ORIGINAL ARTICLE

ORAL HEALTH OF PREGNANT WOMEN TREATED IN SÃO PEDRO DA ALDEIA-RJ

SAÚDE BUCAL EM GESTANTES ATENDIDAS NO MUNICÍPIO DE SÃO PEDRO DA ALDEIA-RJ

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ABSTRACT

Poor dental care during pregnancy may negatively impact pregnant women´s oral health. This study aimed to understand the oral health conditions of pregnant women living in São Pedro da Aldeia, Rio de Janeiro State. In total, 100 pregnant women undergoing prenatal care were included in the Women's, Children's, and Adolescents' Healthcare Program (PAISMCA) study during their gestational period from 14 to 40 weeks, from April to July 2023. Data were collected via clinical dental examinations, semi-structured interviews, and sociodemographic questionnaires. The general Decayed, Missing, and Filled Permanent Teeth (DMFT) index was level 6 (low), 16% of the pregnant women exhibited good gingival health, whereas 84% needed basic and advanced therapy. Despite the oral health condition of the pregnant women evaluated in this study being superior when compared to other studies, the high prevalence of periodontal diseases reflects the need to improve dental and prenatal care in the municipal health network. However, adjustments such as promotion and dissemination of information on dental care for pregnant women, both for dentists and other healthcare professionals, are essential to improve the quality of care provided.

Keywords: Periodontal Diseases, Pregnancy Complications, Infectious, Oral Health, Dental Caries, Prenatal Education.

RESUMO

O acompanhamento odontológico deficiente durante a gestação impacta negativamente a saúde bucal das gestantes. Este estudo teve como objetivo avaliar as condições de saúde bucal das gestantes do município de São Pedro da Aldeia-RJ. Foram incluídas no estudo 100 gestantes em acompanhamento pré-natal no Programa de Atenção à Saúde da Mulher, Criança e Adolescente (PAISMCA) no período gestacional entre 14 e 40 semanas, durante os meses de abril a julho de 2023. Os dados foram coletados mediante aplicação de exame clínico odontológico, entrevista semiestruturada e questionário sociodemográfico. O índice de dentes permanentes cariados, perdidos e obturados (CPOD) médio da população foi 6 (baixo) e 16% das gestantes apresentavam boa saúde gengival, contrapondo 84% que requeriam terapia periodontal básica ou avançada. Embora a condição de saúde bucal das gestantes avaliadas tenha se mostrado superior em comparação a outros estudos, a alta prevalência de doenças periodontais reflete a necessidade de melhoramento do pré-natal odontológico na rede municipal. Medidas como a promoção e divulgação de informações sobre o atendimento odontológico para gestantes, voltadas tanto para cirurgiões-dentistas quanto para outros profissionais de saúde, são essenciais para melhorar a qualidade do cuidado prestado.

Palavras-chave: Doenças Periodontais, Complicações Infecciosas na Gravidez, Saúde bucal, Cárie Dentária, Educação Pré-Natal.

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INTRODUCTION

The pregnancy-puerperium period is characterized by a series of physiological and psychosocial changes, which prepare the woman for pregnancy and childbirth, making continuous support from the family nucleus essential (1-4). Proper dental care during this period is crucial not only for the mother's oral health but also for the baby's healthy development (2). However, emotional, environmental, and cultural factors influence the adherence of pregnant and postpartum women to preventive and dental care practices, such as breastfeeding, prenatal dental consultation, tongue-tie assessment, and oral health maintenance, creating significant challenges for this population (2,3,5-10).

Several popular beliefs exist regarding the oral health of pregnant women: increased pain sensitivity, weakening of teeth, and removal of calcium from the mother's teeth by the fetus (9,10,12). When it comes to myths related to dental care, it is common for pregnant women to believe in the impossibility of using dental anesthesia for procedures, performing X-rays, and other types of dental treatment, which may lead to harmful consequences for baby's health (9,11,12).

