Factors associated with positive self-perception of oral health in pregnant and postpartum women

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Abstract

Objectives: to evaluate the associated factors with positive self-perception of oral health in pregnant and postpartum women treated at a reference maternity hospital in the north of Minas Gerais, Brazil.

Methods: cross-sectional study with women assisted in an extension project. The sample consisted of women evaluated in the period from 2012 to 2022 who passedthe inclusion and exclusion criteria. The outcome variable was self-perception of oral health, which was dichotomized after the participants' response options. The analyses were performed using the SPSS 20.0 software.

Results: a total of 711 women participated. The positive self-perception of oral health was present in 50.2% of the sample. The associated factors were women without a partner (PR=1.07; CI95%=1.00-1.14; p=0.042), who went to the dentist during pregnancy (PR=1,12; CI95%=1.05-1.19; p<0.001), who brushed their teeth three times or more a day (PR=1.08; CI95%=1.01-1.15; p=0.028), with no dental caries (PR=1.10; CI95%=1.03-1.18; p=0.005) and who did not notice oral changes during the gestational period (RP=1.16; CI95%=1.09-1.24; p<0.001).

Conclusions: positive self-perception of oral health was associated with better oral hygiene habits and visits to the dentist during the gestational period.

Key words *Pregnant woman, Self concept, Oral health, Dental care, Dental caries*

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http://dx.doi.org/10.1590/1806-9304202400000191-en

Introduction

Pregnancy is a period characterized by several hormonal, physiological, psychological and physical alterations in women.[1] The oral cavity is also affected by these changes, mainly when a dental follow-up is not performed systematically and adequately.[1,2] One of the main alterations occurs due to defective hygiene, besides other factors caused by pregnancy itself, such as nausea, vomiting and a high-sucrose diet, which are factors that, when associated to each other, favor a propitious environment for dental caries and inflammatory and irritating processes in the gums.[2,3]

Historically, the oral health of pregnant women was considered a taboo, based on social beliefs that pregnant and lactating women could not have dental treatment.[2,3] However, surveys have shown that the lack of oral care may negatively affect pregnancy and represent risks during birth and on the health of the incoming newborn.[4] Given the above, several programs and public policies were created in an attempt to include such preventive and healing health practices for those women, aiming to improve quality of life, keep the integrity of care and demystifying dental care for this public.[2,5]

Several studies describe economic and social factors as variables that interfere significantly in conditions and the perception of oral health in the general population.[6-8] Schooling and family income are factors related to the acquisition of knowledge and the access to health services.[6,7] Self-perception, in turn, can be conceptualized as a subjective method of recognition of the individual for considering his/her health conditions and the need for treatment, and it is largely used for health public planning.[5,9]

Pregnant and puerperal women are considered vulnerable groups, important for prioritization of care.[6]In this perspective, this study aims to assess factors associated with positive self-perception of oral health in pregnant and puerperal women attended in a reference maternity hospital in the North of Minas Gerais (MG), Brazil.

Methods

Cross-sectional study, conducted within the extension project "Odontology for Pregnant Women", conducted with pregnant and puerperal women attended at the maternity of the University Hospital Clemente de Faria (HUCF – Portuguese acronym), in the municipality of Montes Claros (MG). Montes Claros is one of the main regional urban hubs of the North health region of MG, with a population estimate of more than 417,000 inhabitants, a reference for healthcare to the neighboring municipalities.[10] The extension project, since its institutionalization, attends women at the maternity with guidelines related to oral health and assistance in dental clinics of the university during pregnancy and puerperium, according to the demanded needs. In this study, the sample was built with women assessed in the period from 2012 to 2022.

The sample calculation was performed with the OpenEpi tool. A total of 221,583 women, who gave birth in the North health region of MG, was identified with the Live Birth Information System (SINASC – Portuguese acronym) on DATASUS. The statistical parameters adopted were: 50% prevalence of the event; 95% confidence interval; 5% margin of error and design effect correction (deff=2), obtaining a minimum sample of 384 women at the perinatal period.

