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Indicators of prenatal care received by Family Health Strategy users in cities of the State of Paraíba

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ABSTRACT

Introduction: Prenatal care benefits maternal and neonatal health. **Objective:** To evaluate indicators of prenatal care of users from Family Health Strategy in cities of the State of Paraíba, Brazil, and to investigate differences according to the social context and the health team. **Methods:** Cross-sectional study based on the questionnaire application to 897 individuals. Multivariate logistic regression was performed to verify the association between social characteristics and type of health team with indicators of the prenatal care (time of beginning, number of consultations for gestational age at delivery, use of ferrous sulfate, vaccination against tetanus before or during the gestation), treated as dependent variables. **Results:** Among interviewees, 81.0% began prenatal care in the first quarter of pregnancy and 83.0% had at least six consultations. Ferrous sulfate use and tetanus immunization were reported by respectively 94.9% and 88.8% of the interviewed women. Participants living with a partner, with higher socioeconomic level, and not participating in the *Bolsa Família* Program were more likely to have adequate beginning time of prenatal care, number of consultations and supplementation with ferrous sulfate. Beginning of prenatal care in the first quarter and having at least six consultations were associated with low food insecurity, while maternal work outside the home, high social support, family functionality and attendance by teams from *Programa Mais Médicos* favored the prenatal beginning time. **Conclusion:** The study showed satisfactory indicators of prenatal care, influenced by the socioeconomic characteristics and the social support of the pregnant woman.

Keywords: prenatal care; primary health care; quality indicators, health care.

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INTRODUCTION

Women's health care in Brazil has been prioritized since 1984 through the *Programa de Assistência Integral à Saúde da Mulher*[1] and later, in 2000, with the institutionalization of the *Programa de Humanização no Pré-Natal e Nascimento* (PHPN)[2]. The PHPN recommends safe and humanized care for pregnant women, including at least six prenatal visits, tetanus vaccination, gestational risk classification, and access to laboratory tests[2]. In this direction, the Ministry of Health launched in 2011 the *Rede Cegonha*, recommending for the monitoring of the pregnant woman her link to the basic health unit with the completion of prenatal care[3].

The assistance to women and their demands related to pregnancy, delivery, and the puerperium in health services provides safety and reduces maternal and infant morbidity and mortality rates[4]. In turn, pregnant women with inadequate number of consultations and procedures suggest deficiencies in care that need solutions[5]. In this context, assessing health care during pregnancy makes it possible to verify the need to reorganize services and the needs of the population[6,7]. In Brazil, evaluations of prenatal care have pointed out deficiencies in the quality of access, both in relation to the time of onset and the number of consultations performed and the performance of basic procedures recommended, especially in vulnerable social groups[8].

Socioeconomic characteristics and those related to the social support of pregnant women are considered important factors in the quality of prenatal care. Furthermore, the conditions of welcoming, humanization, and comprehensiveness of care can result in differentials in the assistance[5,8,9]. In this sense, the *Programa Mais Médicos* (PMM), established in 2013, with investments in the provision of doctors and professional qualification and basic health units, is highlighted as a relevant intervention to reduce health inequities in the context of the Family Health Strategy/ *Estratégia de Saúde da Família* (ESF). However, the need for studies on the program is discussed, related, for example, to the scope of practices and the work process, comparing them with the professional performance in conventional family health teams[10,11].

The objective of this study was to evaluate indicators of prenatal care received by users of the ESF in municipalities of the State of Paraíba, Brazil, and to investigate differences according to characteristics of the social context and the type of health team.

METHODS

This is a cross-sectional study included in a project of multifaceted and multiethnic evaluation of the implementation of food and nutrition actions in the ESF in the State of Paraíba. The research included the evaluation of prenatal care among a set of secondary objectives.

The state of Paraíba comprises 223 municipalities with 94.66% ESF coverage at the time of data collection. The scenario of this research was the state's municipalities with populations between 30,000 and 149,999 inhabitants that are priorities for actions aimed at preventing childhood obesity in the context of the *Programa Saúde na Escola*[12]. Of the total of 12 municipalities, three were excluded, one for being the only one with partial ESF coverage, another for not having a PMM health team linked to the Family Health Support Center, and the third considering its insertion in another proposal with characteristics similar to the object of the present one. Thus, nine municipalities with total ESF coverage, 46 ESF health teams supported by the Family Health Support Center, and 17 daycare centers linked to health teams in the context of the School Health Program participated in the study.

