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SOCIOECONOMIC LEVEL, ORAL HEALTH, AND ASSOCIATED FACTORS IN THE SOCIAL SUPPORT OF PREGNANT WOMEN: A CROSS-SECTIONAL STUDY

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ABSTRACT: To evaluate the association between socioeconomic and oral health-related variables in the social support perceived by pregnant women. This cross-sectional study included a sample obtained from clusters of pregnant women who attended public health services in southern Brazil. The pregnant women answered questionnaires about demographic, socioeconomic, and oral health characteristics. Social support was assessed using the Medical Outcomes Study scale. Clinical variables included untreated dental caries and gingival bleeding. Multilevel Poisson regression analysis was used to assess the influence of predictors on social support. The sample consisted of 254 pregnant women. Those with poorer self-perceived oral health, extensive levels of gingival bleeding, and lower socioeconomic status, presented poor social support. Socioeconomic factors and factors related to oral health had an impact on the social support perceived by pregnant women.

KEY WORDS: Observational study; Oral health; Pregnant women; Social support.

NÍVEL SOCIOECONÔMICO, SAÚDE BUCAL E FATORES ASSOCIADOS NO SUPORTE SOCIAL DE GESTANTES: ESTUDO TRANSVERSAL

RESUMO: Avaliar a associação entre variáveis socioeconômicas e relacionadas a saúde bucal no suporte social percebido por gestantes. Esse estudo transversal incluiu uma amostra obtida em conglomerados de gestantes atendidas no serviço público de saúde no sul do Brasil. As gestantes responderam questionários acerca de características demográficas, socioeconômicas e relacionadas à saúde bucal. O suporte social foi avaliado através da escala *Medical Outcomes Study*. As variáveis clínicas incluíram cárie dentária não tratada e sangramento gengival. Análise de Regressão de Poisson em multinível foram utilizados para avaliar a influência dos preditores no suporte social. A amostra foi composta por 254 gestantes. Gestantes com pior autopercepção de saúde bucal, níveis extensivos de sangramento gengival e com menor nível socioeconômico apresentaram um pior suporte socautor ial. Fatores socioeconômicos e relacionados à saúde bucal exerceram impacto no suporte social percebido por gestantes.

PALAVRAS-CHAVE: Apoio social; Estudo observacional; Gestantes; Saúde bucal.

INTRODUCTION

Pregnancy is a challenging physiological and emotional experience for it involves physical changes and hormonal fluctuations that occur in all its stages[1]. The levels of the hormones estrogen and progesterone are higher during this period of life, especially in the first trimester of pregnancy[2]. Additionally, the absence of adequate oral hygiene can make pregnant women even more susceptible to various oral diseases such as caries, gingivitis, and periodontitis at this stage. Therefore, this group must be prioritized to receive general and dental health care services[2-4].

The concept of health in the current context is not limited to organic issues, but is fundamentally related to the characteristics of each individual in their socio-cultural context and to the meanings they attribute to their process of living and health-disease process[5], including oral diseases. At the same time, the new concept of oral health is multidimensional and involves physiological, psychological, and social aspects of the individual's life[6]. In this context, it is also essential to consider social well-being related to the family and the environment in which pregnant women live. In summary, it is necessary to have an interdisciplinary view of the individuals in all its aspects, considering the context in which they live and their values.

Therefore, the study of social capital has become important because it involves several aspects such as social support, which is a system of formal and informal relationships. In this system, individuals receive emotional, material, or information help to deal with situations that generate affective tension[7]. The realization of prenatal care should provide the construction of relationships that provide this support in the case of pregnant women[8]. Social support can be considered an important outcome and can be influenced by several demographic, socioeconomic, clinical, and psychosocial factors. However, social support and clinical variables related to it have not yet been effectively explored, especially in pregnant women.