The criteria for participating in the study was pregnant or puerperal women hospitalized in the maternity of the HUFC during the moment of visitation of academics of the extension program, of any age, although participants under 18 years of age had to be accompanied by a legal guardian. For inclusion in the studied sample, we used only women who could answer the survey's dependent variable (oral health self-perception). Women who did not present cognitive capability to answer the questions performed during the collection, who had impaired emotional status during the visitation due to their condition and did not want to participate because of this, and those who were approached more than one time in the selected period for this study (women hospitalized at the maternity more than once in the last ten years).

Data were collected from February 2012 to December 2022, with convenience sampling. The dependent variable was assessed with the following question: "How do you evaluate your current oral health status in the last year?", with the answer options: "terrible", "bad", "average", "good" and "excellent". Self-perception in oral health was dichotomized in positive (answer options "good" and "excellent") and negative ("terrible", "bad" and "average").

The independent variables of sample characterization were condition (pregnant or puerperal), age (quantitative answer, classified in up to 18 years, from 19 to 30 years and over 30 years), marital status (with partner and without partner), monthly income (up to 2 minimum wages and over 2 minimum wages, considering the minimum wage's value current in the year of data collection), pregnancy (primiparous or multiparous) and risk pregnancy (yes or no). The independent variables related to habits and oral health conditions were: Went to the dentist during pregnancy (yes or no), brushing habits (dichotomized in less than three times and three times or more), use of floss (yes or no), toothache during pregnancy (yes or

no), perception of any oral alteration during pregnancy (yes or no), dental caries (present or absent), periodontal condition (satisfactory or unsatisfactory) and dental absence (yes or no).

The researchers were undergraduate students of the fourth year of Dentistry, previously trained. The oral examination was performed in the same environment where data collection occurred, in the beds of the maternity of the HUCF, using wooden spatula and gauze, with the support of flashlights or daylight. For dental caries detection, we considered cavitated carious lesions and/or opaque rough whitish stains. The periodontal condition was measured by the presence of dental calculus, apparent gingivitis and/or mobility on at least one site of the sextants. Dental absence was measured with the loss of a dental element, not considering third molars or premolars that were surgically extracted due to dentistry indications. The women assessed were referred for dental treatment in the institution's School Clinic, in which caries and periodontal diseases were defined in the clinical exam with the support of the responsible professor.

Data obtained with the research were launched in the Statistical Package for the Social Sciences for Windows, Inc., USA (SPSS) software, version 20.0. Descriptive frequency analyses and percentage of variables were performed. The Prevalence Ratio (PR) and confidence intervals (CI95%) for the dependent variable were measured by Poisson regression with robust variance. For multiple analysis, we included the variables associated with up to 20% significance level ($p \leq 0.20$), being considered for the final model the variables that presented association to the 5% level ($p \leq 0.05$).

The study was approved by the Research Ethics Committee of the State University of Montes Claros (Unimontes – Portuguese acronym) under opinion number 6.092.292 (CAAE # 67915223.9.0000.5146),on May 31, 2023.

Results

A total of 711 women with mean age of 27.8 years (standard deviation of 6.8 years) participated in the study and over half of the sample (54.6%) resided in Montes Claros, followed by lower percentages of municipalities that composed the North Health Region of the state of Minas Gerais (Bocaiúva, Coração de Jesus, Taiobeiras, São Francisco, Salinas and other municipalities). Most participants were puerperal (71.0%), without partners (65.4%), with maximum income of up to two minimum wages (63.6%). The sociodemographic and pregnancy related characteristics, as well as those related to habits and condition of oral health, are shown in Table 1.

The result of the bivariate analysis is demonstrated in Table 2. The variables selected for multiple analysis were: years of schooling (p=0,052), marital status (p=0.018), pregnancy (p<0.001), went to dentist during pregnancy (p=0.005), brushing habits (p=0.004), use of floss (p=0.010), toothache during pregnancy (p<0.001), dental cavity (p<0.001), periodontal condition (p=0.084), dental absence (p=0.151) and perceived oral alterations during pregnancy (p<0.001). Observing that the variables years of schooling, pregnancy, toothache during pregnancy, periodontal condition and dental absence did not present statistical significance.

