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BETWEEN SOCIAL CONTEXT AND ORAL CARE: SOCIAL DETERMINANTS OF HEALTH AND SELF-PERCEPTION OF ORAL HEALTH IN PREGNANT WOMEN ATTENDING AT PRIMARY CARE

ENTRE O CONTEXTO SOCIAL E O CUIDADO ORAL: DETERMINANTES SOCIAIS DA SAÚDE E AUTOPERCEPÇÃO DA SAÚDE BUCAL EM GESTANTES ATENDIDAS NA ATENÇÃO PRIMÁRIA

ENTRE EL CONTEXTO SOCIAL Y EL CUIDADO BUCAL: DETERMINANTES SOCIALES DE LA SALUD Y AUTOPERCEPCIÓN DE LA SALUD BUCAL EN MUJERES EMBARAZADAS QUE ACUDEN A ATENCIÓN PRIMARIA

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ABSTRACT

Social Determinants of Health (SDH), along with self-perception related to knowledge, attitude, and practice (KAP), and oral health condition, may influence the health of pregnant women and their babies. This study aimed to analyze associations between SDH, oral care practices, self-perception of KAP, and clinical oral health conditions in pregnant women attending at primary care. This cross-sectional, analytical, observational study with a quantitative approach was conducted among pregnant women receiving prenatal care in Primary Health Care Units in Acarape, Ceará, Brazil, from September to December 2023. After informed consent, participants completed the structured KAP questionnaire on oral health care (adapted and validated Household Survey instrument). Data were analyzed descriptively and inferentially. Among the 54 participants, 70.37% were aged 30 years or younger, 79.63% had a family income of one minimum wage or less, 98.15% reported using toothpaste, and 61.11% didin't use dental floss. Regarding self-perception, 62.96%, 75.93%, and 74.07% demonstrated adequate perceptions of knowledge, attitude, and practice, respectively. Pregnancy was significantly associated with adequate self-perceived oral health knowledge alongside poorer self-rated oral health condition (p=0.043), as well as with dental floss non-use (p=0.002). Floss non-use was further associated with adequate self-perceived attitude (p=0.020), whereas inadequate attitude perception correlated with toothpick use (p=0.042). Adequate self-perceived practice was significantly linked to tongue cleaning (p<0.001). In conclusion, SDH are linked to social vulnerability and influence oral health practices among pregnant women. Furthermore, discrepancies exist between self-perception of KAP and actual clinical oral health conditions, indicating the need for targeted educational and preventive strategies.

KEYWORDS: *Social Determinants of Health. Knowledge, Attitudes and Practice in Health. Oral health. Nursing. Pregnant women.*

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RESUMO
Os Determinantes Sociais da Saúde (DSS), juntamente com a autopercepção relacionada ao conhecimento, atitude e prática (CAP) e à condição de saúde bucal, podem influenciar a saúde de gestantes e seus bebês. Este estudo teve como objetivo analisar as associações entre DSS, práticas de higiene bucal, autopercepção de CAP e condições clínicas de saúde bucal em gestantes atendidas na atenção primária. Este estudo transversal, analítico e observacional, com abordagem quantitativa, foi conduzido com gestantes em acompanhamento pré-natal em Unidades Básicas de Saúde (UBS) de Acarape, Ceará, Brasil, de setembro a dezembro de 2023. Após o consentimento livre e esclarecido, as participantes responderam ao questionário estruturado de CAP sobre saúde bucal (instrumento adaptado e validado do Inquérito Domiciliar). Os dados foram analisados descritiva e inferencialmente. Das 54 participantes, 70,37% tinham 30 anos ou menos, 79,63% possuíam renda familiar igual ou inferior a um salário-mínimo, 98,15% relataram usar pasta de dente e 61,11% não utilizavam fio dental. Em relação à autopercepção, 62,96%, 75,93% e 74,07% demonstraram percepções adequadas de conhecimento, atitude e prática, respectivamente. A gravidez foi significativamente associada à autopercepção adequada de conhecimento sobre saúde bucal, juntamente com uma pior autoavaliação da condição de saúde bucal (p=0,043), bem como com a não utilização de fio dental (p=0,002). A não utilização de fio dental também foi associada à autopercepção adequada de atitude (p=0,020), enquanto a percepção de atitude inadequada correlacionou-se com o uso de palito de dente (p=0,042). A autopercepção adequada de prática esteve significativamente relacionada à limpeza da língua (p<0,001). Em conclusão, os determinantes sociais da saúde estão ligados à vulnerabilidade social e influenciam as práticas de saúde bucal entre gestantes. Além disso, existem discrepâncias entre a autopercepção de conhecimento, atitude e prática e as condições clínicas reais de saúde bucal, indicando a necessidade de estratégias educacionais e preventivas direcionadas.