Several studies have focused on the identification of individual behavioral risk factors for oral diseases[9,10], without considering the social, economic, environmental, and psychosocial aspects underlying the distribution of pathologies. The different factors associated with the levels of social support perceived by pregnant women have not yet been explored in the literature, especially in regions of southern Brazil. In this context, studying these factors in a population of pregnant women is essential, since they cannot only affect the life of the pregnant woman, but also the life of the baby. In addition, understanding the role of socioeconomic and clinical determinants related to this important psychosocial outcome enables the development of public health strategies related to specific determinants of health inequities. In this context, the objective of the study was to evaluate the association between socioeconomic variables and those related to oral health with social support perceived by pregnant women. The study hypothesis was that pregnant women with the worst oral conditions and socioeconomic status would have poor social support.

METHODOLOGY

This study was performed according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines[11].

STUDY DESIGN AND SAMPLE

This observational, analytical, cross-sectional study evaluated 254 pregnant women receiving care from public health services in the city of Santa Maria, Southern Brazil. Santa Maria has 273,489 inhabitants, with an estimated 2,389 pregnant women per year according to data provided by the municipal health secretary of the city of Santa Maria. This study is part of an epidemiological survey that evaluated other oral health outcomes in pregnant women who attended basic units of the city.

The selection of the sample was carried out through a conglomerate sampling procedure considering the eight administrative regions of the city. The primary sample unit was all public health centers in the municipality that had prenatal coverage (n = 30), of which 18 points were selected randomly, considering the number of pregnant women in each region. The second phase consisted of all pregnant women who attended the selected health centers.

As there is no data on the levels of social support in this population, a value of 50% was used according to the indication in the literature[12]. Considering a sampling error of 4% with a 95% confidence level, a test power set at 80%, and adding 30% for eventual losses, a sample of 185 pregnant women was obtained as the minimum value considered. However, due to the change in the precision of the design effect estimates, the sample size was multiplied by 1.2, thus obtaining a total required value of 241 pregnant women. As for the inclusion criteria, only pregnant women registered in the Basic Health Units (UBS) and Family Health Strategy (ESF) of the municipality were considered.

DATA COLLECTION

Data collection was carried out from January 2017 to December 2018, including the clinical examination of pregnant women and the application of structured questionnaires. Four teams composed of an examiner, an annotator, and an interviewer were present during all interviews and exams carried out during data collection. The interviewers were previously trained through theoretical instructions and practical training.

Data regarding clinical conditions were obtained from clinical examinations performed at the basic health unit. Pregnant women were individually examined using clinical chairs with natural and artificial light. The examination was performed using a ballpoint probe and clinical mirror[13]. The training and calibration process of the four examiners to assess the decay, missing, and filed surfaces index (DMF-S) was carried out according to the methodology previously described by the World Health Organization (WHO) in its basic manual for epidemiological surveys[13]. The training consisted of theoretical evaluation of clinical parameters, discussion of each category and possible disagreements from clinical images and through the evaluation of extracted teeth for reasons unrelated to the research, and concluded the moment a good level of agreement and understanding was achieved.

Intra-examiner reproducibility was assessed through the assessment of ten pregnant women, using duplicate exams with an interval of one week. Inter-examiner reproducibility was assessed by examining the same patients by the four examiners and checking for possible inconsistencies with the results obtained by the researcher, considering the gold standard (BZS - PhD in Pediatric Dentistry). Both calibrations were checked using Kappa statistics before and during the study.

VARIABLES

Social support, which is the outcome of this study, was assessed using a scale adapted from the Medical Outcomes Study (MOS)[14] and validated for the Portuguese language[15]. This scale measures an individual's perception of the degree of social support. The scale consists of 19 items and 5 dimensions related to support: emotional (4 items), material (4 items), information (4 items), affective (3 items), and social interaction (4 items). Each item presents five answer options on an ordinal scale: never (0), rarely (1), sometimes (2), almost always (3), and always (4). For the analysis of social support, the total and domain scores were calculated by adding the points of the answers. High scores denote a positive impact on social support. The pregnant women answered the questionnaire in a face-to-face interview conducted by previously trained interviewers.