The study population was considered as children aged 0 to 59 months and their mothers living in the municipalities selected to participate in the survey, users of the ESF (N=38,140). Sample size was calculated considering a two-tailed significance level of 5% (α=0.05), confidence interval of 95%, statistical power of 90% (β=0.10), ratio of exposed to unexposed of 1:1, expected proportion of occurrence of the outcome in the unexposed group of 20% (prevalence of overweight in children used as an indicator to decide the inclusion of municipalities as priorities for the development of actions aimed at preventing childhood obesity)[12] and expected prevalence ratio of 1.5, indicating the need to include at least 790 individuals. To this number, 15% was added to compensate for possible losses and to control confounding factors, totaling a required sample of 909 children. The final sample was 897 individuals. For each municipality, the number of health teams (both PMM and conventional), daycare centers, and individuals was determined proportionally to the number of children under 5 years old residing there.

The sample was selected in two stages, the first selecting the health teams and daycare centers, and the second the individuals. For the health teams, the children were first selected during the childcare on the day of data collection. In a second moment, an active search for children in their homes was carried out, based on the health teams' records. In daycare centers, the children were selected from the list of those available in these institutions. The selection of health teams, daycare centers, and individuals was by random drawing.

Data collection was conducted in health care facilities and daycare centers in the second half of 2018 by properly trained and supervised interviewers who applied a questionnaire to the mothers of children assisted in these locations. The pilot study was conducted in one municipality in the state that was not part of the research.

Information was obtained related to socioeconomic characteristics (mother's work outside the home, socioeconomic classification of the family, *Bolsa Família* benefit and family Food and Nutrition Security), social support (mother's cohabitation with partner, social support, and family functionality), type of health care team in the ESF (whether PMM or conventional), and prenatal care. For these purposes, the mothers answered a questionnaire.

The socioeconomic classification of the family was based on the criteria of the *Associação Brasileira de Empresas de Pesquisa*[13], which is used to estimate the purchasing power of Brazilian families. The families were classified in the socioeconomic levels A/B/C (score from 17 to 100) and D/E (score from 0 to 16).

To assess the situation of Food and Nutrition Security (FNS), the Brazilian Food Insecurity Scale with 14 items[14] was applied. This is a validated scale that makes it possible to classify families in four degrees of food (in)security: food security, mild food insecurity, moderate food insecurity and severe food insecurity. For the analyses, the FNS situation was dichotomized into food and nutritional security/mild food insecurity (FNS/MFI) and moderate-severe food insecurity (M-SFI).

For social support, we used the Medical Outcomes Study questionnaire, composed of 19 items, with five response options, in five dimensions: material, affective, emotional, information, and social interaction[15]. The answers were expressed as a total score, which was dichotomized based on the median. Thus, a "score >90" was used as the cutoff point, indicating higher levels of social support.

Family functioning was measured by means of the Family APGAR. This questionnaire is composed of five questions, with three options for answers, corresponding to five evaluation domains: adaptation, companionship, development, affectivity, and resolutive capacity. Families with scores from 0 to 3 are classified as having a high family dysfunction; from 4 to 6, moderate family dysfunction; and from 7 to 10, good family functionality[16]. For analysis purposes, the families were classified as functional or dysfunctional (high and moderate family dysfunction).

To analyze prenatal care, questions were asked about the time of onset, number of consultations, use of ferrous sulfate and immunization against tetanus before or during pregnancy, as recommended by the Ministry of Health's protocol for low-risk prenatal care[17]. In addition, information on gestational age at the time of delivery was obtained, to correct the number of consultations according to it. To calculate the adequacy of the number of consultations, the minimum schedule of consultations recommended by the Ministry of Health was used: at least one consultation in the first trimester of pregnancy, two in the second, and three in the last trimester[2]. The number of consultations was considered adequate when the pregnant woman had 100% of the minimum number of consultations for gestational age at the time of delivery.