PALAVRAS-CHAVE: Determinantes Sociais da Saúde. Conhecimentos, Atitudes e Prática em Saúde. Saúde bucal. Enfermagem. Gestante.

RESUMEN
Los determinantes sociales de la salud (DSS), junto con la autopercepción relacionada con el conocimiento, la actitud y la práctica (CAP), y condición de salud bucal, pueden influir en la salud de las mujeres embarazadas y sus bebés. Este estudio tuvo como objetivo analizar las asociaciones entre los DSS, las prácticas de cuidado bucal, la autopercepción de CAP y las condiciones clínicas de salud bucal en mujeres embarazadas que asistían a atención primaria. Este estudio transversal, analítico y observacional con un enfoque cuantitativo se realizó entre mujeres embarazadas que recibían atención prenatal en Unidades de Atención Primaria de Salud en Acarape, Ceará, Brasil, de septiembre a diciembre de 2023. Después del consentimiento informado, las participantes completaron el cuestionario estructurado CAP sobre cuidado de la salud bucal (instrumento de encuesta de hogares adaptado y validado). Los datos se analizaron de forma descriptiva e inferencial. Entre las 54 participantes, el 70,37% tenía 30 años o menos, el 79,63% tenía un ingreso familiar de un salario mínimo o menos, el 98,15% informó usar pasta de dientes y el 61,11% no usaba hilo dental. En cuanto a la autopercepción, el 62,96%, el 75,93% y el 74,07% demostraron percepciones adecuadas de conocimiento, actitud y práctica, respectivamente. El embarazo se asoció significativamente con un conocimiento autopercibido adecuado sobre salud bucal, junto con un peor condición de salud bucal autoevaluado (p=0,043), así como con la falta de uso de hilo dental (p=0,002). La falta de uso de hilo dental se asoció además con una actitud autopercibida adecuada (p=0,020), mientras que la percepción de actitud inadecuada se correlacionó con el uso de palillos dentales (p=0,042). La práctica autopercibida adecuada se relacionó significativamente con la limpieza de la lengua (p<0,001). En conclusión, los determinantes sociales de la salud están vinculados a la vulnerabilidad social e influyen en las prácticas de salud bucal entre las mujeres embarazadas. Además, existen discrepancias entre la autopercepción de conocimientos, actitudes y prácticas y las condiciones clínicas reales de salud bucal, lo que indica la necesidad de estrategias educativas y preventivas específicas.

***PALABRAS CLAVE**: Determinantes Sociales de la Salud. Conocimientos, Actitudes y Prácticas en Salud. Salud bucal. Enfermería. Mujeres Embarazadas.*

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1. INTRODUCTION

Pregnancy represents a critical period in a woman's life cycle, characterized by physiological, metabolic, and immunological changes that support fetal development while also influencing maternal health outcomes (Garcia; Neto; Vidal, 2020; Cunha; Eroles; Resende, 2020). These transformations extend across physical, emotional, psychological, and social dimensions, potentially affecting both maternal and neonatal health. Such changes may increase susceptibility to oral diseases, including caries, gingivitis, and periodontal disease.

When combined with unfavorable socioeconomic and environmental conditions, these factors may contribute to adverse outcomes such as preterm birth, low birth weight, and perinatal mortality (Barton *et al.*, 2024; Simoncic *et al.*, 2022). In this context, the Social Determinants of Health (SDH) play a central role in shaping health conditions and inequalities

The SDH framework has been increasingly incorporated into oral health research and practice, offering a comprehensive perspective on how social, economic, and environmental factors influence health outcomes (Henzel *et al.*, 2021; Foratori-Junior; Pereira, 2021). According to the Dahlgren and Whitehead model (1991), these determinants operate across multiple layers, including individual characteristics, health-related behaviors, social and community networks, living and working conditions, and broader socioeconomic, cultural, and environmental contexts.