The behavioral variables considered included questions related to the use of the dental service, frequency of toothbrushing, and harmful habits. Smoking during pregnancy was considered as yes (smoked at least one day during pregnancy) or no (never smoked during pregnancy). For analysis, the smoking habit was dichotomized as "yes" or "no". The frequency of use and services was assessed by the question "How often do you go to the dentist?", and it was later dichotomized in an irregular (0 and 1) or regular (2, 3, and 4) frequency. The frequency of toothbrushing was assessed through the number of times they brushed their teeth daily and dichotomized into >3 or <3 times a day.

The variables related to demographic and socioeconomic aspects were collected through a structured questionnaire, and included questions regarding age, skin color, education level, and household income. Age was collected in years and later categorized by tertiles as 20 years, 20 to 30 years, and >30 years. Skin

color was assessed based on criteria established by the Brazilian Institute of Geography and Statistics (IBGE) and subsequently categorized as white or nonwhite. Education level was collected in years of study and later dichotomized into <8 or> 8 years of formal education (incomplete elementary school). Household income was assessed at the Brazilian minimum wage (BMW- R$ 937) and categorized into tertiles for assessment: T1 (Lowest) < 1BMW; T2 (Medium) 1-2.5 BM; and T3 (highest) > 2.5 BMW.

Self-perceived oral health was measured through the question: "How do you evaluate your oral health?" with answer options as 0 = excellent; 1 = good; 2 = regular; 3 = bad; or 4 = terrible. Subsequently, the variable was divided into excellent/good (0 and 1) or regular/poor (2, 3, and 4). The clinical variables considered were dental caries and marginal gingival bleeding. The presence of dental caries was assessed using the DMF-S)[13] index and subsequently dichotomized considering the prevalence of untreated dental caries as "present" (corresponding 'D' component of the DMF-S index= other than 0) or "absent" (component D of the DMF index equal to zero). Marginal gingival bleeding was measured according to the Gingival Bleeding Index[13] and dichotomized into "extensive levels of gingival bleeding" (≥15% of sites) and "low levels or absence of gingival bleeding" (<15% of sites)[16].

STATISTICAL ANALYSIS

Data analysis was performed using STATA 14 (StataCorp. 2014. Stata Statistical Software: Release 14.1. College Station, TX, StataCorp LP). Descriptive analyses of the demographic, socioeconomic, behavioral, and oral health characteristics of pregnant women were performed. The average of the total scores on the MOS scale was considered the outcome of this study. The distribution of total mean scores and dimensions of the MOS scale according to the characteristics of the sample were also verified.

Multilevel Poisson regression models were used to assess the influence of the different characteristics of the sample on the mean of the social support scale (MOS). The multilevel structure of analysis considered pregnant women (level 1) nested in the 18 basic units (level 2). An unadjusted multilevel analysis was performed to verify the association between the different variables in the total scores and the different dimensions of the MOS scale. Variables with p <0.20 in the unadjusted analysis were considered for the multivariate models. The multilevel model used the fixed-effect scheme with a random intercept.

The statistical models were tested according to a hierarchical approach to determine the predictors of social support (Figure 1)[17]. For this approach, three models have been described. Model 1 ("null model"), which represents the unconditional model; model 2 included demographic and socioeconomic variables; and model 3 ("full model") was composed of Model 2 plus behavioral and oral health variables. In all models, the quality of the fit was measured using deviance (-2 log likelihood). The results are presented as rate ratio (RR) with respective 95% confidence intervals (95% CI).