The group of independent variables was formed by maternal work outside the home, socioeconomic classification of the family (classes A/B/C, classes D/E), Bolsa Família benefit, family FNS (FNS/MFI, M-SFI), cohabitation of the mother with a partner (yes, no), social support (high, low), family functionality (functional, dysfunctional) and type of ESF health team (PMM, conventional). The indicators related to care during prenatal care were the outcomes of interest (dependent variables): period of onset (1st trimester of gestation, after 1st trimester of gestation), number of consultations for gestational age at delivery (≥6, <6), use of ferrous sulfate (yes, no), and tetanus vaccine before or during pregnancy (yes, no).

We used chi-square statistics or McNemar's test, in the case of correlated frequencies or with dependency relationship (period of prenatal care initiation), to test the association of independent variables with the dependent ones. In the multivariate analysis by logistic regression all exploratory variables entered the model, and only those with a p-value <0.20 (backward stepwise) remained. A significance level of α equal to 5% was assumed. The analyses were performed considering the study design with Stata software version 12.0.

The research was approved by the Research Ethics Committee of Universidade Estadual da Paraíba (71609317.9.0000.5187). All research participants signed the Informed Consent Form.

RESULTS

The study included 897 mothers with children under 5 years of age. Despite the number of interviews conducted, the number of information effectively used varied (small variations) according to the characteristics of each indicator, avoiding biases in the interpretation of results.

Table 1 presents the characteristics of the women included in the study. According to the results, the women were mostly not

Table 1: Characteristics of the social context and prenatal care of women with children under 5 years of age users of the Family Health Strategy in municipalities of the State of Paraíba, Brazil, 2018.

Variables	n	%
Sex of the child		
Male	458	51.1
Female	439	48.9
Age of the child at the time of data collection		
≥24 months	433	48.3
<24 months	464	51.7
Mother's work		
Yes	257	28.7
No	638	71.3
Socioeconomic level		
A/B/C Classes	320	35.7
D/E Classes	577	64.3
Bolsa Família Benefit		
Yes	606	67.6
No	291	32.4
Food and Nutrition Security		
Food and Nutrition Security/Mild Food Insecurity	678	75.7
Moderate-Severe Food Insecurity	218	24.3
Cohabitation with partner		
Yes	671	74.8
No	226	25.2
Social Support		
High	403	44.9
Low	494	55.1
Family Functionality		
Functional Family	628	70.0
Dysfunctional Family	269	30.0
Type of prenatal care team		
Mais Médicos Program	347	38.7
Conventional	550	61.3
Trimester of prenatal initiation		
1st	716	81.0
After the 1st	168	19.0
Number of prenatal visits		
≥6	586	83.0
<6	120	17.0
Use of Ferrous Sulfate in pregnancy		
Yes	848	94.9
No	46	5.1
Tetanus vaccine before or during pregnancy		
Yes	788	88.8
No	99	11.2

working outside the home (71.3%), of socioeconomic class D/E (64.3%) and beneficiaries of the *Bolsa Família* Program (67.6%). Living with a partner and functional family presented frequencies of 74.8% and 70.0%, respectively. Of the interviewees, 81.0% stated that they had started prenatal care in the first trimester and 83.0% that they had attended at least six consultations. The use of ferrous sulfate and immunization against tetanus before or during pregnancy were mentioned by 94.9% and 88.8% of the interviewees, respectively.

Table 2 shows that mothers who worked outside the home were those who recorded the highest prevalence of initiation of prenatal care in the first trimester of pregnancy (85.4%) when compared to those who did not work (79.4%). Mothers who lived with a partner had higher prevalence of initiation of prenatal care in the first trimester (p=0.001), of six or more consultations (p=0.048), and of use of ferrous sulfate (p=0.003). Similar results to the above were obtained in relation to socioeconomic status and *Bolsa Família* benefit, with women from families classified in classes A/B/C and nonbeneficiaries of the Program having the highest prevalence of these procedures. In the families identified with FNS/MFI lived women with greater adequacy of

prenatal care according to the trimester of onset and number of consultations for gestational age at delivery. High social support (p<0.001), family functionality (p<0.001) and services provided by PMM teams (p<0.001) were associated with initiation of prenatal care in the first trimester of pregnancy.