Oral diseases share these same structural determinants — income, education, employment, and housing — which disproportionately affect economically disadvantaged populations, including pregnant women in low- and middle-income countries (Barbieri *et al.*, 2018). In Brazil, evidence confirms that social indicators such as income, literacy, and urban infrastructure are significantly associated with pregnant women's access to dental care at primary health centers, reinforcing the need to consider SDH when planning oral health interventions (Reche *et al.*, 2026).

In the field of maternal oral health, this social gradient becomes particularly evident in the utilization of prenatal dental services. Adherence to prenatal dental care is recognized as a fundamental component of comprehensive prenatal assistance (Brasil, 2022); however, despite its importance, the utilization of dental services during pregnancy remains limited in Brazil. A national study revealed that prenatal dental coverage increased substantially following the implementation of the 'Prevent Brazil' federal policy — rising from 15% in 2018 to 69% in 2023 — but access remained most restricted in the North and Northeast regions, which present the lowest socioeconomic profiles (Schuch *et al.*, 2024). This pattern underscores that expanding service infrastructure alone is insufficient without simultaneously addressing the social determinants that shape women's capacity and willingness to seek care.

Barriers to adherence are multifactorial and include socioeconomic inequalities, fear, misinformation, and limited access to services (Frey-Furtado *et al.*, 2025). A systematic review identified

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cost, oral health illiteracy, and misconceptions about the safety of dental treatment during pregnancy as the predominant obstacles to care-seeking worldwide (Frey-Furtado *et al.*, 2025).

Additionally, pregnant women's knowledge, attitudes, and practices (KAP), as well as their self-perception of oral health, play a significant role in health-seeking behaviors (Tenenbaum; Azogui-Levy, 2023). Studies show that low risk perception, inadequate exposure to oral health education, cultural myths, and fear of dental treatment further reduce the likelihood that women seek preventive or therapeutic dental care during pregnancy (Phoosuwan; Bunnatee; Lundberg, 2024).

Self-perception of oral health emerges as a strategic element for planning health promotion actions, as it reflects the intersection of clinical conditions, cultural beliefs, and lived experiences that shape preventive practices. International evidence increasingly reinforces this point, particularly among vulnerable populations. Studies conducted in Latin America demonstrate strong associations between self-perception of oral health, socioeconomic status, and oral health behaviors (Corchuelo-Ojeda; Pérez; Casas-Arcila, 2022; Velosa-Porras; Malagón, 2024).

In Brazil, a cross-sectional study with 711 pregnant and postpartum women found that positive self-perception was associated with dental visits during pregnancy and access to oral health information, highlighting the mediating role of self-perception in care-seeking patterns (Mameluque *et al.*, 2024). Similar findings have been reported in Southeast Asia and Sub-Saharan Africa, where cultural beliefs and structural inequalities influence oral health literacy and practices — indicating that self-perception operates as a context-sensitive, socially embedded construct rather than a purely individual attribute (Phoosuwan *et al.*, 2024; Williams *et al.*, 2025). Taken together, this growing body of evidence from the Global South suggests that understanding self-perception is essential not only for explaining oral health disparities but also for designing culturally appropriate and equity-oriented interventions.

Within prenatal care, nurses play a key role in health education, early identification of oral health problems, and referral to dental services (Meira *et al.*, 2026). As frontline professionals in primary health care, nurses are ideally positioned to deliver oral health counseling, conduct basic oral screening, and promote the integration of dental care into routine prenatal follow-up — particularly in underserved communities where access to dentists may be limited (Al Agili; Khalaf, 2023). By addressing women's knowledge gaps, correcting misconceptions, and reinforcing the importance of oral health to pregnancy outcomes, nurses can directly influence KAP and self-perception, thereby contributing to health promotion strategies that extend beyond the clinical encounter.

Despite the growing recognition of these multidimensional factors, evidence integrating SDH, KAP, clinical oral health conditions, and self-perception in pregnant women attending primary care in middle-income countries remains limited. Most existing studies assess these dimensions independently or focus on single barriers, leaving critical gaps in understanding how structural and individual factors interact to shape oral health in this population. Therefore, this study aimed to analyze associations

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between SDH, oral care practices, self-perception of KAP, and clinical oral health conditions in pregnant women attending primary care.

2. METHODS

This is an observational, analytical, cross-sectional study with a quantitative approach, conducted from September to December 2023. The research was conducted with pregnant women attending prenatal consultations at three Primary Health Care Units (PHCUs) located in the municipality of Acarape, Ceará.

