

Knowledge, interest, and confidence of pregnant women and the baby's oral health

Conhecimento, interesse e segurança das gestantes sobre saúde bucal da gestante e do bebê

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How to cite: Souza e Silva D, Bicheiro MA, Sarracini KM, Tanaka MH, Marangoni-Lopes L. Knowledge, interest, and confidence of pregnant women and the baby's oral health. Rev Odontol UNESP. 2025;54:e20250007. <https://doi.org/10.1590/1807-2577.20250007>

Resumo

Introdução: A gestação causa alterações físicas, sistêmicas e comportamentais que podem aumentar o risco à cárie e doença periodontal. Estas condições estão associadas a parto prematuro e baixo peso ao nascer. Sendo assim, o acompanhamento odontológico é fundamental. Contudo, há que dificultam o acesso das gestantes ao cuidado odontológico. **Objetivo:** Analisar o conhecimento, interesse e segurança das gestantes sobre os cuidados bucais da gestante e do bebê através de um estudo observacional transversal. **Material e método:** Foi aplicado um questionário estruturado na plataforma Google Formulários às gestantes de 18 e 41 anos (n=104), contendo 05 questões sobre informações sociodemográficas e 05 questões sobre o conhecimento e segurança das gestantes sobre a saúde bucal durante a gestação e do bebê. Os resultados foram comparados entre as respostas dicotômicas pelo teste t para os dados numéricos e Mann-Whitney para os dados ordinais. Além disso, foi realizada análise de correlação de Spearman para as variáveis que apresentaram diferença estatística. **Resultado:** As gestantes tinham idade média de 26,8 anos, com uma média de 25,3 semanas de gestação. A maior parte das gestantes (50%) tinha ensino médio completo, renda familiar de 1 a 5 salários mínimos (86,5%), e estava na primeira gestação (54,8%). As gestantes que receberam orientação com relação à saúde bucal, e relataram se sentir seguras sobre como cuidar da saúde bucal do seu bebê tem maior escolaridade (p= 0.020) e idade (p=0.004). Foi observado correlação positiva fraca (Coef. Spearman = 0.248) entre a escolaridade das gestantes e a orientação sobre saúde bucal na gestação e segurança sobre como cuidar da saúde bucal do seu bebê. **Conclusão:** Pode-se concluir que há interesse das gestantes pelo assunto, entretanto parte significativa delas, especialmente as com menor escolaridade, relatam ter conhecimento limitado e não se sentir seguras quanto aos cuidados bucais maternos e infantis.

Descritores: Educação em saúde bucal; gravidez; odontologia preventiva.

Abstract

Introduction: Pregnancy causes physical, systemic, and behavioral changes that can increase the risk of caries and periodontal disease. These conditions are associated with preterm birth and low birth weight. Therefore, dental follow-up is essential. However, several barriers still hinder pregnant women's access to dental care. **Objective:** To analyze the knowledge, interest, and safety of pregnant women and their babies' oral care through a cross-sectional observational study. **Material and method:** Structured questionnaire for pregnant women aged between 18 and 41 years (n=104) containing five questions to gather sociodemographic information and five questions addressing the knowledge and safety of pregnant women and their babies' oral health during pregnancy, via Google Forms platform. Dichotomous answers were compared by the t-test for numerical data and by the Mann-Whitney test for ordinal data. In addition, Spearman's correlation analysis was performed for the variables presenting statistical differences. **Result:** The mean age of the pregnant women was 26.8 years, with a mean of 25.3 weeks of pregnancy. Most of the pregnant women (50%) had completed high school, with a family income of one to five minimum wages (86.5%) and were in their first pregnancy (54.8%). Pregnant women who were instructed regarding oral health and felt confident about how to take care of their baby's oral health had higher education (p= 0.020)



and age ($p=0.004$). The education level of pregnant women and instruction on oral health during pregnancy showed a positive correlation with feeling confident on how to take care of their babies' oral health (Coef. Spearman = 0.248). **Conclusion:** Although pregnant women showed interest in the topic, a large number of them — especially those with lower educational levels have limited knowledge and do not feel confident about maternal and infant oral health care.