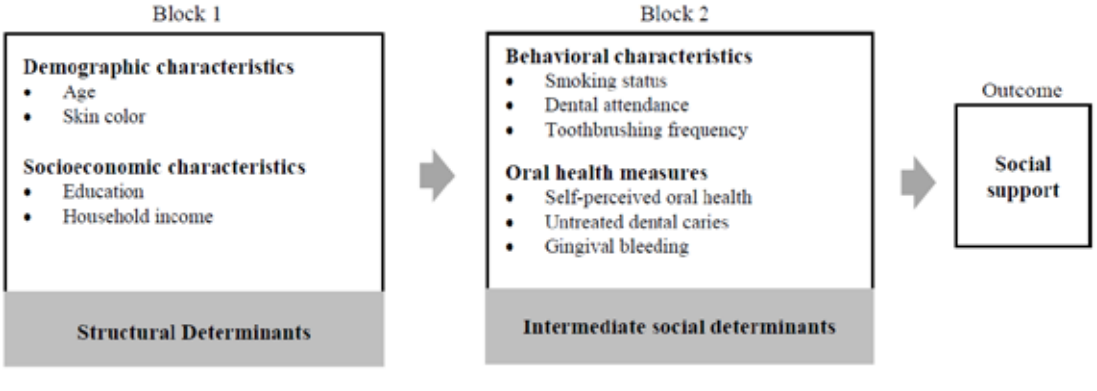

Figure 1. A theoretical model for different determinants of social support in pregnant women adapted from the World Health Organization (2010)[17].

ETHICAL CONSIDERATIONS

This study was approved by the Human Research Ethics Committee of a University in southern Brazil (protocol number 55197616.7.0000.5306). All participants signed an informed consent form.

RESULTS

A total of 254 pregnant women participated in this study. The mean age of the pregnant women was 25.42 (standard deviation [SD], 6.57) years, and the mean gestation time was 24.60 (SD 9.61) weeks. The inter- and intra-examiner agreements (Kappa values) for dental caries were 0.88 and 0.93, respectively. This reproducibility was maintained throughout the study.

Table 1 shows the sample distribution according to demographic, socioeconomic, behavioral, and oral health characteristics. Most of the pregnant women were between 20 and 30 years old (60.6%), had white skin color (56.7%), and had an education $\geq$ 8 years (77.3%). Regarding household income, approximately 4.8% of pregnant women fell into the lowest tertile (<1 BMW) and 75.7% in the middle tertile (1 to 2.5 BMW). Regarding behavioral characteristics, 12.5% reported smoking during pregnancy, approximately 69% of pregnant women did not have regular dental visits, and 72.3% reported toothbrushing at least three times a day. Regarding self-perceived oral health, 60.3% considered their oral health to be regular or poor. Considering the clinical conditions, most pregnant women had untreated caries (62.6%) and 46.4% had gingival bleeding in more than 15% of the sites.

The descriptive distribution of the total scores and the specific dimensions of the MOS scale are shown in Table 2. Regarding the overall score, the variation observed ranged from 8 to 76, and the mean was 54.48 (SD 15.16). The variation observed specifically for the emotional and information dimensions ranged from 0 to 16, as for the material and social interaction dimensions, the variation ranged from 2 to 16, whereas the affective dimension ranged from 0 to 12. Of the dimensions observed, social interaction was the one with the highest mean values [12.36 (SD 3.31)].

Table 3 shows the distribution of the total scores and specific dimensions of the MOS scale according to the characteristics of the sample. Considering the overall scores, the variables skin color, education, household income, toothbrushing frequency, self-perceived oral health, and gingival bleeding were associated with the means of social support ($p < 0.05$). Considering the emotional dimension, education and gingival bleeding were associated. In the material dimension, self-perceived oral health was associated, and in the information dimension, education, self-perceived oral health, and smoking ($p < 0.05$) were associated. No variable was related to the affective dimension. Regarding the dimension of social interaction, skin color, education, and toothbrushing frequency were associated ($p < 0.05$).

The adjusted multilevel analysis of the independent variables with the total scores of the MOS scale is shown in Table 4. In model 2, the variables education and income were associated with the outcome. Pregnant women who had less education had lower averages in the MOS, that is, lower social support (RR 0.88; 95% CI 0.84-0.92). Regarding income, pregnant women from the highest gradients reported greater social support. The behavioral and oral health-related variables were included in model 3, and the mean of the MOS was statistically lower in pregnant women who perceived their oral health as fair/poor (RR 0.95; 95% CI 0.92-0.99) and who had gingival bleeding in > 15% of sites (RR 0.93; 95% CI 0.89-0.97).