Another factor that may contribute to the spread of false information about the oral health of this group is the insufficient training of the dentist in the clinical management of pregnant women: Ignorance or fear regarding the approach to this population can lead to the postponement of procedures or even to interventions that are not very effective (4,13-15). Interdisciplinarity in care and the inclusion of dental follow-up in prenatal care can increase the comprehensiveness of patient care (16-18). Considering the reality of pregnant women and the epidemiological situation of the general population is essential for planning and executing health actions. This study aimed to evaluate the oral health conditions of pregnant women in the municipality of São Pedro da Aldeia, Rio de Janeiro (RJ) State, Brazil.

MATERIAL AND METHODS

This study was approved by the Research Ethics Committee of the Marcílio Dias Naval Hospital, under Opinion No. 5,689,972 and Certificate of Presentation of Ethical Appreciation (CAAE): No. 62842022.4.0000.5256.

This is a cross-sectional study. From April to June 2023, an epidemiological survey was conducted in the municipality of São Pedro da Aldeia-RJ among pregnant women registered in the Women's, Children's, and Adolescents' Healthcare Program (PAISMCA).

Pregnant women in the gestational period between 14 and 40 weeks were included in the study, since the second and third trimesters are considered safer stages of pregnancy. Pregnant women not interested in participating in the research (n=3) were excluded from the sample. Pregnant women who presented with immunodeficiency (n=0) or physical or mental incapacity (n=0) should also be excluded, as in these cases, gingivitis resulting from hormonal changes due to pregnancy could be confused with those from immunological changes or self-care incapacity.

Data were collected through interviews, and oral assessments of the pregnant women was conducted at PAISMCA by directly invitation to those present at the prenatal consultation. Clinical examinations of teeth and gingiva were conducted by a single examiner (DGOB). The Community Periodontal Index of Treatment Needs (CPITN) and the Decayed, Missing, and Filled Teeth (DMFT) index were used.

Each pregnant woman was examined once, and, through a semi-structured interview, they were able to share their own oral health, in addition to responding to preformulated questions.

Sterile periodontal probes and plain mouth mirrors were used for dental and gingival evaluation. For the assessment of the CPITN index, the following criteria were used: TN0: no pockets and no bleeding, with no need for treatment; TN1: bleeding in one or more sites, with an indication only for oral hygiene instruction. TN2: the presence of bleeding and pocket of 4 to 6mm, with an indication for scaling and root planing; TN3: the presence of bleeding and pocket greater than 6mm, requiring advanced periodontal therapy.

The presence of bleeding and the probing depth, which consists of measuring from the gingival margin to the bottom of the sulcus or pocket, were considered for the analysis. For standardization, inaccurate measurements were rounded up; for example, a 7.5mm pocket was recorded as 8.0mm. The total number of decayed, missing, and filled permanent teeth was estimated and divided by the number of individuals examined to obtain the clinical caries index.

Data was tabulated in Excel©. For the sample estimation, the MedCalc® v.22 program was used. Considering a 95% reliability and a 5% margin of error, a minimum sample size of 72 pregnant women was estimated to be necessary for inclusion in the study. Based on this estimation and the application of exclusion criteria, a total of 100 pregnant women were selected to be interviewed. The association between fear of seeking dental care and gingival

health was assessed using the chi-square test. Statistical decisions were made at the significance level α= 0.05, considered significant when p<0.05.

RESULTS

Among the 100 pregnant women evaluated, 26% (n=26) were aged from 21 to 25 years, primiparas accounted for 31% (n=31), 56% (n=56) had a family income of up to 1 minimum wage, and 41% (n=41) had completed elementary education (Table 1).

Table 1 - Demographic data of pregnant women participating in the study

Characteristic	N	%
Age in the current pregnancy		
Up to 20 years	13	13
21 to 25	26	26
26 to 30	24	24
31 to 35	24	24
Above 36	13	13
Current pregnancy number		
1	31	31
2	29	29
3	12	12
4 or more	28	28
Family income (minimum wage)		
Up to 1	56	56
<1 and > 3	38	38
≥ 3 and < 4	5	5
4 or more	1	1
Schooling		
Completed Elementary School	41	41
Completed High School	41	41
Completed Technical School	9	9
Completed Higher Education	9	9

Regarding basic services in the homes of the interviewees, all participants (n=100) had electricity, 97% (n=97) had garbage collection, 96% (n=96) had piped water, and 68% (n=68) had access to sewage services for waste disposal (Table 2).

