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Responsibility for oral health: the perception of pregnant women

Responsabilização sobre a saúde bucal: a percepção de gestantes

Maria Bethânia Ramos **Calsavara**[1] 0000-0003-0869-4679
Tânia Adas **Saliba**[1] 0000-0003-1327-2913
Lia Borges de Mattos **Custódio**[1] 0000-0002-1778-111X
Fernando Yamamoto **Chiba**[1] 0000-0003-4406-405X
Suzely Adas Saliba **Moimaz**[1] 0000-0002-4949-529X

ABSTRACT

Objective: To analyze the perception of pregnant women regarding responsibility for their oral health. **Methods**: This was a cross-sectional, quantitative study based on document analysis of 1,485 medical records of pregnant women from a municipality in the interior of São Paulo, Brazil. The variables analyzed were age, education level, income, marital status, and main complaint. The outcomes included self-perception, responsibility for oral health, and oral hygiene habits. Statistical association tests

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Article aligned with the Good Health and well-being and Quality education goal of the Sustainable Development Goals (SDGs)

[1] Universidade Estadual Paulista Júlio de Mesquita Filho, Faculdade de Odontologia de Araçatuba, Departamento de Odontologia Infantil e Social. Rua José Bonifácio, 1193, Vila Mendonça, 16015-050, Araçatuba, São Paulo, Brasil. Correspondência para/Correspondence to: SAS Moimaz. E-mail: <suzely.moimaz@unesp.br>.

were applied (p<0.05). **Results**: Among the 1,485 pregnant women, 42.76% (n=635) were up to 27 years old; 85.22% (n=1,265) had completed high school; 34.07% (n=506) had an income of up to two minimum wages; and 54.95% (n=727) were married. Most sought dental care for routine treatment or prevention (46.80%), which was associated with age (p<0.0001). The majority perceived themselves as responsible for their oral health (53.13%) and sought health services for routine or preventive procedures (p=0.0003). A higher education level was associated with greater satisfaction with oral health (p=0.0117). In total, 88% reported brushing their teeth twice a day, but 58.92% never or rarely used dental floss. **Conclusion**: The education level of pregnant women influences their health literacy, decision-making, and self-perception of oral health. While nearly all reported brushing their teeth, few used dental floss.

Indexing terms: Oral health. Pregnant women. Self-perception.

RESUMO

Objetivo: analisar a responsabilização sobre a saúde bucal na percepção de gestantes. **Métodos**: trata-se de uma pesquisa transversal, quantitativa, de análise documental de 1.485 prontuários de gestantes do interior de São Paulo. Analisaram-se idade; escolaridade; renda; estado civil e queixa principal. Os desfechos foram autopercepção, responsabilidade sobre a saúde bucal e hábitos de higiene bucal. Foram empregados testes de associação(p<0,05). **Resultados**: do total de 1485 gestantes, 42,76% (n=635) tinham até 27 anos; 85,22% (n=1.265) concluíram o ensino médio; 34,07% (n=506) possuíam renda de até 2 salários-mínimos; e 54,95% (n=727) eram casadas. Buscaram o cirurgião-dentista principalmente para tratamento de rotina ou prevenção (46,80%), o que esteve associado à idade (p<0,0001). A maioria traz para si a responsabilidade sobre a saúde bucal (53,13%) e buscou o serviço de saúde para realizar procedimentos de rotina ou prevenção (p=0,0003). O maior nível de escolaridade esteve associado à maior satisfação com a saúde bucal (p=0,0117). Do total, 88% possuem o hábito de escovar os dentes duas vezes ao dia, mas 58,92% nunca usaram ou raramente usam o fio dental. **Conclusão**: a escolaridade das gestantes influencia no letramento em saúde, na tomada de decisões e na autopercepção da saúde bucal. Quase todas as gestantes escovam os dentes, porém poucas usam o fio dental.

Termos de indexação: Saúde bucal. Gestantes. Autopercepção. Saúde bucal.

INTRODUCTION

Promoting health means “enabling people to increase control over, and to improve, their health. To achieve an adequate state of physical, mental, and social well-being, a group must be able to identify and fulfill its aspirations, satisfy its needs, and adapt to or modify the environment”. Within the framework of this definition, established during the First International Conference on Health Promotion in 1986 [1], the concept of empowerment emerged as a central element in health promotion strategies.