In the final model, were associated with positive self-perception of oral health: women without partner (PR=1.07; CI95% =1100-1.14; p=0.042), those who went to the dentist during pregnancy (PR=1.12; CI95%=1.5-1.19; p<0.001), who brush teeth three times or more per day (PR=1.08; CI95%=1.01-1.15; p=0.028), with absence of dental cavity (PR=1.10; CI95%=1.03-1.18; p=0.005) and that not perceived oral alterations during pregnancy (PR=1.16; CI95%=1.09-1.24; p<0.001) (Table 3).

Discussion

It was evident, in this study, that half of participating women considered positively their oral health, allowing identifying which are the factors associated with this outcome. Self-perception researches in pregnant and puerperal women are extremely necessary, since although their assessment of health conditions and/or need for treatment is subjective, they will serve as subside for the implementation of preventive strategies that promote healthcare.[5,11,12]

Less than half of women in the research classified negatively their oral health conditions (49.8%). This finding diverge from that of other national studies that assessed pregnant women from the municipality of Santa Maria, in Rio Grande do Sul,[13] attended by Family Health Units from Piauí[14] and from São Paulo[5], and from international surveys conducted in different populations from Australia[15,16] and India[17]; and is in line with results obtained in a cohort carried out in Pelotas,[18] with high-risk pregnant women from a city in Paraná,[19]in a municipality in the state of Rondônia[20] and in studies carried out in Colombia,[11] Saudi Arabia[21] and with different social classes in Canada.[12] The estimate of similarity of the findings should be considered carefully, since the divergences found may be the result of cultural and sociodemographic particularities of the countries in which each survey was conducted.

Intimately related to the self-perception variable, the non-identification of oral alterations during pregnancy was one of the factors associated with positive self-perception,

Table 1

Characterization of women attended in the study maternity, according to sociodemographic variables, pregnancy characteristics, habits and perception of oral health. Montes Claros, MG/Brazil, 2012-2022 (N=711).

Variables	N	%
Sociodemographic characteristics		
Condition		
Pregnant	206	29.0
Puerperal	505	71.0
Age (years)		
Up to 18	60	8.5
19 - 30	395	55.8
> 30	253	35.7
Years of schooling		
< 12	224	31.9
≥ 12	479	68.1
Marital status		
With partner	254	34.6
Without partner	464	65.4
Monthly income (minimum wages)		
Up to 2	454	83.6
>2	89	16.4
Pregnancy characteristics		
Pregnancy		
Primiparous	275	38.8
Multiparous	434	61.2
Risk pregnant		
Yes	369	52.3
No	337	47.7
Habits and oral hygiene conditions		
Went to the dentist during pregnancy		
Yes	416	58.7
No	293	41.3
Brushing habits (x per day)		
<3	254	35.9
≥3	454	64.1
Use of dental floss		
Yes	504	71.1
No	205	28.9
Toothache during pregnancy		
Yes	167	23.6
No	542	76.4
Dental caries		
Present	192	49.7
Absent	194	50.3
Periodontal condition		
Unsatisfactory	128	33.2
Satisfactory	258	66.8
Dental Absence		
Yes	187	49.0
No	195	51.0

Perception of oral health		
Noticed oral alterations during pregnancy		
Yes	259	36.4
No	452	63.6
Oral health perception		
Positive	357	50.2
Negative	354	49.8

which was reassured in the final model, with 36.4% of the sample demonstrating any change. These findings are similar to those of 40% of 150 pregnant women assessed in Paraná[19] and a little more than 29% of 358 pregnant women hospitalized in Swiss[22] and Colombia.[11] In the references researched, we identified studies that presented high values of perception of oral alterations in pregnant women, mainly the presence of toothache and problems in the gums, besides, these studies observed that the association of the identification of these alterations is related to unsatisfactory oral hygiene habits, the absence of access or search to routine dentistry services and fear of dental assistance during pregnancy.[20,22,23]