Descriptors: Oral health education; pregnancy; preventive dentistry.

INTRODUCTION

Pregnancy poses several physical, systemic, and psychological changes. Physical changes include weight gain, larger waist abdominal circumference, and rearrangement of internal organs¹, while physiological and hormonal changes include increased estrogen and progesterone², as well as emotional and behavioral changes³, depending on socioeconomic and environmental variables. These and other changes can affect the quality of life and behavior of pregnant women⁴. Therefore, it is key for pregnant woman to be given professional follow-up by a multidisciplinary team.

In addition, pregnancy might also lead to changes in eating and oral hygiene habits that predispose to caries lesions⁵, as well as hormonal changes that, together with poor oral hygiene, may predispose to periodontal disease⁶. Studies have shown possible associations between periodontal disease and premature birth and low birth weight, thus making these potentially harmful to the baby^{7,8}, highlighting the importance of dental follow-up during pregnancy.

Dental prenatal care is also important to instruct pregnant women on baby care. The absence of early hygiene and oral brushing habits, inadequate dietary habits, such as the early introduction of sugary foods, lead to higher risk of caries in early childhood⁹. Therefore, dental follow-up is essential to motivate and correctly instruct brushing techniques and healthy eating habits, in addition to preventing caries disease in childhood¹⁰.

However, dental care during pregnancy still faces some important barriers, such as little attention paid to the topic, negative stigma regarding dental care, fear and anxiety about dental treatment, financial issues, lack of time, lack of information, and beliefs and myths about the safety of dental treatment during pregnancy¹¹. In addition, there is no consensus among dentists and other health professionals who work in prenatal care about oral health care during pregnancy¹².

In this scenario, it can be difficult for pregnant women to be interested in the topic and have access to information and knowledge regarding their own oral health and the oral health of the baby. Many pregnant women may even feel insecure about oral care and the need for dental follow-up for themselves and their baby. Thus, this study aimed to evaluate the knowledge, interest, and confidence of pregnant women regarding their oral care and their babies' during pregnancy. Our hypothesis is that sociodemographic factors influence the knowledge, interest, and confidence of pregnant women regarding maternal and infant oral care.

MATERIAL AND METHOD

This study follows the Declaration of Helsinki (2000) and was approved by the local Ethics Committee under process No. 4261.232. This is a cross-sectional observational study based on the application of an online questionnaire for pregnant women.

The survey was shared electronically through social media based on the snowball-type non-probabilistic sampling technique. Pregnant women were invited to participate in the study through the Internet. The goal was to assess the knowledge of pregnant women about their and the baby's oral health. The questionnaire was answered by all pregnant women who agreed to participate ($n=104$) and signed the Informed Consent Form. This study covers a convenience sample composed of pregnant women who voluntarily consented to participate in the study. Pregnant women who did not complete the questionnaire were excluded.

The structured questionnaire contained five questions to gather sociodemographic and pregnancy-related information (age, education, family income, length of gestation, and whether it was the first pregnancy) and five questions about the knowledge and confidence of pregnant women about oral health during pregnancy. The questionnaire was developed to address the study questions and formulated on the Google Forms platform. Following the questions, the pregnant women were given an e-book called Guide to Maternal and Child Oral Care, by the Brazilian Society of Pediatrics. The data were collected from July to October 2020.

All data gathered from the questionnaires were tabulated in an Excel spreadsheet, and descriptive statistics were performed based on mean, standard deviation, and absolute and relative frequency. Yes and No answers for the data on sociodemographic and pregnancy-related variables were compared by the t-test for numerical data (age and weeks of pregnancy), whereas the Mann-Whitney was applied for ordinal data (schooling, income, and first pregnancy). In addition, Spearman's correlation analysis was performed for the variables presenting statistical differences. All analyses were conducted considering a significance level of 5%.

RESULT

The questionnaire obtained a total of 104 responses. The sociodemographic and pregnancy data (Table 1) pointed to the pregnant women aged between 18 and 41 years, with a mean age of 26.8 years. Pregnant women from the first to the 41st week of pregnancy answered the questionnaire, with an average of 25.3 weeks. The education level of most of the pregnant women (50%) was complete high school and the family income reached most one to five minimum wages (86.5%). In addition, most of them were in their first pregnancy (54.8%).