A non-probabilistic convenience sample was used, consisting of 54 pregnant women who attended at least one prenatal consultation during any trimester of pregnancy within the study period. The adoption of a convenience sample was due to logistical and operational constraints inherent to data collection in primary care settings. Although no formal sample size calculation was performed, this study is exploratory in nature, and its findings should be interpreted with caution, particularly regarding external validity and generalizability.

Inclusion criteria comprised pregnant women receiving prenatal care at the selected PHCUs. Exclusion criteria included pregnant women presenting cognitive, intellectual, or physical conditions that could compromise their ability to understand or respond to the data collection instrument. In such cases, this condition was identified by the research team, with support from healthcare professionals when necessary.

Initially, pregnant women in the waiting room for prenatal appointments were approached to have the project explained. Upon acceptance of their participation, the Informed Consent Form (ICF) was then applied. For pregnant women under 18 years of age, the Informed Assent Form (IAF) was adopted after obtaining consent from their parents or guardians.

Immediately afterwards, participants were asked to complete a structured instrument based on the Household Survey of Knowledge, Attitudes, and Practices (KAP) related to oral health among pregnant women (Nogueira, 2024). This contained objective and subjective questions related to the social determinants of health (SDH), pregnancy and prenatal care characteristics, oral health knowledge, attitudes, and practices and self-perception of oral health. For this study, only data related to the SDH (age, marital status, education, income, social assistance, and employment status), oral cavity care practices, and self-perception of knowledge, attitude, and practice regarding clinical health conditions were presented.

The KAP instrument used in this study underwent a rigorous process of adaptation and validation to ensure content adequacy, clarity, and cultural relevance.

Initially, the instrument was adapted from a previously developed questionnaire structured around four domains (Felipe, 2023): (1) social determinants of health, (2) pregnancy and prenatal care,

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(3) COVID-19-related aspects, and (4) oral health. For this study, the COVID-19 domain was excluded due to lack of relevance, and the remaining domains were revised and expanded.

The adaptation process occurred in three stages:

(1) consultation with the original instrument's author to identify practical limitations and improvement opportunities;

(2) an integrative literature review conducted across multiple databases (including PubMed, LILACS, BDENF, Scopus, and Web of Science) to support evidence-based modifications;

(3) preliminary restructuring of the instrument, including the addition and refinement of items.

Content validity was ensured through expert evaluation (judges), who assessed the instrument in terms of relevance, clarity, and comprehensiveness.

Subsequently, **semantic validation** was conducted through a focus group with 10 pregnant women receiving prenatal care in the same municipality. This stage aimed to evaluate item comprehension, language clarity, and cultural appropriateness. During the focus group, each item was read aloud, and participants were asked to identify unclear terms and suggest alternative wording. The session lasted approximately 90 minutes, was audio-recorded, transcribed, and systematically analyzed. Based on participant feedback, the final version of the instrument was refined.

The final KAP instrument included domains addressing:

- Social determinants of health;
- Pregnancy and prenatal care characteristics;
- Oral health knowledge, attitudes, and practices;
- Self-perception of oral health.

This multi-step validation process strengthens the instrument's content validity and ensures its applicability to the target population. However, it is important to note that formal psychometric analyses (e.g., internal consistency measures) were not performed, representing a methodological limitation.

The data obtained were organized in Excel for Windows, version 2016, and analyzed using Epi Info software, version 7.2.1.0. Descriptive analysis was performed, obtaining relative and absolute frequencies. To assess the relationship between categorical variables, the Chi-square test and Fisher's exact test were applied. A p-value < 0.05 was adopted.

Given the small sample size and non-probabilistic sampling design, inferential analyses should be interpreted cautiously, and findings should be considered exploratory rather than confirmatory

The project was submitted for review by the Research Ethics Committee of the University of International Integration of Afro-Brazilian Lusophony (Unilab), as per opinion no. 6.270.023. The autonomy of the subjects, non-maleficence, and beneficence of the research, as stipulated in CNS Resolution 466/12, were guaranteed.