In the multivariate analysis, each of the factors associated with the outcomes in the bivariate analyses maintained their behavior. As shown in Table 3, women who worked outside the home (OR=1.55; 95% CI 1.20-1.71), from socioeconomic classes A/B/C (OR=1.99; 95% CI 1.28-2.32), not receiving *Bolsa Família* (OR=1.77; 95% CI 1.39-1.97), in a FNS/MFI situation (OR=2.22; 95% CI 1.76-2.35), living with a partner (OR=1.79; 95% CI 1.42-1.97), high social support (OR=1.49; 95% CI 1.33-1.86), functional family (OR=1.75; 95% CI 1.23-2.73), and users of PMM health teams (OR=1.15; 95% CI 1.04-1.40). Similar associations to the previous ones, in the same direction, were observed for the number of consultations for gestational age at delivery and the use of ferrous sulfate in pregnancy with socioeconomic class, *Bolsa Família* benefit and living with a partner, as well as between the number of consultations for gestational age at delivery and FNS.

Table 2: Distribution of characteristics related to care during prenatal care according to variables of interest among users of the Family Health Strategy in municipalities of the State of Paraíba, 2018.

Variables	Start Quarter		Number of inquiries		Ferrous Sulfate Usage		Tetanus vaccine before or during pregnancy	
	1°	After the 1st	≥ 6	< 6	Yes	No	Yes	No
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Mother's work	p<0.001		p=0.154		p=0.464		p=0.132	
Yes	216 (85.4)	37 (14.6)	185 (86.0)	30 (14.0)	245 (95.7)	11 (4.3)	221 (86.3)	35 (13.7)
No	500 (79.4)	130 (20.6)	401 (81.7)	90 (18.3)	602 (94.5)	35 (5.5)	566 (89.8)	64 (10.2)
Socioeconomic level	p<0.001		p=0.015		p=0.017		p=0.055	
Classes A/B/C	278 (87.2)	41 (12.8)	225 (87.5)	32 (12.4)	311 (97.5)	8 (2.5)	273 (73.6)	44 (26.2)
D/E Classes	438 (77.5)	127 (22.5)	361 (80.4)	88 (19.5)	540 (93.9)	35 (6.1)	515 (90.4)	55 (9.6)
Bolsa Família Benefit	p<0.001		p=0.008		p= 0.047		p=0.366	
Yes	467 (78.4)	129 (21.6)	387 (80.5)	94 (19.5)	569 (94.2)	35 (5.8)	537 (89.5)	63 (10.5)
No	249 (86.5)	39 (13.5)	199 (84.4)	26 (15.5)	282 (97.2)	8 (2.8)	251 (87.5)	36 (12.5)
Food and Nutrition Security	p<0.005		p<0.001		p=0.092		p=0.369	
FNS/MFI	565 (84.2)	106 (15.8)	450 (85.9)	74 (14.1)	646 (95.4)	30 (4.4)	596 (88.6)	77 (11.4)
M-SFI	151 (70.9)	62 (29.1)	136 (74.8)	46 (25.2)	202 (92.7)	16 (7.3)	192 (89.7)	22 (10.3)
Cohabitation with partner	p<0.001		p=0.048		p=0.003		p=0.051	
Yes	551 (84.6)	110 (15.4)	441 (84.6)	80 (15.4)	645 (96.4)	24 (3.6)	582 (87.7)	82 (12.3)
No	165 (74.0)	58 (26.0)	145 (78.4)	40 (21.6)	206 (91.6)	19 (8.4)	206 (92.4)	17 (7.6)
Social Support	p<0.001		p=0.362		p=0.295		p=0.443	
High	335 (84.4)	62 (15.6)	265 (84.9)	47 (15.1)	386 (96.0)	16 (4.0)	350 (87.9)	48 (12.1)
Low	381 (78.2)	106 (21.8)	330 (81.9)	73 (18.1)	465 (94.6)	27 (5.4)	438 (89.6)	51 (10.4)
Family Functionality	p<0.001		p=0.96		p=0.164		p=0.572	
Functional Family	519 (83.6)	102 (16.4)	416 (84.6)	76 (15.4)	598 (95.6)	28 (4.4)	555 (89.2)	67 (10.8)
Dysfunctional Family	197 (75.0)	66 (25.0)	170 (79.4)	44 (20.6)	250 (93.3)	18 (6.7)	233 (87.9)	32 (12.1)
Type of health team	p<0.001		p=0.761		p=0.074		p=0.797	
Mais Médicos Program	280 (81.9)	62 (18.1)	216 (84.4)	46 (17.6)	333 (96.5)	12 (3.5)	305 (89.2)	37 (10.8)
Conventional	436 (80.5)	106 (19.5)	370 (83.3)	74 (16.7)	515 (93.8)	34 (6.2)	483 (88.7)	62 (11.3)

FNS/MFI: Food and Nutrition Security/Mild Food Insecurity, MSF-I: Moderate-Severe Food Insecurity.