Table 1. Descriptive statistics of the sociodemographic data and answers of the pregnant women (n=104)

	Mean (Standard Deviation)		
Age	26.8 (5.2)		
Weeks of pregnancy	25.3 (10.8)		
	n (%)	Yes n (%)	No n (%)
Schooling			
Primary education	1 (1%)		
Elementary school	5 (4.8%)		
Middle school	52 (50%)		
Higher education	32 (30.8%)		
Graduate programs	14 (13.5%)		
Family Income*			
1 to 5 minimum wages	90 (86.5%)		
6 to 10 minimum wages	10 (9.6%)		
More than 10 minimum wages	4 (3.8%)		
Is it your first pregnancy?		57 (54.8%)	47 (45.2%)
Have you received any professional oral health guidance during this pregnancy?		50 (48.1%)	54 (51.9%)
Have you been or will go to the dentist for treatment or prevention during this pregnancy?		59 (56.7%)	45 (43.3%)
Do you feel confident about your knowledge regarding how to take care of your own oral health during pregnancy?		65 (62.5%)	39 (37.5%)
Have you ever been given some professional guidance about your baby's oral health?		25 (24%)	79 (76%)
Do you feel confident about your knowledge regarding how to take care of your baby's oral health?		40 (38.5%)	64 (61.5%)

*Minimum income during the study period: R\$1,045.00.

Table 2 shows that pregnant women who answered “yes” to the questions about being given professional guidance on oral health had significantly higher schooling ($p < 0.0001$) compared to those who answered “no”. In addition, pregnant women who answered “yes” to the question about having gone to or going to the dentist had a lower number of pregnancy weeks ($p = 0.023$). Those who reported having received guidance on the baby’s oral health were older and had higher levels of education ($p = 0.004$), which also applies for those who felt confident about the baby’s oral health care (age – $p = 0.02$ and education – $p = 0.001$).

Table 2. Difference in age, weeks of gestation (mean $\pm$ standard deviation), schooling, and family income (n(%)) for the YES or NO answer to each of the questionnaire questions

	Have you been given any professional guidance on oral health during this pregnancy?			Have you been or will you go to the dentist for treatment or prevention during this pregnancy?			Do you feel confident about your knowledge regarding how to take care of your own oral health?			Have you been given any professional guidance about your baby’s oral health?			Do you feel confident about your knowledge regarding how to take care of your baby’s oral health?		
	Yes	No	p	Yes	No	p	Yes	No	p	Yes	No	p	Yes	No	p
Age¹	27.46 $\pm$ 5.8	26.26 $\pm$ 4.6	0.107	27.27 $\pm$ 5.1	26.20 $\pm$ 5.4	0.146	26.9 $\pm$ 5.3	26.5 $\pm$ 5.1	0.334	29.2 $\pm$ 5.9	26.1 $\pm$ 5.8	0.004*	28.2 $\pm$ 5.9	25.9 $\pm$ 4.6	0.02*
Weeks of gestation¹	26.94 $\pm$ 10.8	23.70 $\pm$ 10.7	0.064	23.40 $\pm$ 10.3	27.7 $\pm$ 11.1	0.023*	25.8 $\pm$ 10.9	24.3 $\pm$ 10.8	0.239	22.8 $\pm$ 12	26.1 $\pm$ 10.1	0.093	23.6 $\pm$ 12	26.3 $\pm$ 10	0.106
Education²															
Primary education	4 (9.7%)	0		5 (8.5%)	0		5 (7.8%)	0		3 (12%)	2 (2.6%)		3 (7.5%)	2 (3.2%)	
Elementary school	21 (51.2%)	25 (56.8%)		27 (45.8%)	25 (56.8%)		34 (53.1%)	18 (46.2%)		11 (44%)	41 (52.6%)		20 (50%)	32 (50.8%)	
Middle school	12 (29.3%)	14 (31.8%)	<0.0001*	18 (30.5%)	14 (31.8%)	0.454	15 (23.4%)	17 (43.6%)	0.053	7 (28%)	25 (32%)	0.004*	9 (22.5%)	23 (36.5%)	0.001*
Higher education	4 (9.7%)	5 (11.4%)		9 (15.6%)	5 (11.4%)		10 (15.6%)	4 (10.3%)		4 (16%)	10 (12.8%)		8 (20%)	6 (9.5%)	
Graduate studies	0	0		0	0		0	0		0	0		0	0	
Family income²															
1 to 5 minimum wages	44 (88%)	46 (85.2%)		51 (86.4%)	39 (86.7%)		55 (84.6%)	35 (89.7%)		22 (88%)	68 (86%)		33 (82.5%)	57 (89%)	
6 to 10 minimum wages	6 (12%)	4 (7.4%)	0.121	7 (11.9%)	3 (6.7%)	0.452	6 (9.2%)	4 (10.3%)	0.096	3 (12%)	7 (8.9%)	0.405	5 (12.5%)	5 (7.8%)	0.467
more than 10 minimum wages	0	4 (7.4%)		1 (1.7%)	3 (6.7%)		4 (6.2%)	0		0	4 (5.1%)		2 (5%)	2 (3.2%)	

