

# Sexuality and associated risk factors in pregnant women

*Sexualidade em gestantes e fatores de risco associados*  
*Sexualidad en gestantes y factores de riesgo relacionados*

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## ABSTRACT

**Objectives:** to assess the sexual function of pregnant women and the influence of sociodemographic, obstetric, and behavioral factors on sexual dysfunction. **Methods:** cross-sectional study conducted with 141 pregnant women attended by the Single Health System and 120 by one private service, totaling 261 participants. A questionnaire containing sociodemographic, obstetric, and behavioral variables was applied, as well as the Female Sexual Function Index instrument, which was used to assess sexual function. Associations between variables and sexual dysfunction were made using the chi-square test, considering a statistically significant result when  $p < 0.05$ . **Results:** among the participants, 32.1% had sexual dysfunction, and the variables "age", "income" and "type of health service" had an influence on sexual dysfunction. The prevalence of pregnant women was between 21 and 30 years old ( $p < 0.001$ ), with an income between 1 and 2 minimum wages ( $p = 0.048$ ) and used the public health system network ( $p = 0.000$ ). **Conclusions:** the factors associated with sexual dysfunction are "young pregnant women", "low income" and "attended in the public health service".

**Descriptors:** Sexual Dysfunction, Physiological; Sexual Behavior; Risk Factors; Pregnant Women; Sexuality.

## RESUMO

**Objetivos:** avaliar a função sexual de gestantes e a influência dos fatores sociodemográficos, obstétricos e comportamentais associados à disfunção sexual. **Métodos:** estudo transversal realizado com 141 gestantes atendidas pelo Sistema Único de Saúde e 120 pelo serviço privado, totalizando 261 participantes. Utilizou-se questionário contendo variáveis sociodemográficas, obstétricas e comportamentais; e instrumento *Female Sexual Function Index* para avaliar função sexual. As associações entre variáveis e disfunção sexual foram feitas pelo teste qui-quadrado, consideradas estatisticamente significativas se  $p < 0,05$ . **Resultados:** dos participantes, 32,1% apresentaram disfunção sexual, e há influência dos fatores "idade", "renda" e "tipo de serviço de saúde" na disfunção sexual, prevalecendo gestantes entre 21 e 30 anos ( $p < 0,001$ ), com renda entre 1 e 2 salários mínimos ( $p = 0,048$ ) e que utilizam o serviço público ( $p = 0,000$ ). **Conclusões:** os fatores associados à disfunção sexual são "gestantes jovens", "baixa renda" e "atendimento no serviço público".

**Descritores:** Disfunções Sexuais Fisiológicas; Comportamento Sexual; Fatores de Risco; Gestantes; Sexualidade.

## RESUMEN

**Objetivos:** evaluar la función sexual de gestantes y la influencia de los factores sociodemográficos, obstétricos y comportamentales relacionados a la disfunción sexual. **Métodos:** estudio transversal realizado con 141 gestantes atendidas por el Sistema Único de Salud y 120 por el servicio privado, totalizando 261 participantes. Se ha utilizado cuestionario conteniendo variables sociodemográficas, obstétricas y comportamentales; e instrumento *Female Sexual Function Index* para evaluar función sexual. Las relaciones entre variables y disfunción sexual han sido realizadas por el test chi cuadrado, consideradas estadísticamente significativas si  $p < 0,05$ . **Resultados:** de los participantes, 32,1% presentaron disfunción sexual, y hay influencia de los factores "edad", "renta" y "tipo de servicio de salud" en la disfunción sexual, prevaleciendo gestantes entre 21 y 30 años ( $p < 0,001$ ), con renta entre 1 y 2 salarios mínimos ( $p = 0,048$ ) y que utilizan el servicio público ( $p = 0,000$ ). **Conclusiones:** los factores relacionados a la disfunción sexual son "gestantes jóvenes", "baja renta" y "atención en el servicio público".