Table 1. Sample distribution according to demographic, socioeconomic, behavioral and oral health characteristics

(Continuation)

Variables	n	%
Demographic and socioeconomic characteristics		
Age		
< 20 years	49	19.1
20-30 years	165	60.6
> 30 years	52	20.3
Skin color		
White	145	56.7
No-white	111	43.3
Education		
≥ 8 years of formal education	198	77.3
< 8 years of formal education	58	22.7

(Conclusion)

Variables	n	%
Household income in BMW[c]		
Lowest (1st tercil)	12	4.8
Middle (2nd tercil)	190	75.7
Highest (3rd tercil)	49	19.5
Behavioral characteristics		
Smoking during pregnancy		
No	224	87.5
Yes	32	12.5
Dental attendance frequency		
Irregular	173	68.9
Regular	78	31.1
Toothbrushing frequency		
≥ 3 times per day	18	72.3
< 3 times per day	71	27.7
Oral health characteristics		
Self-perceived oral health		
Excellent / good	100	39.2
Fair / poor	155	60.3
Untreated dental caries		
No	93	37.4
Yes	156	62.6
Gingival bleeding		
< 15% of sites	133	53.6
≥ 15% of sites	115	46.4

Values less than 256 are due to missing data.
[a] BMW, Brazilian minimum wage.

Table 2. Descriptive distribution of total scores and specific dimensions of the MOS scale.

Dimensions	Number of items	Means scores MOS (SD)[b]	Possible range	Observed range
Emotional	4	10.99 (4.01)	0 – 16	0 – 16
Material	4	10.82 (3.63)	0 – 16	2 – 16
Information	4	10.75 (3.91)	0 – 16	0 – 16
Affective	3	9.89 (2.39)	0 – 12	0 – 12
Social interaction	4	12.36 (3.31)	0 – 16	2 – 16
MOS[a] (overall score)	**19**	**54.48 (15.16)**	**0 – 76**	**8 – 76**

[a]MOS, Medical Outcomes Study;
[b]SD, standard deviation.

Table 3. Distribution of overall scores and specific dimensions of the MOS scale according to the characteristics of the sample.

(Continuation)

Variables	Overall MOS	Emotional	Material	Information	Affective	Social interaction
	Mean (SD)[a]	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age						
< 20 years	53.3 (18.4)	11.1 (4.1)	11.5 (3.5)	10.9 (4.3)	9.6 (2.8)	11.5 (4.1)
20-30 years	54.7 (13.9)	11.0 (3.7)	10.7 (3.6)	10.8 (3.6)	9.9 (2.3)	11.5 (3.1)
> 30 years	54.9 (15.7)	10.8 (4.8)	10.8 (3.8)	10.4 (4.6)	10.3 (2.3)	11.8 (3.1)
Skin color						
White	55.9 (15.5)	11.4 (4.0)	10.9 (3.9)	11.0 (3.9)	10.2 (2.4)	12.8 (3.4)
No-white	52.6 (14.6)*	10.5 (3.9)	10.7 (3.22)	20.3 (3.9)	9.5 (2.3)	11.8 (3.3)*
Education						
≥ 8 years of formal education	55.9 (14.7)	11.3 (4.0)	11.0 (3.6)	11.1 (3.8)	10.1 (2.2)	12.7 (3.2)
< 8 years of formal education	49.8 (15.7)*	9.9 (3.8)*	10.3 (3.9)	9.7 (4.0)*	9.3 (2.9)	11.2 (3.6)*
Household income in BMW[c]						
Lowest (1st tercil)	51.2 (22.3)	10.2 (5.4)	11.4 (4.7)	9.8 (5.6)	9.8 (3.4)	11.8 (4.5)
Middle (2nd tercil)	54.4 (15.1)*	10.0 (4.0)	10.8 (3.6)	10.8 (3.8)	9.8 (2.4)	12.3 (3.3)
Highest (3rd tercil)	56.3 (13.2)*	11.2 (3.8)	10.9 (3.5)	11.1 (3.7)	10.3 (1.9)	12.9 (2.9)
Smoking during pregnancy						
No	54.7 (15.3)	11.1 (3.9)	10.8 (3.7)	10.9 (3.8)	9.9 (2.5)	12.3 (3.4)
Yes	53.2 (14.0)	10.2 (4.6)	10.8 (2.8)	9.6 (4.5)*	10.1 (1.9)	12.5 (3.0)
Dental attendance frequency						
Irregular	54.5 (15.1)	11.0 (4.0)	10.8 (3.7)	10.8 (3.8)	9.9 (2.5)	12.4 (3.4)
Regular	55.2 (14.4)	10.9 (3.9)	11.0 (3.5)	10.8 (4.0)	10.1 (1.9)	12.4 (2.9)
Toothbrushing frequency						
≥ 3 times per day	55.7 (14.4)	11.2 (4.0)	10.8 (3.7)	11.0 (3.9)	10.1 (2.2)	12.7 (3.0)
< 3 times per day	51.7 (16.7)*	10.6 (3.9)	10.9 (3.6)	10.2 (3.9)	9.3 (2.7)	11.5 (3.7)*