The search for dental assistance during pregnancy is one of the main paradigms identified in surveys related to oral health in this population. In the present study, women that went to the dentist during pregnancy presented 1.24 times more chance of having positive oral health self-perception, similar to studies that obtained association between women who received dental assistance during pregnancyand reported good condition of oral health[12,17] and correlation with good habits of oral hygiene.[23] Less than half of women participating in this study reported having attended the dentist during pregnancy (41.3%), and as well as in other variables, the behavior of search for dental consultations presented varied percentages.[3,11,13,20,22,23,26,27]

It is necessary to demystify the search for dental assistance during pregnancy not only for the execution of timely restorative treatments or related to urgent care. Health education in this period is essential, and in a randomized clinical trial[28] one of the results evidenced that pregnant women who received individualized oral health guidelines presented better oral health and hygiene habits than those from the control group and those pregnant women who did not participate in the project idealized for health intervention. There is a positive effect in individualized oral education, in which the behaviors and beliefs of the patient are essential for the awareness and empowerment of healthcare.[19,29]

Dental caries was detected in 49.7% of pregnant women assessed. Although less than half of women who participated in the exam had the disease, it is perceptible the high prevalence of caries in this population. A prospective study carried out in Feira de Santana, state of Bahia, dental caries was present in 32.5% of participants,[3] a result inferior than those found in two cities of Rio Grande do Sul, where dental caries was prevalent in 62.6%[13] and 88.2%[18] of the population. Scarce studies tend to assess the presence of the disease in pregnant women, since gingivitis and bleeding gums are the most commonly investigated, mainly due to the association of periodontal disease with the birth of children with low weight.[3] Even though it not presented association in this study, it is interesting to highlight that there is a study in which bad self-perception of oral health was associated with the presence of periodontal disease, which was identified in 50% of the sample of assessed pregnant women.[14]

The prevention of oral diseases is due to good hygiene habits, visualized in 61.4% who reported to brush their teeth at least three times per day or more and in 71.1% of participants who used floss daily, higher values than those from studies carried out in Swiss[22] and India[27] In the literature, it is known that oral health habits are diverse, with articles that report results of participants that did not brush their teeth for over one day[15] and that did not demonstrate daily frequency of tooth brushing,[16] and this last factor is determinant in the negative self-perception of oral health within women participating in the clinical trial.

In the final model, it was noted that presenting positive oral health self-perception is associated with women without partners, however studies that presented findings related to the presence of partners and oral health self-perception were not identified in the literature. In a survey that assessed the negative self-perception of the general health in women in climacteric period,[30] found an association similar to our study, even though the assessed health self-perception was different, it is important to reinforce that the behavior of this variable may influence, similarly, the outcome variables of both surveys. There is no scientific explanation of how the presence of a partner may affect the oral health of pregnant women, thus, it is worth emphasizing the need for surveys that may identify the behavior of these variables.

As one of the limitations, it is worth highlighting that oral health perception may be influenced by other determinants such as barriers to access to health services and health education, which was not assessed in this study. Furthermore, cross-sectional studies cannot be used to assess causality in the factor studied, besides, the

Table 2

Bivariate analysis between positive oral health self-perception and independent variables in women attended in the study maternity. Montes Claros, MG/Brazil, 2012-2022 (n=711).