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3. RESULTS

The study included 54 pregnant women, of whom 70.37% (n = 38) were 30 years old or younger, 90.74% (n = 49) lived with a partner, and 53.70% (n = 29) had up to 12 years of formal education, with the latter being particularly prevalent among participants enrolled in public educational institutions. Regarding income, 79.63% (n = 43) of the pregnant women reported having a family income equal to or less than one minimum wage, with 75.93% (n = 41) supplementing this income through the Bolsa Família program. Regarding occupation, 79.63% (n = 43) of the participants reported being unemployed. Among those who were employed, 18.18% (n = 2) were farmers, the same number as domestic workers.

Regarding oral care practices, 87.04% (n = 47) of pregnant women reported having had their last dental appointment within the past six months. Regarding oral hygiene methods, 98.15% (n = 53) of those surveyed used toothpaste, while 64.81% (n = 35), 61.11% (n = 33), and 77.78% (n = 42) did not use toothpicks, dental floss, or mouthwash, respectively. Regarding brushing frequency, 55.56% (n = 30) of participants brushed their teeth at least three times a day. Regarding tongue cleaning, 81.48% (n = 44) of pregnant women reported doing it every day.

Statistical analysis revealed significant associations between socioeconomic variables and specific oral hygiene behaviors. Pregnant women with less than 12 years of education were significantly less likely to use dental floss compared to those with higher educational attainment (p = 0.034). Similarly, a family income of one minimum wage or less was significantly associated with non-use of dental floss (p = 0.025). No other socioeconomic variables showed statistically significant associations with the evaluated oral health practices (Table 1).

Table 1. Association between the Social Determinants of Health and Oral Health Care Practices of Pregnant Women. Acarape – Ceará, Brazil, 2023

Variables	Oral health care practices													
	Last dental appointment		Brushing frequency		Use of toothpaste		Using a toothpick		Use of dental floss		Use of mouthwash		Tongue hygiene	
	<6	≥6	<3	≥3	Y	N	Y	N	Y	N	Y	N	Y	N
Age range														
≤30 years	32	06	16	22	38	00	10	28	14	24	11	27	32	06
>30 years	15	01	07	08	15	01	09	07	07	09	01	15	12	04
Marital status														
With partner	42	07	21	27	48	01	18	31	20	29	10	39	40	09
Without a partner	05	00	02	03	05	00	01	04	01	04	02	03	04	01
Education														
<12 years	25	04	15	13	28	01	12	17	07	22*	05	24	22	07
≥12 years	22	03	08	17	25	00	07	18	14	11	07	18	22	03

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Family income	38	05	18	24	42	01	18	25	13	30*	09	34	34	09
≤MW	09	02	05	06	11	00	01	10	08	03	03	08	10	01
>MW	08	03	08	03	11	00	03	08	04	07	01	10	09	02
Occupation														
Yes	39	04	15	27	42	01	16	27	17	26	11	32	35	08
No														

Note. Minimum wage (MW); Yes (Y) and No (N) columns represent the adherence to the specific oral health practice *P<0.05 - Chi-square test; One participant was toothless.

Regarding self-perceived oral health knowledge, attitudes, and practices, 62.96% (n = 34) reported adequate knowledge, 75.93% (n = 41) reported adequate attitudes, and 74.07% (n = 40) reported adequate practices. These proportions were statistically significant for knowledge and practices (p < 0.001 for both), but not for attitudes (p = 0.586). Conversely, 61.11% (n = 33) perceived their clinical oral health conditions as fair, poor, or very poor (p = 0.003) (Table 2)

Table 2. Self-perception regarding knowledge, attitude, practice, and clinical oral health conditions of pregnant women. Acarape – Ceará, Brazil, 2023

	Frequencies			
Variables	Absolute n	Relative %	CI 95%	P value*
Self-perception of knowledge about oral health				
Adequate	34	62.96	48.74-75.71	<0.001
Inadequate	20	37.04	24.29-51.26	
Self-perception of attitude towards oral health				
Adequate	41	75.93	62.36-86.51	0.586
Inadequate	13	24.07	13.49-37.64	
Self-perception of oral health-related practices				
Adequate	40	74.07	60.35-85.04	<0.001
Inadequate	14	25.93	14.96-39.65	
Self-perception of clinical oral health conditions				
Good/Very good	21	38.89	25.92-53.12	0.003
Average/Bad/Very bad	33	61.11	46.88-74.08	

*Note.*Confidence interval (CI); *P<0.05 - Chi-square test.