(Conclusion)

Variables	Overall MOS	Emotional	Material	Information	Affective	Social interaction
	Mean (SD)[a]	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Self-perceived oral health						
Excellent / good	57.2 (14.3)	11.5 (3.8)	11.5 (3.5)	11.3 (3.8)	10.3 (2.1)	12.9 (3.0)
Fair / poor	52.9 (15.4)*	10.7 (4.0)	10.4 (3.6)*	10.4 (4.0)*	9.7 (2.5)	12.0 (3.4)
Untreated dental caries						
No	55.3 (14.0)	10.9 (3.9)	10.0 (3.4)	10.9 (3.8)	10.0 (2.0)	12.6 (3.1)
Yes	54.3 (15.4)	11.0 (4.1)	10.7 (3.8)	10.7 (4.0)	9.9 (2.5)	12.3 (3.3)
Gingival bleeding						
< 15% of sites	56.3 (13.8)	11.3 (4.0)	10.9 (3.6)	11.1 (3.8)	10.3 (1.9)	12.8 (3.0)
≥ 15% of sites	52.9 (15.9)*	10.6 (4.0)*	10.7 (3.8)	10.5 (3.9)	9.6 (2.6)	12.0 (3.4)

* Statistically significant ($p < 0.05$) compared to the reference category (Univariate Multilevel Poisson regression).
[a]SD, standard deviation

Table 4. Adjusted analysis of the independent variables with the overall MOS scores, determined using multilevel Poisson regression

(Continuation)

Variables	Model 1[a] RR[d] (95% CI)[e]	Model 2[b] RR (95% CI)	Model 3[c] RR (95% CI)
Fixed component			
Intercept	54.56 (52.06-57.20)	50.66 (45.74-56.10)	58.84 (52.67-65.74)
Demographic and socioeconomic characteristics			
Age			
< 20 years		1	1
20-30 years		0.98 (0.94-1.03)	0.96 (0.91-1.01)
> 30 years		1.01 (0.96-1.07)	1.00 (0.94-1.68)
Skin color			
White		1	1
No-white		0.97 (0.94-1.01)	0.97 (0.93-1.01)
Education			
≥ 8 years of formal education		1	1
< 8 years of formal education		0.88 (0.84-0.92)*	0.92 (0.88-0.96)
Household income in BMW[c]			
Lowest (1st tercil)		1	1
Middle (2nd tercil)		1.10 (1.01-1.20)*	1.02 (0.93-1.11)
Highest (3rd tercil)		1.16 (1.05-1.27)*	1.07 (0.97-1.18)
Behavioral characteristics			
Dental attendance frequency			
Irregular			1
Regular			1.00 (0.96-1.04)
Toothbrushing frequency			
≥ 3 times per day			1
< 3 times per day			0.97 (0.93-1.01)
Oral health characteristics			
Self-perceived oral health			
Excellent / good			1
Fair / poor			0.95 (0.92-0.99)*
Gingival bleeding			
< 15% of sites			1
≥ 15% of sites			0.93 (0.89-0.97)*
Random component			
Deviance = (-2 loglikelihood)	2677.39	2564.40	2317.07

*p-value <0.05;

[a] Model 1: null model, represents the unconditional model.

[b] Model 2: adjusted by demographic and socioeconomic variables.