Variables	Oral health self-perception				PR crude (CI95%)	*p*
	Positive		Negative			
	n	%	n	%		
Condition						
Pregnant	99	48.1	107	51.9	1	
Puerperal	258	51.1	247	48.9	1.06 (0.90-1.25)	0.508
Age (years)						
Up to 18	33	55.0	27	45.0	1	
19 - 30	194	49.1	201	50.9	0.89	0.374
> 30	127	50.2	126	49.8	0.91	0.490
Years of schooling						
< 12	100	44.6	124	55.4	1	
≥ 12	252	52.6	227	47.4	1.17 (0.99-1.39)	0.052
Marital status						
With partner	138	56.3	107	43.7	1	
Without partner	217	46.8	247	53.2	1.20 (1.04-1.39)	0.018
Monthly income (minimum wages)						
Up to 2	219	48.2	235	51.8	1	
>2	45	50.6	44	49.4	1.04 (0.83-1.31)	0.729
Pregnancy						
Primiparous	160	58.2	115	41.8	1.28 (1.11-1.48)	0.001
Multiparous	197	45.4	237	54.6	1	
Risk Pregnancy						
Yes	182	49.3	187	50.7	1.04 (0.89-1.20)	0.599
No	173	51.3	164	48.7	1	
Went to the dentist during pregnancy						
Yes	228	54.8	188	45.2	1.24 (1.06-1.45)	0.005
No	129	44.0	164	56.0	1	
Brushing habits (x per day)						
<3	109	42.9	145	57.1	1	
≥3	247	54.4	207	45.6	1.25 (1.08-1.45)	0.004
Use of dental floss						
Yes	269	53.4	235	46.6	1.23 (1.06-1.43)	0.010
No	87	42.4	118	57.6	1	
Toothache during pregnancy						
Yes	53	31.7	114	68.3	1	
No	302	55.7	240	44.3	1.75 (1.38-2.22)	<0.001
Dental caries						
Present	66	34.4	126	65.6	1	
Absent	111	57.2	83	42.8	1.66 (1.32-2.09)	<0.001
Periodontal condition						
Unsatisfactory	51	39.8	77	60.2	1	
Satisfactory	127	49.2	131	50.8	1.23 (0.96-1.58)	0.084
Dental absence						
No	96	49.2	99	50.8	1.18 (0.94-1.47)	0.151
Yes	78	41.7	109	58.3	1	
Noticed oral alterations during pregnancy						
No	267	59.1	185	40.9	1.70 (1.41-2.04)	<0.001
Yes	90	34.7	169	65.3	1	

Table 3

Multiple analysis between positive self-perception of oral health and the independent variables in women attended in the study maternity. Montes Claros, MG/Brazil, 2012-2022 (n=711).

Variables	PR Adjusted (CI95%)	*p*
Marital status		
With partner	1	
Without partner	1.07 (1.00-1.14)	0.042
Went to the dentist during pregnancy		
Yes	1.12 (1.05-1.19)	<0.001
No	1	
Brushing habits (x per day)		
<3	1	
≥3	1.08 (1.01-1.15)	0.018
Use of dental floss		
Yes	1.07 (1.00-1.15)	0.028
No	1	
Dental caries		
Present	1	
Absent	1.10 (1.03-1.18)	0.005
Perceived oral alterations during pregnancy		
Yes	1	
No	1.16 (1.09-1.24)	<0.001

memory and assessment biases concerning the method of investigation and the tool applied. Besides the method of assessment of the "periodontal condition" variable did not have the intention of diagnosing the disease, since other methods should be applied with this goal, nonetheless, it is important to mention that the criteria adopted in training and collection of researchers were rigorously standardized so that the measurement of each variable was accurate.

A prevalence of 50.2% of positive self-perception of oral health in women was detected in the present survey. Not having a partner, going to the dentist during pregnancy, brushing teeth three times or more per day, absence of dental caries and not perceiving oral alterations during pregnancy were the associated factors found. The authors highlight the importance of the development of actions that promote oral health to pregnant women, of qualification of dental surgeons in the reception and dental assistance, besides the divulgation of the importance of oral health in the pregnancy period in an accessible manner to the target-group.

Author's contribution

Mameluque S: conceptualization, critical review of the intellectual content and writing of the manuscript. Mameluque F: conceptualization, critical review of the intellectual content. Ferreira PHC: critical review of the intellectual content. Rodrigues AIS and Trezena S: conceptualization, tabulation, data analysis and interpretation, writing of the manuscript. Soares WD: data interpretation, critical review of the intellectual content. Mendes DC: conceptualization, data analysis and interpretation, critical review of the intellectual content. All authors approve the final version of the article and declare no conflicts of interest.

References

1. Marla V, Srii R, Roy DK, Ajmera H. The importance of oral health during pregnancy: a review. Medical Express. 2018; 5: 1-6.