Associations between self-perception and oral health behaviors/clinical conditions were further examined. Adequate self-perceived knowledge was significantly associated with perceiving one's

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clinical oral health as fair/poor/very poor (p = 0.043) and with non-use of dental floss (p = 0.002). Adequate self-perceived attitude was significantly associated with non-use of dental floss (p = 0.020) and, among participants with inadequate attitude perception, with the use of toothpicks (p = 0.042). Finally, adequate self-perceived practices were strongly associated with daily tongue cleaning (p < 0.001) (Table 3).

Table 3. Association between self-perception regarding knowledge, attitude, practice, and clinical oral health conditions. Acarape – Ceará, Brazil, 2023

Variable	Self-perception of knowledge		Self-perception of attitude		Self-perception of the practice	
	Adequate n (%)	Inadequate n (%)	Adequate n (%)	Inadequate n (%)	Adequate n (%)	Inadequate n (%)
Self-perception of clinical oral health conditions						
Good/Very good	17 (50.00)	17 (50.00)	19 (46.34)	22 (53.66)	17 (42.00)	23 (57.50)
Average/Bad/ Very bad	04* (20.00)	16 (80.00)	02 (15.38)	11 (84.62)	04 (28.57)	10 (71.43)
Last dental appointment						
<6 months	31 (65.96)	16 (34.04)	36 (76.60)	11 (23.40)	35 (74.47)	12 (25.53)
≥6 months to 1 year/Never been	03 (43.86)	04 (57.14)	05 (71.43)	02 (28.57)	05 (71.43)	02 (28.57)
Brushing frequency						
<3 times a day	14 (60.09)	09 (39.01)	16 (69.60)	07 (30.10)	15 (65.20)	08 (34.80)
≥3 times a day	19 (63.30)	11 (36.07)	24 (80.00)	06 (20.00)	25 (83.30)	05 (16.07)
Use of toothpaste						
Yes	33 (97.06)	01 (2.94)	40 (97.56)	01 (2.44)	40 (100.0)	00 (0.00)
No	20 (100.0)	00 (00.0)	13 (100.0)	00 (0.00)	13 (92.86)	01 (7.14)
Use of dental floss						
Yes	19 (55.88)	15 (44.12)	20 (48.78)	21 (51.22)	17 (42.50)	23 (57.50)
No	02* (10.00)	18 (90.00)	01* (7.69)	12 (92.31)	04 (28.57)	10 (71.43)
Using a toothpick						
Yes	12 (35.29)	22 (64.71)	11 (26.83)	30* (73.17)	15 (37.50)	25 (62.50)
No	07	13	08	05	04	10

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Use of mouthwash	(35.00)	(65.00)	(61.54)	(38.46)	(28.57)	(71.43)
Yes	07 (20.59)	27 (79.41)	09 (21.95)	32 (78.05)	09 (22.50)	31 (77.50)
No	05 (25.00)	15 (75.00)	03 (23.08)	10 (76.92)	03 (21.43)	11 (78.57)
Tongue hygiene						
Yes	29 (85.29)	05 (14.71)	34 (82.93)	07 (17.07)	38* (95.00)	02 (05.00)
No	15 (75.00)	05 (25.00)	10 (76.92)	03 (23.08)	06 (81.48)	08 (57.14)

Note. *P<0.05 - Chi-square or Fisher's Exact Test; One participant was toothless.

4. DISCUSSION

Self-perceived health is a multidimensional construct that reflects not only clinical conditions but also psychosocial and contextual influences, being widely used in population-based studies as a complementary indicator of health status (Sousa *et al.*, 2020; Shaaban; Martins; Peleteiro, 2022). In oral health, self-perception is particularly relevant, as it captures subjective dimensions that may not be fully identified through clinical assessment alone. In parallel, the framework of Social Determinants of Health (SDH) provides a robust basis for understanding how structural inequalities shape health behaviors and outcomes (Farooq; Batool, 2023; Jia, 2024). In this context, the present study analyzed associations between SDH, oral hygiene practices, and self-perception of knowledge, attitudes, and practices (KAP) among pregnant women in primary care.

The findings indicate that the participants were predominantly situated in contexts of social vulnerability, characterized by low levels of education and family income. These factors have been consistently associated with oral health inequalities and reduced access to preventive care (Peres *et al.*, 2019). In the present study, such characteristics were associated with oral hygiene practices, particularly the reduced use of dental floss. However, it is important to emphasize that, due to the cross-sectional design, these relationships should be interpreted as associations rather than causal effects.