Empowerment can be understood as a process committed to transforming reality, characterized by active social participation aimed at promoting health and fostering healthy individuals [2]. In practice, empowerment should be considered an educational process that also depends on social, cultural, economic, and cognitive conditions. Its purpose is to support individuals in developing the ability to engage and take an active stance in decision-making processes concerning their own lives [3].

The field of Health Literacy (HL) encompasses the knowledge, motivation, and competencies to access, understand, evaluate, and apply health information in order to make informed judgments and decisions in everyday life concerning healthcare, disease prevention, and health promotion, with the aim of

maintaining or improving quality of life [4]. Evidence indicates that inadequate levels of HL are associated with poorer general and oral health outcomes [4].

Health literacy can be classified into three categories: basic/functional, characterized by sufficient basic reading and writing skills to function effectively in everyday situations; communicative/interactive, which refers to more advanced cognitive and literacy skills that, together with social skills, enable individuals to extract information and meaning from various forms of communication and apply new information to changing circumstances; and critical health literacy, understood as advanced cognitive and social skills that allow individuals to critically analyze information and use it to exert greater control over life events and situations, thereby enhancing personal empowerment and autonomy in decision-making [5].

In this context, health literacy is understood as a resource to enhance individuals' empowerment in the field of healthcare, encompassing disease prevention and health promotion [4]. Health literacy influences the empowerment of individuals, communities, and families, and, in turn, is influenced by factors such as educational level [6].

In healthcare services, patients' perceptions of the care they receive are rarely assessed, despite being a crucial element in evaluating the quality of services provided, especially considering that the patient should be at the center of the healthcare process.

In parallel with the clinical assessment of oral health conducted by dental professionals, it is essential to evaluate individuals' self-perception of their oral health status, as behavior is shaped by one's perceptions and the importance attributed to them [7].

Perceived need is one of the key factors influencing health-related actions, and an individual's sense of control is considered a significant sociobehavioral factor [8]. In light of this, the use of subjective indicators has been proposed, as they complement clinical information by offering insight into individuals' perceptions of their oral health and perceived need for treatment.

Self-perception of health status can be defined as the interpretation of one's health condition based on an analysis of both objective and subjective aspects, considering the individual's perspective as well as the social, cultural, and historical context in which they are embedded [9].

Due to the importance of health literacy, self-perception, and empowerment for the development of healthy individuals, the gestational period is considered ideal for employing empowerment methodologies, given the receptivity to new information and the incorporation of healthy habits by pregnant women, motivated by concern for the new life they are nurturing [10]. When adequately motivated and guided, pregnant women act as multipliers of healthy habits to their babies and families [11].

Educational practices aimed at pregnant women are generally conducted within healthcare services; however, it is essential to analyze factors related to health literacy and their influence on decision-making and self-perception of oral health, with the intention of planning and developing effective health programs and policies to improve the quality of life of pregnant women.

It is crucial to understand to whom the pregnant woman attributes responsibility for her own health, considering that those who assume responsibility themselves may demonstrate more satisfactory outcomes in health education practices compared to those who delegate responsibility to the healthcare professional.

The objective of this study was to assess the perception of responsibility and satisfaction with oral health and oral hygiene habits among pregnant women attended at a medium-complexity medical referral center within the *Sistema Único de Saúde* (SUS, Brazilian Unified Health System).

METHODS

This study is a cross-sectional, quantitative, documentary analysis based on the medical records of pregnant women attended in a prenatal health program. A total of 1,485 medical records of pregnant women seen at a *Ambulatório de Especialidades Médicas* (AME, Medical Specialty Outpatient Clinic) in the state of São Paulo were reviewed.

Inclusion criteria comprised pregnant women who participated in the dental prenatal care program, while those with missing data related to the primary outcome of this study were excluded.

To characterize the sample profile, the following variables were considered: age (class distribution by median), education level (illiterate; incomplete elementary school; complete elementary school; incomplete high school; complete high school; incomplete higher education; complete higher education), income (up to 1 minimum wage; 1 to 2 minimum wages; more than 2 minimum wages), marital status (cohabiting; married; divorced; single; widowed), main complaint, and oral hygiene habits. The primary outcomes assessed were self-perception of oral health and understanding of the main individual responsible for maintaining oral health.