2. Trindade SC, Barreto JAR, Barreto Neto LO, Passos-Soares JS, Vianna MIP, Azevedo ACO, *et al*. Condição bucal de gestantes e puérperas no município de Feira de Santana, em três diferentes períodos entre os anos de 2005 e 2015. Epidemiol Serv Saúde. 2018; 27 (3): e2017273.

3. Jeelani S, Khader KA, Rangdhol RV, Dany A, Paulose S. Coalition of attitude and practice behaviors among dental practitioners regard pregnant patient's oral health and pregnant patient's perception toward oral health in and around Pondicherry. J Pharm Bioallied Sci. 2015; 7 (Suppl. 2): 509-12.

4. Rocha JS, Arima L, Chibinski AC, Werneck RI, Moysés SJ, Baldani MH. Barriers and facilitators to dental care during pregnancy: a systematic review and meta-syntheses of qualitative studies. Cad Saúde Pública. 2018; 34 (8): e00130817.

5. Silva SRC, Rosell FL, Júnior AV. Percepção das condições de saúde bucal por gestantes atendidas em uma unidade de saúde no município de Araraquara, São Paulo, Brasil. Rev Bras Saúde Mater Infant. 2006; 6 (4): 405-10.

6. Barbieri W, Peres SV, Perreira CB, Neto JP, Souza MLR, Cortellazzi KL. Fatores sociodemográficos associados ao grau de conhecimento em saúde bucal de gestantes. Einstein. 2018; 16 (1): 1-8.

7. Rocha NB, Garbin CAS, Garbin AJI, Saliba O, Moimaz SAS. Longitudinal study into the detemining factors of dental caries in children aged 4: socio-behavioral aspects and oral health of pregnant woman. Rev Gauch Odontol. 2017; 65 (1): 52-61.

8. Carneiro JA, Gomes CAD, Durães W, Jesus DR, Chaves KLL, Lima CA, *et al*. Autopercepção negativa da saúde: prevalência e fatores associados entre idosos assistidos em centro de referência. Ciênc Saúde Colet. 2020; 25 (3): 909-18.

9. Haikal DS, Roberto LL, Martins AMEBL, Paula AMB, Ferreira EF. Validade da autopercepção da presença de cárie dentária como teste diagnóstico e fatores associados entre adultos. Cad Saúde Pública. 2017; 33 (8): e00053716.

10. Secretaria de Estado de Saúde de Minas Gerais. Plano Diretor de Regionalização da Saúde de Minas Gerais (PDR/MG). Belo Horizonte (MG): 2020. [acesso em 2023 Jan 17]. Disponível em: https://www.saude.mg.gov.br/images/1_noticias/10_2020/2_out-nov-dez/28-10_PLANO-DIRETOR-DE-REGIONALIZACAO-DA-SAUDE-DE-MINAS-GERAIS_PDRMG.pdf

11. Corchuelo-Ojeda J, Pérez GJG, Casas-Arcila A. Factors Associated With Self-Perception in Oral Health of Pregnant Women. Health Educ Behav. 2022 Jun; 49 (3): 516-24.

12. Jessani A, Laronde D, Mathu-Muju K, Brondani MA. Self-Perceived Oral Health and Use of Dental Services by Pregnant Women in Surrey, British Columbia. J Can Dent Assoc. 2016; 82: 1-11.

13. Lesina LV, Knorst J, Bolsson GB, Maroneze MC, Zamberlam C, Santos BZ. Nível socioeconômico, saúde bucal e fatores associados no suporte social de gestantes: estudo transversal. Saúde Pesq. 2020; 13 (4): 799-808.

14. Sousa LLA, Cagnani A, Barros AMS, Zanin L, Flório FM. Pregnant women's oral health: knowledge, practices and their relationship with periodontal disease. Rev Gaúch Odontol. 2016; 64(2): 154-63.

15. Jamielson LM, Hedges J, Xu J, Kapellas K, Leane C, Haag DG, *et al*. Cohort profile: South Australian Aboriginal Birth Cohort (SAABC) - a prospective longitudinal birth cohort. BMJ Open. 2021; 11 (2): e043559.