The presence of pregnant adolescents and the high proportion of women with partners represent relevant contextual characteristics. While younger maternal age has been associated with increased vulnerability in previous studies (Neal; Channon; Chintsanya, 2018), and social support may contribute positively to maternal health (Yaya; Anjorin; Adedini, 2021), these variables were not directly measured in terms of their effects and therefore should not be interpreted as determinants within this study.

Regarding oral hygiene practices, the results reveal a pattern of partial adherence to recommended behaviors. Although frequent tooth brushing and recent dental visits were widely reported, the low use of dental floss and mouthwash suggests gaps in comprehensive oral care. This

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SCIENTIFIC JOURNAL - RECIMA21 ISSN 2675-6218

pattern has also been observed in other populations, where basic practices are more consistently adopted than complementary ones (Mahmud *et al.*, 2025; Soofi *et al.*, 2020).

The reduced use of dental floss is particularly noteworthy given its established role in controlling interdental biofilm and preventing periodontal disease (Hasan; Ali; Ali, 2026). Its association with lower socioeconomic status in this study may reflect barriers related to access, cost, or health literacy. Nevertheless, oral health behaviors are complex and influenced by multiple factors—including cultural norms and individual preferences—which were not fully explored here.

An important contribution of this study is the identification of discrepancies between self-perceived KAP and reported oral health behaviors. A substantial proportion of participants reported adequate knowledge and attitudes, despite not consistently adopting recommended practices such as flossing. This inconsistency suggests that self-perception may not reliably reflect effective health behavior.

This gap between perception and practice should not be interpreted solely as a lack of knowledge. Instead, it may reflect difficulties in translating knowledge into action, influenced by structural constraints, habitual behaviors, or competing priorities. Additionally, self-reported measures are subject to social desirability bias, which may lead to overestimation of positive behaviors.

The coexistence of relatively positive self-perceptions of KAP with negative self-perceptions of oral health status further highlights the complexity of these relationships. This apparent contradiction suggests that individuals may recognize oral health problems while simultaneously perceiving their behaviors as adequate, or may have limited understanding of what constitutes effective oral health care.

In relation to specific practices, the high frequency of tongue cleaning reported contrasts with the low use of dental floss, suggesting selective adherence to behaviors perceived as more immediately beneficial or socially relevant. This reinforces the notion that health behaviors are influenced not only by knowledge but also by perceived necessity and personal beliefs.

From a public health perspective, these findings suggest that educational strategies should move beyond information transmission and address behavioral and contextual barriers to oral health. Prenatal care represents a strategic opportunity for integrating oral health promotion into routine care. In this context, multidisciplinary approaches—particularly involving nurses—can contribute to health education, early identification of oral health needs, and referral to dental services (Oliveira *et al.*, 2023).

Finally, this study has limitations that must be acknowledged. The use of a non-probabilistic sample and the relatively small sample size limit the generalizability of the findings. Additionally, the cross-sectional design precludes causal inference and does not allow assessment of temporal relationships. Self-reported data are also subject to recall and reporting biases.

Despite these limitations, the study provides relevant insights into the associations between social determinants, oral health practices, and self-perception among pregnant women in primary care. In

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particular, it highlights the need for approaches that consider both subjective perceptions and structural conditions in promoting oral health.

5. CONCLUSION

The findings of this study suggest that pregnant women receiving primary care in the investigated context are predominantly exposed to social vulnerability, characterized by low levels of education and family income. These factors were associated with oral hygiene practices, particularly reduced adherence to dental floss use.

In addition, an inconsistency was observed between self-perceived knowledge, attitudes, and practices and reported oral health behaviors, as well as between these perceptions and the self-assessment of oral health status. These results indicate that self-perception may not fully correspond to actual practices or conditions.

Given the cross-sectional nature of the study, these findings should be interpreted as associations rather than causal relationships. Therefore, caution is required when extrapolating the results to other populations or contexts.

Within these limits, the study points to the potential relevance of incorporating oral health education into prenatal care, especially in socially vulnerable settings. Such strategies may contribute to improving awareness and supporting behavioral changes related to oral health practices. However, further studies—particularly with longitudinal designs—are needed to better understand these relationships and to evaluate the effectiveness of interventions.

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