In the dental prenatal care program, patients undergo a detailed anamnesis regarding their oral health, including questions related to the main complaint, oral hygiene habits, satisfaction with oral health and the appearance of teeth and gums, as well as understanding of the primary individual responsible for maintaining oral health. The main complaint was investigated, and responses were categorized as follows: prevention, routine treatments, and pain or urgency. Regarding hygiene habits, the frequency of daily tooth brushing and flossing was examined, with response options of “never,” “rarely,” “once a day,” and “twice or more times a day”.

Data analysis was conducted using Epi Info15 version 7.2 for Windows®11. The data were described and analyzed through association statistical tests at a significance level of 5% with a 95% confidence interval, employing the Bioestat software [12].

This study was submitted to and approved by the Human Research Ethics Committee, with all ethical aspects of research involving human subjects respected and approval obtained under protocol number 1,914,629, in accordance with the Helsinki Declaration [13].

RESULTS

In the present study, it was observed that, among a total of 1,485 medical records of pregnant women, the median age was 27 years; 54.95% (n=727) were married, 85.22% (n=1,265) had completed up to high school, and only 21.08% (n=313) had an income higher than two minimum wages. Regarding the main complaint, 50.16% (n=745) reported seeking routine treatments, and 53.13% (n=789) understood that self-care measures are the primary way to prevent oral health problems (table 1).

Concerning the outcomes of association tests between the “primary way to prevent oral health problems” and independent variables, it was noted that pregnant women who indicated self-care measures as the main prevention strategy were younger than 27 years. Additionally, those who sought health services for preventive purposes also advocated self-care measures as the primary way to avoid oral problems (table 2).

Table 1. Numerical and percentage distribution of pregnant women's profiles, main complaint, and main method to prevent oral health problems, from 1998 to 2022. Araçatuba-SP, 2025.

Variables	n	%
Age		
13 - 18 years old	134	9.02
19 - 30 years old	879	59.19
31 - 45 years old	452	30.44
Not informed	20	1.35
Total	1,485	100.00
Education level		
Illiterate	5	0.34
Incomplete primary education	217	14.61
Completed primary education	139	9.36
Incomplete secondary education	279	18.79
Completed secondary education	625	42.09
Incomplete higher education	60	4.04
Completed higher education	136	9.16
Not informed	24	1.62
Total	1,485	100.00
Income		
Up to 1 minimum wage	195	13.13
From 1 to 2 minimum wages	311	20.94
More than 2 minimum wages	313	21.08
Not informed	666	44.85
Total	1,485	100.00
Marital status		
In a consensual union	286	19.26
Married	816	54.95
Divorced	33	2.22
Single	320	21.55
Widowed	6	0.40
Not informed	24	1.62
Total	1,485	100.00
Main complaint		
Prevention	220	14.74
Routine treatments	745	50.16
Pain or emergency	334	22.48
Referred	63	4.24
Not informed	123	8.28
Total	1,485	100.00

Table 1. Numerical and percentage distribution of pregnant women's profiles, main complaint, and main method to prevent oral health problems, from 1998 to 2022. Araçatuba-SP, 2025.

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Variables	n	%
Main method to prevent oral health problems		
Self-care measures	789	53.13
Visiting the dentist	241	16.23
Both	357	24.04
Not informed	98	6.60
Total	1,485	100.00

Table 2. Distribution of pregnant women according to the relationship between the main method to prevent oral health problems and marital status, income, education level, age, and main complaint, during the period from 1998 to 2022. Araçatuba-SP, 2025.

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Variables	Main method to prevent oral health problems				Total	*p*-value*
	Both	Visited Servisse	Self-care measures	Not informed		
	n					
Marital status						
In a consensual union	75	44	148	19	286	0.1336
Married	198	125	448	45	816	
Divorced	9	7	16	1	33	
Single	65	62	173	20	320	
Widowed	4	0	1	1	6	
Not informed	6	3	3	12	24	
Total	357	241	789	98	1,485	
Income						
Up to 1 minimum wage	0	1	1	0	2	1.0000
From 1 to 2 minimum wages	215	73	193	23	504	
More than 2 minimum wages	122	30	143	18	313	
Not informed	20	137	452	57	666	
Total	357	241	789	98	1,485	
Education level						
Illiterate	0	3	2	0	5	<0.0001
Incomplete primary education	33	51	118	15	217	
Completed primary education	27	29	71	12	139	
Incomplete secondary education	58	47	156	18	279	

Table 2. Distribution of pregnant women according to the relationship between the main method to prevent oral health problems and marital status, income, education level, age, and main complaint, during the period from 1998 to 2022. Araçatuba-SP, 2025.