[c] Model 3: full model, adjusted for demographic, socioeconomic, behavioral and oral health variables.

[d] RR, rate ratio;

[e] CI, confidence interval.

DISCUSSION

This study supports the hypothesis that factors related to the socioeconomic level and oral health, influence the social support perceived by pregnant women. The data showed that low levels of education and household income were associated with low social support. The results also suggest that poorer self-perceived oral health and extensive levels of gingival bleeding are related to lower levels of social support. There are few studies in the literature that evaluated the social support received by pregnant women[18,19]. In addition, the results of this study strengthen the idea of the importance of social epidemiology, which goes beyond the biomedical model of health, centered on the etiology, diagnosis, and treatment of diseases, without taking into account other aspects such as the physical and social environment in which individuals are included, and their quality of life and social support received[20]. It is necessary to go further and understand the influence of social aspects on health, to open paths for the construction of multi-professional and interdisciplinary health actions, which improve the lives of pregnant women, their children, and the population as a whole.

The worst self-perceived health in this study was related to lower means in the MOS scale, so that pregnant women who rated their oral health as regular or poor had lower levels of social support, which corroborates with previous studies in different populations[21,22]. Lamarca et al.[22], when evaluating 685 Brazilian pregnant women, also demonstrated that low individual social capital during pregnancy, considering social support and the level of social network, was associated with low self-perceived oral health[21]. Another study with 60 elderly Brazilians also demonstrated a directly proportional relationship between those who have a low self-perception of general health with the lowest level of social support. In this sense, social support has been reported as an important factor and fundamentally connected to maternal well-being during pregnancy[23]. The association between self-perceived oral health and social support can be explained by the psychological benefits arising from high levels of social support, which act as a protective factor to stress, which can benefit the general and oral health[21,24] of pregnant women and consequently, their babies.

In addition, considering characteristics related to oral health, this study found that pregnant women who had extensive levels of gingival bleeding were more likely to report low social support. These findings are in accordance with previous studies in another population, which reported an association between different social capital proxies and gingival bleeding[25,26]. A consistent explanation for this finding is that the lack of social support may be related to a poor oral health-related quality of life (OHRQoL), as seen in other studies[8,27]. Thus, it is possible that a poor oral health condition is associated with a poor OHRQoL, and consequently, it is related to lower levels of social capital[28], although this study did not measure the OHRQoL

Regarding socioeconomic characteristics, pregnant women who had less education and less household income had lower means in the MOS, that is low social support, in this research. Schooling and family income are considered a proxy for socioeconomic status, and it has been shown that low socioeconomic levels are related to several health risk factors[29] such as susceptibility to less access to dental services, even during pregnancy[29]. The lower access to dental services in turn, has been described as one of the ways that link the lowest social capital to the worst oral health rates[30]. In this sense, these relationships can explain the results between the lowest socioeconomic level and the lowest social support.

In this context, the importance of the engagement of health team professionals is also emphasized in order to refer pregnant women from prenatal care in the public health service to dental prenatal care. This would demystify beliefs and myths that dental care throughout pregnancy could cause harm to the health of the mother–baby binomial, and contributing to the expansion of the use of dental services by pregnant women. In addition, engagement and dialogue among the different health team professionals are essential in the search for better interventions in the health of individuals, which should be seen as a whole[31]. Their understanding of this process can direct health promotion actions, ensuring an improvement in the quality of life of pregnant women, women who have recently given birth, and naturally benefiting newborns[31], leading to excellent health practices. An additional strength of this study is the realization of a multilevel and

hierarchical analysis that took into account, the different levels of influence of the variables on social support. In addition, this study evaluated factors related to perceived social support, which is fundamental for the improvement of oral health promotion strategies in this population.

CONCLUSION

Pregnant women with poorer self-perceived oral health and extensive levels of gingival bleeding as well as less education and lower household income, had poor social support. Considering the positive impact of social support on the health of individuals, understanding the factors related to it is essential for the health team to improve strategies for promoting comprehensive health in pregnant women, and thus, improving the quality of life of this population and consequently, of their children.

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