pregnancy, associating periodontal diseases with undesirable consequences during pregnancy. 200 gynecologists were questioned using a questionnaire containing 22 questions. More than 64% of participants agreed that pregnancy increases the likelihood of gum inflammation, and 87% of gynecologists recognized an association between oral health and pregnancy. Of the total, 67% believed that gum inflammation can affect pregnancy, and 63% agreed that periodontal diseases can contribute to premature birth and low birth weight. Furthermore, 74% of gynecologists considered the second trimester to be the safest for dental procedures, 21% stated that x-rays are safe, and 74% said that administering local anesthesia with vasoconstrictors is not safe during the gestational period.[19]

Regarding distrust regarding the use of local anesthesia during pregnancy, the North American Board of Dental Therapeutics recommends that local anesthetics should be used in dental procedures together with vasoconstrictors, as the amount used is low, and the advantages such as increased the duration of the anesthetic effect are greater, in addition to reducing toxicity and promoting good local hemostasis.[13]

PHYSIOLOGICAL CHANGES AND THEIR INTERFERENCE IN ORAL CARE

Adverse situations related to pregnancy include premature birth, low birth weight and comorbidities related to low birth weight (often without an established cause[29]), pre-eclampsia[21], ulcerations in the gingival tissues, granuloma gravidarum, gingivitis, tooth loss, decreased flow salivary and dental erosions.[30]

Oral diseases, such as periodontitis, can be a risk factor for these adversities. The deeper the periodontal pocket is measured, the more inflammatory tissue will be present. Periodontitis in pregnant women should not be confused with gestational gingivitis. It is controlled through adequate oral hygiene or at the end of pregnancy. Gestational gingivitis is not linked to risk factors for pregnancy. However, if periodontitis is related to possible gestational complications, the treatment carried out by the dentist through periodontal scaling and guidance on good oral hygiene practices should be encouraged from the moment the

pregnancy is diagnosed, due to the low cost and direct relationship with the reduction of adverse pregnancy situations resulting from oral diseases.[29]

Some oral pathological changes are common during pregnancy and can cause problems during pregnancy. These changes are reported with high frequency:

> "[...] the only change that I noticed that also happened in the other pregnancy is that it becomes more sensitive, so I brush it every day, and it bleeds." (G1B1)

> "[...] because it got a little sensitive, because every little thing I do hurts, and blood starts to come out of nowhere." (G1F4)

> "I had bleeding gums, my teeth became more sensitive, yes it changed, it wasn't before." (G4B2)

The gingival tissue has receptors for the hormones estrogen and progesterone, which contributes to increased adhesion of bacterial plaque in the oral tissue.[21] High levels of the hormone estrogen are associated with the presence of microorganisms such as *Prevotella intermedia*, one of the main bacteria responsible for periodontal disease.[29]

The placental microbiota is similar to the oral microbiota. This similarity is due to the fact that placental contamination by oral microorganisms occurs through hematological diffusion[29] to the amniotic fluid, crossing the placenta and causing chorioamniotic infections.[21]

There are three hypotheses that attempt to clarify the link between periodontal disease and premature birth. The first is related to the analysis of amniotic fluid contaminated by periodontal pathogens such as *Eikenella, F. nucleatum and P. gingivalis*, which can cause an inflammatory process in the uterus. The second hypothesis describes that the secretion of cytokines (PGE-2, TNF-α, IL-6, IL-1β) in periodontal disease leads to an inflammatory process which, due to its chemical mediators, would be responsible for prematurity, as PGE - 2 acts on the contraction of uterine smooth muscle. The third hypothesis relates joint activity of the inflammatory response and the immune system to the pathological aggression of the periodontium. Regarding the immune system, there is inhibition of T cell activity, decreased chemotaxis and phagocytosis of neutrophils, changes in the lymphocyte response and decreased production of antibodies.[21]

This process of placental contamination seems to occur mainly in the first trimester of pregnancy, since, even with periodontal treatment starting in the second trimester, contamination of the placenta was still observed at the time of delivery. Therefore, referral at

the time of pregnancy diagnosis is essential to avoid serious complications for the pregnant woman and the fetus.[29]

Some oral problems are related to certain conditions inherent to changes in the pregnant woman's body. During this period, many women experience frequent vomiting, especially during the first months of pregnancy. This increases the oral pH, making it acidic and favoring the emergence of oral lesions, such as cavities and dental erosion, with increased tooth sensitivity.30 These gastric symptoms and their interference in the oral hygiene process can be observed in some reports:

> "I was nauseous at the beginning, it was horrible to brush my teeth. Not only that, but when I brushed it was worse, because the toothpaste made me feel sick, especially in the morning." (G2B1)

> "[...] I have a lot of heartburn." (G4B1)

Fetal development in the third trimester of pregnancy is essential for the mineralization of the fetal skeleton and primary teeth. Vitamin D is essential in this process and crucial for mineral balance, so its insufficiency/deficiency generates serious consequences such as rickets. The amount of vitamin D in the child is directly dependent on the level of this nutrient in the mother. Dental enamel is formed by ameloblastomas and is the most mineralized tissue in the human body, with calcium and phosphate. Vitamin D deficiency leads to abnormalities in the mineralization of teeth such as large pulp chambers with high pulp horns and periapical abscesses unrelated to caries or dental trauma. Insufficiency of this nutrient in the third trimester of pregnancy was associated with an increased risk of tooth decay at 6 years of age.[31]

FINAL CONSIDERATIONS

Through content analysis of the interviews carried out, it can be concluded that, although prenatal care occurs in both BHU and FHUs, with the involvement of doctors, nurses and students, the frequency of guidance on dental prenatal care is low and superficial, with greater attention to the systemic condition of the pregnant woman and the fetus. There is, therefore, a failure in the possibility of providing comprehensive care to pregnant women and taking advantage of their benefits, despite the existence of public health policies with the aim of improving dental care during the gestational period.

Pregnant women identified the need for dental treatment when they noticed changes in their oral health condition, such as gum bleeding (previously non-existent), or even pre-existing oral problems during the current pregnancy, in some cases involving previous pregnancies. However, guidance on the importance of dental monitoring during the gestational period by doctors and nurses is an uncommon practice in Health Units**.**

Some barriers were found in carrying out prenatal care. The difficulty in oral hygiene due to oral and general changes such as nausea, vomiting, heartburn, tooth sensitivity and gum bleeding, associated with the low use of devices and products for correct oral hygiene, served as discouraging factors for seeking dental treatment.

It is concluded that the following factors contributed to the construction of barriers to dental prenatal care: the influence of family and friends; the fear regarding the possibility of performing local anesthesia and the use of medications; prejudices related to delays in care; and the attitude of dentists to postpone appointments and allow pregnant women to choose to postpone care without first arguing with them about the importance of this.

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