Variables	Main method to prevent oral health problems				Total	*p*-value*
	Both	Visited Servisse	Self-care measures	Not informed		
	n					
Completed secondary education	166	92	337	30	625	<0.0001
Incomplete higher education	18	7	31	4	60	
Completed higher education	52	10	69	5	136	
Not informed	3	2	5	14	24	
Total	357	241	789	98	1,485	
Age						
< 27 years old	125	135	417	45	722	<0.0001
≥ 27 years old	228	104	366	45	743	
Not informed	4	2	6	8	20	
Total	357	241	789	98	1,485	
Main complaint						
Prevention	64	38	111	7	220	<0.0001
Routine treatments	198	111	406	30	745	
Pain or emergency	50	54	197	32	333	
Referred	27	10	21	5	63	
Not informed	16	27	52	29	124	
Total	355	240	787	103	1,485	

Note: **p*-values obtained using the Chi-square test, with a significance level of 5%.

Table 3 shows that educational level is associated with self-perceived oral health. The tests indicated that pregnant women with at least a high school education reported greater satisfaction with their oral health compared to those who had not completed high school.

Table 4 shows that most pregnant women brush their teeth at least twice a day, however, they do not use dental floss daily.

DISCUSSION

In this study on the perception of responsibility, satisfaction with oral health, and hygiene habits among pregnant women, an association was observed between higher education levels and the consideration of self-care measures as the primary way to prevent oral health problems.

Table 3. Distribution of pregnant women according to the relationship between their education level and satisfaction with the appearance of the mouth, teeth, gums, and the feeling of a healthy mouth, during the period from 1998 to 2022. Araçatuba-SP, 2025.

Variables	Education level								Total	*p*- value*
	Illiterate	Incomplete primary education	Complete primary education	Incomplete secondary education	Complete secondary education	Incompleted higher education	Completed higher education	Not informed		
Satisfied with the appearance of the mouth										
Yes	0	11	6	19	68	12	19	2	137	
No	0	45	24	61	123	9	21	2	285	0.0013
Not informed	5	161	109	199	434	39	96	20	1,063	
Total	5	217	139	279	625	60	136	24	1,485	
Satisfied with the appearance of the teeth										
Yes	0	14	9	19	75	10	32	3	162	
No	0	26	23	49	109	16	25	4	252	0.0271
Not informed	5	177	107	211	441	34	79	17	1,071	
Total	5	217	139	279	625	60	136	24	1,485	
Satisfied with the appearance of the gums										
Yes	0	22	12	28	115	16	37	4	234	
No	0	23	23	47	83	11	25	2	214	0.0068
Not informed	5	172	104	204	427	33	74	18	1,037	
Total	5	217	139	279	625	60	136	24	1,485	
Feeling of a healthy mouth										
Yes	0	29	23	56	174	26	48	4	360	
No	0	70	44	99	216	23	55	6	513	0.0117
Not informed	5	118	72	124	235	11	33	14	612	
Total	5	217	139	279	625	60	136	24	1,485	

Table 4. Numerical and percentage distribution of pregnant women according to the frequency of tooth brushing and dental floss use, during the period from 1998 to 2022. Araçatuba-SP, 2025.

Variables	n	%
Daily frequency of tooth brushing		
Once a day	92	6.20
Twice or more times a day	1,307	88.01
Rarely	20	1.35
Not informed	66	4.44
Total	1,485	100.00
Frequency of dental floss use		
Never	145	9.76
Rarely	730	49.16
Once a day	267	17.98
Twice or more times a day	278	18.72
Not informed	65	4.38
Total	1,485	100.00

Different education levels are widely recognized as a useful indicator in health-related analyses and are associated with the influence of education on health outcomes. Individuals with higher education levels demonstrate better adherence to disease prevention and health promotion measures and more frequently modify unhealthy habits and lifestyles [14]. Health literacy is related to individuals' abilities to understand aspects of self-care and healthcare system navigation to make informed decisions [15]. Patients with adequate health literacy exhibit greater confidence in self-care and have higher rates of readmission compared to those with inadequate literacy [16].