Table 3: Adjusted logistic regression of the variables of interest with the adequacy of prenatal care indicators received by users of the Family Health Strategy in municipalities of the State of Paraíba, 2018.

Variáveis	Initiation of prenatal care in the 1st trimester of pregnancy		Six or more prenatal visits		Use of Ferrous Sulfate in pregnancy		Tetanus vaccine before or during pregnancy	
	Odds Ratio (95% CI)		Odds Ratio (95% CI)		Odds Ratio (95% CI)		Odds Ratio (95% CI)	
	Gross	Adjusted*	Gross	Adjusted*	Gross	Adjusted*	Gross	Adjusted*
Mother's work								
Yes	1.52 (1.22-1.79)	1.55 (1.20-1.71)	1.38 (0.89-1.63)	1.35 (0.90-1.70)	1.29 (0.92-1.57)	1.26 (0.94-1.55)	0.71 (0.88-1.85)	0.70 (0.88-1.87)
No	1	1	1	1	1	1	1	1
Socioeconomic level								
Classes A/B/C	1.97 (1.26-2.29)	1.99 (1.28-2.32)	1.71 (1.46-1.77)	1.74 (1.44-1.80)	2.52 (1.70-3.38)	2.54 (1.73-3.33)	0.66 (0.59-1.09)	0.65 (0.56-1.09)
D/E Classes	1	1	1	1	1	1	1	1
Bolsa Família Benefit								
Yes	0.57 (0.33-0.81)	0.55 (0.35-0.83)	0.54 (0.32-0.84)	0.54 (0.31-0.86)	0.46 (0.29-0.90)	0.44 (0.27-0.89)	1.22 (0.70-1.31)	1.21 (0.66-1.33)
No	1	1	1	1	1	1	1	1
Food and Nutrition Security								
FNS/MFI	2.19 (1.78-2.37)	2.22 (1.76-2.35)	2.06 (1.80-2.33)	2.07 (1.87-2.44)	1.71 (0.92-1.99)	1.70 (0.90-2.00)	0.89 (0.62-1.27)	0.85 (0.61-1.23)
M-SFI	1	1	1	1	1	1	1	1
Cohabitation with partner								
Yes	1.76 (1.44-1.91)	1.79 (1.42-1.97)	1.52 (1.29-1.82)	1.57 (1.25-1.83)	2.48 (1.72-3.43)	2.50 (1.78-3.44)	0.59 (0.44-1.28)	0.55 (0.45-1.30)
No	1	1	1	1	1	1	1	1
Social Support								
High	1.50 (1.34-1.80)	1.49 (1.33-1.86)	1.25 (0.72-1.93)	1.21 (0.78-1.96)	1.40 (0.69-1.75)	1.37 (0.66-1.70)	0.85 (0.51-1.49)	0.80 (0.50-1.52)
Low	1	1	1	1	1	1	1	1
Family Functionality								
Functional Family	1.70 (1.25-2.77)	1.75 (1.23-2.73)	1.42 (0.80-1.92)	1.38 (0.88-1.82)	1.54 (0.74-1.96)	1.55 (0.72-1.99)	1.14 (0.68-1.91)	1.17 (0.66-1.94)
Dysfunctional Family	1	1	1	1	1	1	1	1
Type of health team								
Mais Médicos Program	1.10 (1.03-1.40)	1.15 (1.04-1.34)	0.94 (0.77-1.86)	0.95 (0.78-1.86)	1.78 (0.76-1.99)	1.77 (0.76-1.99)	1.06 (0.80-2.01)	1.09 (0.81-2.00)
Conventional	1	1	1	1	1	1	1	1

FNS/MFI: Food and Nutrition Security/Mild Food Insecurity, M-SFI: Moderate-Severe Food Insecurity.
*All analyses adjusted for the variables: maternal labor, socioeconomic status, *Bolsa Família* benefit, food and nutritional security, mother's cohabitation with partner, social support, family functionality, and type of prenatal care team.