Table 2 - Housing conditions of the pregnant women in the study

Basic service	N	%
Electricity	100	100
Garbage collection	97	97
Piped water	96	96
Sewage	68	68

Table 3 shows the dental health habits and care of the pregnant women in the study.

Table 3 - Oral health habits and care among pregnant women in the study

Oral health habits and care	N	%
Had a dental consultation during current prenatal care	38	38
Number of dental consultations in the last year		
1	21	21
2	14	14
3	15	15
4	8	8
More than 5	10	10
None	32	32
Guidelines on care to prevent cavities	73	73
Guidelines on care to prevent Periodontal Disease	50	50
Daily toothbrushing frequency		
1	2	2
2	29	29
3	39	39
4	30	30
Only before sleeping	0	0
Dental consultations in the last 5 years		
1	8	8
2	11	11
3	15	15
4	17	17
More than 5	40	40
None	9	9
Guidelines on care to prevent Periodontal Disease	50	50
Sugar consumption throughout the day		
Very sweet	50	50
Never	3	3
Rarely	47	47
Other issues		
Afraid of the dentist	25	25
Would schedule an appointment today	81	81
Dental consultation during current prenatal care	35	35
Dental consultation in previous prenatal care	30	30

Table 4 shows the oral health complaints that motivated the last dental consultation performed by the pregnant woman.

Table 4 - Oral health complaints, reasons for the most recent consultation, and treatments performed by the pregnant women

Variable	N	%
Complaints about oral health	**39**	**39**
Complaints reported (open questions)	Absolute numbers	%
Dental caries	7	17.9
Dental pain	7	17.9
Missing teeth	3	7.7
Refused to answer due to pregnancy	7	17.9
Gingival bleeding	7	17.9
Gingival pain	5	12.8
Could not schedule an appointment	2	5.1
Third molar pain	2	5.1
Difficulty opening the mouth	1	2.6
Procedures at the last appointment	**58**	**58**
Procedures performed in the last appointment	Absolute numbers	%
Dental filling	33	56.9
Dental prophylaxis	9	15.5
Endodontic treatment	5	8.6
Dental evaluation	5	8.6
Tooth extraction	4	6.9
No oral health complaints	**61**	**61**

Regarding periodontal disease, Table 5 details the index that addresses the need for periodontal treatment according to the CPITN index.

Table 6 describes the DMFT indices of pregnant women.

Table 5 - CPITN-based oral examination of pregnant women in the study regarding the need for periodontal treatment

Index	N	%
TN 0	16	16
TN 1	22	22
TN 2	58	58
TN 3	4	4
Presence of bleeding with need for treatment	76	76
Need for dental treatment	39	39

Table 6 - Overall and age-group DMFT

General	6.05
By age group:	
Up to 19 years old (teenagers)	3.1
20 to 35 years (young adults)	5.7
Above 36 years (old adults)	9.6

DISCUSSION

The literature indicates that, on average, only 18% of pregnant women seek dental treatment. The main reasons for appointments include pain (10.5%), tooth extraction (3.7%), dental restoration (15.7%), and endodontic treatment (3.1%) (19). In our study, we observed a higher prevalence of 42%, with 6% seeking treatment for pain, 4% for extractions, 20% for restorations, and 1% for endodontic treatment. We highlight that these lower percentages may not reflect a lesser need for treatment but rather indicate difficulties in accessing services. Moreover, there are myths and beliefs both on the part of pregnant women and healthcare professionals, who often refuse to attend to them just because they are pregnant.

Regarding the frequency of dental appointments in the last year, 32% of pregnant women did not have any appointments during this period. The interval greater than one year between consultations may explain the higher incidence of pregnant women classified as TN2 and the high percentage of gingival bleeding, indicating the need for periodontal care.

In this study, 35% of pregnant women attended dental appointments during prenatal care, a rate lower than that found by Martinelli et al. (23), who recorded 91.2% follow-up. Moreover, this frequency is even lower than that observed in previous pregnancies, which was only 30%. This low rate can be attributed to a memory bias, as pregnant women may not remember having visited the dentist during their previous pregnancies.