¹t-test. ²Mann-Whitney test. *Statistical significance ($p < 0.05$).

In Table 3, Spearman’s correlation analyses indicated a weak positive correlation between schooling and guidance on the oral health of both the mother ($r = 0.248$) and the baby ($r = 0.303$), as well as feeling confident about the baby’s oral health care ($r = 0.354$). In addition, there was a weak negative correlation between pregnancy weeks and visits to the dentist ($r = -0.219$). No significant correlation was found between age and feeling confident regarding the care of the baby’s oral health.

Table 3. Correlation between sociodemographic variables and answers to questions (n=104)

	Have you been given any professional guidance on oral health during this pregnancy?		Have you been or will you go to the dentist for treatment or prevention during this pregnancy?		Do you feel confident about your knowledge regarding how to take care of your own oral health during pregnancy?		Have you been given any professional guidance about your baby's oral health?		Do you feel confident about your knowledge regarding how to take care of your baby's oral health?	
	Coef. Spearman	P	Coef. Spearman	P	Coef. Spearman	P	Coef. Spearman	P	Coef. Spearman	P
Age					0.04	0.683			0.188	0.0554
Weeks of gestation			- 0.219	0.025*						
Schooling	0.248	0.011*					0.303	0.002*	0.354	0.023*

*Statistical significance ($p < 0.05$).

DISCUSSION

The age range of the pregnant women in our study (18-41 years) focuses on a shorter interval than that of pregnancies in the state of São Paulo (15 to 49 years of age), but with a mean age (26.8 years) within the national range (25-29 years)¹³. Despite the absence of correlation, older pregnant women reported feeling confident and having been given some professional guidance on the baby's oral health. Older women are more likely to have greater concern and life experience; therefore, they seek further information about oral health¹⁴. In this sense, a study showed that preventive behaviors, such as the search for health information, were directly associated with age and educational level.¹⁵ It is also possible that these pregnant women had been instructed on the matter in previous pregnancies, since 45.2% of the pregnant women were not experiencing their first pregnancy.

Regarding the level of education, most of the pregnant women had completed high school, while others had undergraduate and graduate courses. The level of education influences the knowledge and care of oral health by allowing greater opportunities for access to health information¹⁶⁻¹⁸. In fact, we observed that pregnant women who were instructed about their own oral health and the baby's have a higher level of education, in addition to feeling confident about how to take care of the baby's oral health, which showed a positive correlation, although weak. The literature describes that pregnant women with greater access to education are more likely to take positive actions and gather more information and preventive care in oral health¹⁹. In addition, mothers with a lower level of education had children with a higher prevalence of caries²⁰.

Furthermore, pregnant women who had been pregnant for a shorter period of time showed greater interest in going to the dentist during the pregnancy for treatment and prevention. On this subject, dental care should be performed during pregnancy and quarterly consultations are recommended, including plaque control, oral hygiene instructions, professional prophylaxis, and other instructions²¹. The greater demand for care in the first trimester may be linked to the physical and emotional availability of pregnant women during this period. Moreover, many professionals are still hesitant to perform dental procedures in the third trimester, even without formal contraindications²².