DISCUSSION

This study sought to evaluate indicators of prenatal care, through the data of a cross-sectional study with users of the ESF. Although the findings show positive rates of prenatal care indicators, important influences of the social context are perceived, as highlighted in the literature the relationship of prenatal care with socioeconomic factors, access to consultations, cohabitation with a partner, and family support[18].

In that study, the proportion of users who started prenatal care in the first trimester of pregnancy (81.0%) is similar to the findings for the Northeast Region of Brazil according to population surveys[19,20]. These rates are higher than those found in sub–Saharan African countries where prenatal care initiation is concentrated in the second trimester, ranging from 10.5% in Kenya to

57.8% in Senegal[6]. Pregnant women who start prenatal care before the second trimester are more likely to have an adequate number of consultations[5].

Regarding the performance of at least six prenatal consultations, the evidence is similar, and the proportion recorded in the current study (83.3%) is close to that found in the Brazilian Northeast (75.4%)[21] and in the municipalities of Campina Grande (79.2%)[7] and João Pessoa (89,9%)[22]. These values exceed those recorded in sub-Saharan African countries in which the percentages of women who underwent at least four consultations during pregnancy were less than 50%[6].

The high prevalence of ferrous sulfate use observed in the current study, 94.4%, is similar to that observed in nationwide surveys[4,19,23,24], as well as to that found in sub–Saharan African

countries[6]. Ferrous sulfate supplementation represents an effective way to prevent and correct anemia during pregnancy, besides reducing the risk of prematurity and puerperal infections[25]. Adherence to effective supplementation during pregnancy is associated with encouragement by the health professional in charge, proper prescription, and women's knowledge about its relevance in the pregnancy-puerperal period[26].

The tetanus vaccine is considered effective for the prevention of accidental tetanus during pregnancy and for the subsequent neonatal tetanus episode[17], and risks in this sense can be inferred from the pregnant women in the current study (11.2%) who reported they had not been immunized. The tetanus vaccination rate in other locations in Brazil varies, with proportions of 54.8% in Rio de Janeiro, Rio de Janeiro[5], 70% in Vitória, Espírito Santo[27] and 94.7% in João Pessoa, Paraíba[22]. This divergence in results may be related to the characteristics of health services that influence vaccination coverage during prenatal care, such as material resources, health units' infrastructure, and health professionals' turnover, which impairs the user-professional bond[27]. The previous rates are higher than the 25% coverage recorded in the Pakistani city of Punjab, influenced by factors such as the distant location of health units, inconvenient working hours, insufficient supplies, and lack of professionals[28].

In this study, early initiation of prenatal care was more frequent among pregnant women assisted by PMM teams. Although no studies were found in the literature with similar analyses, the association was recorded in a recent study that considered the type of health team as the main independent variable, showing that initiation of prenatal care was favored when the assistance was performed in family health teams compared to traditional ones, conditioned to better conditions of the services in issues such as organization, identification of the health needs of the population, and integration with the community[29].

Maternal labor was evidenced as a factor associated with the beginning of prenatal care in the first trimester of pregnancy (85.4%), a fact also verified in other studies developed in different regions of Brazil[18,19]. Early initiation of prenatal care favors access to diagnosis and therapy for several health problems that can result in serious problems in women and their offspring, such as chronic hypertension, non-gestational diabetes, anemia, and syphilis and HIV infection. In addition, it provides a more accurate estimate of gestational age and thus better monitoring of fetal growth and benefits to maternal health[30].

The relationship between the number of consultations and the time of prenatal care initiation with the socioeconomic context observed in this study was also listed by other researchers[23,24]. It is assumed that among women of low socioeconomic status, inadequate care in their places of residence, lack of knowledge, and limited health actions actively contribute to prenatal care[23].

The *Bolsa Família* Program benefit can be considered an important marker of the family's social and economic situation that can also influence prenatal care, according to current observation and previous research[19,23]. However, another study with different results explains that the conditionalities of this Program should provide improvements in health care, encouraging women to seek services as a means of preventing maternal and child health problems[31].