When asked about fear of dental care, 25% (n=25) of pregnant women reported being afraid, which agrees with other studies (15,24,25). This considerable portion can partially justify the low demand for dental treatment during pregnancy. Our results also corroborate the study by Pomini *et al*. (26), indicating that 66.2% of women have at least one taboo or myth about dental care during pregnancy, which negatively impacts treatment adherence. We highlight that the low demand for dental care may also be associated with the refusal of professionals to attend to pregnant women, which was reported in other studies (15,16,25) with rates ranging from 16% to 22.4%. An association was also observed between the frequency of dental visits during prenatal care and fear related to dental care, which may justify the low demand for dental services during pregnancy.

The literature shows that gingivitis and periodontal changes are prevalent during pregnancy (3,15,17). We underline that gingival diseases have a chronic

course, making them barely noticeable over time. This feature may explain the 61% of pregnant women who reported no complaints related to oral health.

Regarding dental caries, the overall mean DMFT of 6.05 was considered low compared to the study by Jeremias *et al*. (27), which obtained a value of 13. When segmenting by age group, a very low DMFT was observed in adolescents, low in young adults, and moderate in older adults. Although pregnancy is not a determining factor for the development of dental caries, the biological and psychosocial conditions of most pregnant women, together with the limited knowledge about oral hygiene techniques, can contribute to the emergence of new carious lesions or worsen existing ones (28, 29). In this context, the fact that half of the studied population reported low consumption of sweets may explain the reduced DMFT. However, the 47% who claimed to rarely consume sweets, and the 3% who never consume them, may represent a false negative since certain habits and typical pregnancy symptoms, such as nausea or dietary restrictions imposed by obstetricians and nutritionists, may lead to a reduction in the consumption of sweets exclusively during the gestational period.

A large portion of the patients (76%) required some type of periodontal treatment, with 22% of the cases classified as preventive (TN1), 58% classified as TN2, and 4% as TN3. We found that 62% of pregnant women needed root planing, scaling, and/or correction of restorative margins. The study by Garbin *et al*. (28) identified similar results, with 66.8% of patients needing preventive care (TN1), 22.3% needing scaling and root planing and/or correction of restorative margins, and 10.9% needing more complex treatments, such as periodontal surgery (TN3).

More than half of the pregnant women evaluated (56%) live with a family income of around one minimum wage, and 41% have only elementary education. This reality of income and schooling level is directly reflected in the sanitary conditions of the residences: 32% did not have access to sewage collection, relying instead on cesspools and soakaways, and 4% did not have piped water, depending on artesian wells for consumption. Despite deficiencies in basic sanitation indicators and the lack of fluoridated water supply for the entire municipality population, the overall DMFT was considered low, indicating a low prevalence of dental caries.

This study presents some limitations: not all pregnant women in the Municipality of São Pedro da Aldeia are served by PAIMSCA. Moreover, as it is a cross-sectional study, it is impossible to establish a cause-and-effect relationship. Memory bias is also a potential limitation, as participants may have had difficulties recalling information about previous pregnancies. Despite these limitations, the study provides important epidemiological data that can inform healthcare guidelines in São Pedro da Aldeia. Therefore, further studies with different designs are needed to identify the underlying conditions hindering access to dental care during pregnancy.

CONCLUSION

Despite the low level of education and family income, the overall DMFT was considered satisfactory from a dental health perspective. However, gingival health requires attention, given the high percentage of pregnant women with gingival bleeding. According to the CPITN index, more than half of the pregnant women needed TN2 treatment, characterized by periodontal pockets of 4 to 6 mm, visible calculus, and plaque retention factors, thus requiring professional scaling. In this context, it is essential that the Municipal government promotes and widely disseminates information about the importance of dental care for pregnant women, including educational actions directed both at municipal network dentists and other health professionals, such as doctors, nurses, and community agents. These initiatives are essential to demystify the belief that dental treatment is unsafe during pregnancy and to spread the culture that this care is safe and necessary.

The authors declare that there is no conflict of interest.

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