Pregnant women with low education levels reported poorer oral conditions and dissatisfaction with the appearance of their mouth, gums, and teeth. This finding highlights social conditions as interfering factors in health status, and even among individuals with low education, health needs are perceived [17]. The fact that oral health perception is closely related to the patient's self-image does not necessarily correspond to clinical presentation [18]. In this context, the influence of oral health perception on seeking dental care is emphasized. It is important that the demand for dental services is not limited to curative and/or emergency procedures, but also includes preventive methods aimed at maintaining a healthy oral condition. Health services should pay attention to individuals with lower education levels, as they are more likely to have limitations regarding health literacy [19]. Although health literacy and education level are distinct measures, initiatives that promote formal education can contribute to reducing the prevalence of inadequate health literacy [20].

Young mothers tend to be more open to adopting healthy habits and may be more easily influenced and motivated to participate in oral health education programs [10]. The results of this study showed that younger pregnant women consider self-care measures as the primary way to prevent oral health problems, whereas those over 27 years old tend to delegate responsibility for their oral health solely to the dentist or associate self-care measures with professional treatment.

It has been reported that with aging, individuals tend to perceive oral diseases as less significant, understanding that their health is deteriorating and thus prioritizing general health problems over oral health issues [21]. The greater attribution of responsibility for oral health quality to the dentist among older pregnant women may also reflect the curative-focused dental practices experienced in the past, when dental care centered on curative procedures. Currently, oral health has become more accessible and has advanced significantly, with a stronger emphasis on prevention.

Regarding the main complaint, it was found that most pregnant women who consider self-care measures as the primary way to prevent oral problems seek dental care for routine or preventive procedures. Studies indicate that individuals with a high perception of self-efficacy are more likely to engage in preventive care, have better health status, recover more quickly and effectively from illnesses, and seek treatment earlier [22].

It is important to emphasize that individuals with low levels of health literacy may lack the necessary skills to understand and apply health information, recognize the need for early treatment, and navigate often complex healthcare systems [23]. People's actions are frequently guided by personal misconceptions about their dental needs [8]. Therefore, educational actions in primary care are of great value for achieving satisfactory levels of understanding regarding the factors influencing the health-disease process. Such actions can lead to significant behavioral changes, as poorly informed individuals tend to use dental services only when their oral condition has already worsened, with a higher likelihood of undergoing tooth extractions [24].

The reduction of dental plaque, also referred to as dental biofilm, represents the main component in the prevention and control of periodontal diseases [8]. Therefore, oral hygiene is frequently investigated in studies related to oral health. The habit of tooth brushing is almost always reported in survey-based research, largely due to the widespread dissemination of information through mass media such as radio, television, and the internet. Although tooth brushing is a common habit among most pregnant women, the use of dental floss remains limited, as observed in this study.

The association between dental plaque and gingival disease has been well established since the classical studies of Löe and Silness in 1963 [25,26]. Thus, inadequate plaque control may exacerbate gingival inflammation [26,27], particularly due to the physiological changes of pregnancy, especially hormonal alterations. In animal models, periodontal disease has been shown to cause preterm birth and low birth weight [28]. In humans, periodontal disease may be aggravated during pregnancy and may lead to adverse outcomes for the newborn [29]. Some studies suggest that pregnant women with periodontitis are more than twice as likely to give birth to low-birth-weight infants [30], although strong evidence on this association is still lacking.

CONCLUSION

Educational level influences health literacy, decision-making, and self-perception of oral health. Pregnant women with higher education levels consider self-care as the main strategy to prevent oral problems and seek dental services for preventive procedures. These women also tend to assume greater responsibility for their own health, meaning they do not delegate their health status solely to professionals. In contrast, those with lower education levels report poorer oral conditions and greater dissatisfaction with the health and aesthetics of their teeth and gums. Pregnant women who sought dental treatment also demonstrated a sense of responsibility for their oral health.

It is important to highlight a limitation regarding the response option "both," which may refer to both self-care measures and visits to the dentist. The choice of "both" implies a shared responsibility, indicating that the pregnant woman sees herself as co-responsible a perspective that is also considered positive.

Conflict of interest: The authors declare that there are no conflicts of interest.

Data availability: The research data are available in the body of the document.

Collaborators

MBR Calsavara, data curation, data analysis, investigation, methodology, writing – original draft, writing – review & editing. TA Saliba, supervision, writing – original draft. LBM Custódio, data analysis, writing – original draft. FY Chiba, data analysis, writing – original draft. SAS Moimaz, data curation, data analysis, investigation, methodology, project administration, supervision, writing – original draft.

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