Although we are not aware of the results of other studies developed in Brazil pointing out the association found between FNS and the beginning and number of prenatal visits, this finding may be related to the benefits of prenatal care in aspects such as wellbeing, health, social support and sharing of information and experiences. In addition, it can positively contribute to the allocation of resources, food choices, and preparation of meals at home, ensuring improvement in the quantity and quality of food during pregnancy[32,33].

The FNS situation can be modified by prenatal care. Research developed with pregnant women in the United States showed that low-income pregnant women with prenatal care were more likely to maintain or achieve FNS at the end of pregnancy and postpartum[32]. In Bangladesh, reduced food insecurity was found in areas where prenatal care was provided early in pregnancy and focused on nutritional components[33]. The importance of such results stands out when considering the increased nutritional needs during pregnancy and its possible implications on work capacity, food purchasing, and preparation of nutritious meals, emphasizing the relevance of health care in FNS during pregnancy[32,33].

The pregnant women observed in this study who lived with a partner reached a higher prevalence with the beginning of prenatal care in the first trimester (84.6%), at least six consultations (84.6%), and with the use of ferrous sulfate (96.4%), when compared to those who did not maintain an affective relationship, associated to the results observed in other studies[5,18,19,24,34]. A recent study in Bangladesh showed that pregnant women who participated in a support group for prenatal care with the participation of partners and health education helped reduce family barriers to the search for regular care during pregnancy and increased the regular search for prenatal care, influenced by the encouragement received from the partner[35]. In Brazil, another study has highlighted the presence of the companion during prenatal care as an important factor in encouraging the continuation of consultations and satisfaction with the services received, revealing that the support played by companions is as important as the obstetric care received by health professionals[36]. The husband/companion can facilitate the adherence to prenatal care, since his presence in this phase of life contributes to the autonomy and emotional stability, minimizing moments of stress, psychological conflicts and difficulties in general related to pregnancy[34].

In the current study, the importance of social support in prenatal care was verified not only through the participation of the partner in the life of the pregnant woman, revealing the high social support and family functionality as factors associated with

the beginning of prenatal care in the first trimester of pregnancy. These findings are comparable to those found in studies with pregnant women in Senegal[37], Gana[38] and in the state of Rio de Janeiro[39]. The influence of social support and family encouragement in the adherence to and acceptance of prenatal care services was reinforced in a recent article reviewing the world literature, indicating the need for further research in the Brazilian context[40].

The limitations of this study include the possibility of memory bias associated with the retrospective context of the questionnaire, the time elapsed since pregnancy in relation to the time of data collection, and the accuracy of the information of the items evaluated. As all scales used measure situations that change over time (SAN, economic status, marital status, receipt of family allowance, social support, family functionality), it is not possible to establish the temporal relationship of the associations. The beginning of prenatal care can be considered subject to errors, since it was based on the mother's report and not on the date of the last menstrual period or by ultrasonography. In the case of the number of consultations, a possible overestimation of the indicator should be considered, since the current recommendation of the *Rede Cegonha* is of more than seven consultations for a low-risk pregnancy. In addition, we did not consider indicators related to

tests that are recommended as part of prenatal care, such as testing for syphilis and HIV, which are essential for the prevention of vertical transmission of these diseases. This information was obtained for the mothers of children under two years of age and analyzed for another article. Similarly, factors that may influence prenatal care, such as maternal age, use of alcohol or other drugs during pregnancy, parity, and acceptance of pregnancy were not considered. Despite these limitations, the findings are relevant when analyzing exposures little considered in the analysis of social inequalities in prenatal care services.

The evaluation of prenatal care provided to women in this study showed satisfactory indicators. It was possible to verify inequalities in prenatal indicators according to socioeconomic conditions and related to the social support of the pregnant woman. The time of onset and number of prenatal visits were favorable in cases of women living with a partner, better socioeconomic status, no benefit from *Bolsa Família* and FNS/MFI. The use of ferrous sulfate was positively associated with living with a partner, while the high social support, family functionality, and care in PMM teams favored the time to start prenatal care. This knowledge is relevant since it highlights priority groups for which medical and nursing care during prenatal care should be strengthened.

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