In terms of family income, most pregnant women ranged the first salary, which possibly explains the lack of statistical difference in the answers. Even the literature shows that income interferes with oral hygiene habits during pregnancy and access to dental treatment for pregnant women²³. The absence of statistical association in our study may be related to the homogeneity of the sample in terms of socioeconomic status. Even so, these data reinforce the importance of strengthening public policies that promote universal and equitable access to dental prenatal care, especially for populations in situations of social vulnerability.

Our results highlight a worrying outcome regarding the access to guidance on dental care for both pregnant women and their babies. Most pregnant women were given no professional instruction on their or their babies' oral health during pregnancy. This finding corroborates other studies^{16,21} pointing out that most pregnant women received no dental guidance during pregnancy.

In view of these results, pregnant women must become a priority in dental care programs. Dental follow-up of pregnant women is key both to diagnose and treat possible oral changes during pregnancy, in addition to instructing on prevention by providing important information on hygiene and diet, as well as demystifying beliefs about oral care and dental treatment.

Instruction given to pregnant women must cover information on the baby's oral health before and after the onset of tooth eruption. The national health policy guidelines state that the mother has a fundamental role in the behavior patterns learned during childhood; thus, healthy habits must be introduced from the beginning of the child's life, including guidance on eating habits in terms of sugar intake and oral hygiene²⁴.

The literature regards pregnant women¹⁶ as a strategic population group for the application of educational programs, recognizing pregnancy as a favorable phase for establishing healthier habits. This is because pregnant women are psychologically receptive to acquiring new knowledge that favors adopting new and better health practices, whose benefits extend to other family members. Thereby, pregnancy is an ideal phase for the setting healthy habits since pregnant women is psychologically receptive to acquiring new knowledge and changing patterns that can influence the development of the baby's oral health, making prenatal dental care necessary.

This study has some limitations that should be considered. The sampling was non-probabilistic, being recruited through social networks and virtual groups, which may have generated a selection bias and limited the generalization of the results to other populations of pregnant women. The use of an online self-administered questionnaire may also have influenced the answers, especially in terms of the interpretation of the questions and the participants' self-perception of their knowledge and confidence about oral health. Despite these limitations, this study provides relevant data on the subject and can contribute to the planning of educational actions aimed at pregnant women.

Further studies should adopt longitudinal designs to monitor the evolution of knowledge, interest, and confidence of pregnant women throughout pregnancy and in the postpartum period. In addition, investigations with probabilistic sampling and expanded geographic coverage can strengthen the representativeness of the data. It would also be relevant to exploit structured educational interventions, evaluating their impact on behavior change and increased confidence of pregnant women regarding maternal and infant oral care.

CONCLUSION

Although pregnant women are interested in the theme, a significant part of them, especially those with less schooling, have limited knowledge and do not feel confident about maternal and infant oral care. In addition, there is a weak positive correlation between education level, access to information, and preparation for baby care. These findings highlight the need for greater provision of dental guidance during prenatal care, aiming to promote the oral health of both pregnant women and their babies.

AUTHORS' CONTRIBUTIONS

Daniella de Souza e Silva: Conceptualization, Study design, Drafting of the manuscript, Approval of the final version. Maria Alana Bicheiro: Conceptualization, Study design, Drafting of the manuscript, Approval of the final version. Karin Migliato Sarracini: Data analysis and interpretation, Critical review of manuscript content, Approval of the final version. Marcia Hiromi Tanaka: Data analysis and interpretation, Critical review of manuscript content, Approval of the final version. Lenita Marangoni Lopes: Conceptualization, Study design, Data analysis and interpretation, Critical review of manuscript content, Approval of the final version.

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interest.

DATA AVAILABILITY

Data is available on demand from referees.

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Received: March 24, 2025

Accepted: October 20, 2025

Edited by

Editor: Ana Valença

Associate Editor: Laura Primo