16. Jamielson LM, Parker EJ, Roberts-Thomson KF, Lawrence HP, Broughton J. Self-efficacy and self-rated oral health among pregnant aboriginal Australian women. BMC Oral Health. 2014; 14: 29.

17. Baskaradoss JK, Geevarghese A. Utilization of dental services among low and middle income pregnant, post-partum and six-month post-partum women. BMC Oral Healh. 2020; 20 (1): 120.

18. Cademartori MG, Demarco FF, Silveira MF, Barros FC, Corrêa MB. Dental caries and depression in pregnant women: The role of oral health self-perception as mediator. Oral Dis. 2022 Sep; 28 (6): 1733-40.

19. Galvan J, Bordin D, Fadel CB, Alves FBT. Fatores relacionados à orientação de busca pelo atendimento odontológico na gestação de alto risco. Rev Bras Saude Mater Infant. 2021; 21 (4): 1155-65.

20. Nascimento RP, Rockenbach VBM. Pré-natal odontológico: percepção das gestantes atendidas no município de Vilhena – RO. Rev Ciênc Plural. 2023; 9 (3): e31317.

21. Albasry Z, Alhaddad B, Benrashed MA, Al-Ansari A, Nazir MA. A Cross-Sectional Analysis of Dental Care Utilization Among Pregnant Women in Saudi Arabia. Open Access Maced J Med Sci. 2019; 7 (23): 4131-6.

22. Lazaridi I, Zekeridou A, Schaub L, Prudente D, Razban M, Giannopoulou C. A Survey on Oral Health Knowledge, Attitudes and Practices of Pregnant Women Attending Four General Health Hospitals in Switzerland. Oral Health Prev Dent. 2022; 20 (1): 33-40.

23. Guimarães TGR, Ghersel ELA, Ghersel H. Perception of pregnant women in relation to oral health and dental needs. Int J Health Sci. 2023; 3 (3): 1-9.

24. Hans M, Hans VM, Kahlon N, Ramavat PKR, Gupta U, Das A. Oral health awareness and practices in pregnant females: A hospital-based observational study. J Indian Soc Periodontol. 2019; 23 (3): 264-8.

25. Kobylinska A, Sochacki-Wójcicka N, Gozdowski D, Olczak-Kowalczyk D. Self-Reported Oral Health Knowledge and Practices During Pregnancy and Their Social Determinants in Poland. Oral Health Prev Dent. 2020; 18 (1): 287-94.

26. Pacheco KTS, Sakugawa KO, Martinelli KG, Esposti CDD, Filho ACP, Garbin CAS, *et al*. Saúde bucal e qualidade de vida de gestantes: a influência de fatores sociais e demográficos. Ciênc Saúde Colet. 2020; 25 (6): 2315-24.

27. Payal S, Kumar GS, Sumitra Y, Sandhya J, Deshraj J, Shivam K, *et al*. Oral health of pregnant females in central India: Knowledge, awareness, and present status. J Edu Health Promot. 2017; 6: 1-6.

28. Saffari M, Sanaeinasab H, Mobini M, Sepandi M, Rashidi-Jahan H, Sehlo MG, *et al*. Effect of a health-education program using motivational interviewing on oral health behavior and self-efficacy in pregnant women: a randomized controlled trial. Eur J Oral Sci. 2020; 128 (4): 308-16.

29. Ghaffari M, Rakhshanderou S, Safari-Moradabadi A, Torabi S. Oral and dental healthcare during pregnancy: evaluating a theory-driven intervention. Oral Dis. 2018; 24 (8): 1606-14.

30. Silva VH, Rocha JSB, Caldeira AP. Fatores associados à autopercepção negativa de saúde em mulheres climatéricas. Ciênc Saúde Colet. 2018; 23 (5): 1611-20.

Received on June 14, 2023
Final version presented on July 24, 2024
Approved on July 25, 2024

Associated Editor: Alex Sandro Souza