**Descriptorios:** Disfunciones Sexuales Fisiológicas; Comportamiento Sexual; Factores de Riesgo; Gestantes; Sexualidad.

## INTRODUCTION

Pregnancy is as a period of intense changes in a woman's life. They experience emotional changes, with the incorporation of the new role of mother, and systemic physiological changes, which can severely compromise their wellbeing<sup>(1)</sup>. Among these changes, sexual function stands out, since it can affect the physical, emotional, personal, and social domains of a pregnant woman's life.

Female sexual function consists in four moments: desire, excitement, orgasm, and resolution. A sexual dysfunction is present when there is a difficulty in any of these phases<sup>(2)</sup>. According to the World Health Organization (WHO), sexual dysfunction is any change in the human sexual response that produces physical and/or emotional suffering, individually or between partners<sup>(3)</sup>.

Sexual dysfunction can occur at any stage of a woman's life. However, after the discovery of pregnancy, sexual function seems to be negatively affected. There is a decrease in sexual relations and desire, which can lead to a pathological condition of sexual dysfunction<sup>(4)</sup>.

In addition, pregnancy can also cause the weakening of the pelvic floor muscles (PFM), since the involuntary contractions of PFMs are the main mechanism of orgasm and, when they are not strengthened, can cause vaginal hypoesthesia and anorgasmia<sup>(5)</sup>, aggravating the sexual function of pregnant women.

The condition of sexual dysfunction can be influenced by several factors, which can be biological (cardiovascular diseases, diabetes *mellitus*, age, medications, alcoholism, smoking, and using illicit drugs), psychological (mental disorders and depression), social (culture, religious beliefs, and relationship with the partner), or a combination of several of these factors that, associated with pregnancy, can result in a dysfunctional sexual condition<sup>(4,6)</sup>.

Researches also reveal that, regardless of the socioeconomic and cultural context of women, they may experience difficulties with desire, excitement, orgasm, lubrication during pregnancy, in addition to sexual dissatisfaction and dyspareunia. Usually, with the progress of pregnancy, there is a decrease in desire, sex frequency, and sexual satisfaction<sup>(4,7-8)</sup>.

A Brazilian study that aimed at assessing the prevalence of sexual dysfunction in the three gestational trimesters with 140 women in seven basic health units showed a high prevalence (33.04%), and also revealed a difference between the first and the second trimesters ( $p = 0.018$ ); and between the first and the third ( $p = 0.014$ )<sup>(9)</sup>.

Despite this high prevalence of sexual dysfunction in pregnant women, this condition is rarely investigated by health professionals who perform prenatal care<sup>(10)</sup>, and is often considered a normal situation, inherent to pregnancy. In addition, problems in sexuality during the gestational period are rarely brought forth by women as a gynecological complaint<sup>(11)</sup>, leaving a gap in the integrality of care. The relationship between pregnancy and sexual dysfunction is still little studied<sup>(12)</sup>, and little is known about the real factors that can influence it during pregnancy.

In this context, identifying the presence of sexual dysfunctions in pregnant women, as well as the main domains in which sexual function is compromised, can aid professionals to provide assistance during regular risk prenatal care, directing assistance and minimizing the risks for sexual dysfunction. In addition, knowledge

of sociodemographic, obstetric, and behavioral factors, possibly associated with this condition, can help health professionals to recognize pregnant women who are more susceptible to sexual dysfunction and, thus, intervene early with them and their partners to promote sexual health during pregnancy.

## OBJECTIVES

To assess the sexual function of pregnant women and the influence of sociodemographic, obstetric, and behavioral factors on sexual dysfunction.

## METHODS

### Ethical aspects

The study respected the guidelines and norms for researches involving human beings from Resolution No. 466/2012, from the National Health Council of the Ministry of Health, to guarantee that the rights of the participants were respected; it was approved by the Ethics and Research Committee (ERC) of the *Maternidade Escola Assis Chateaubriand* (MEAC) from the *Universidade Federal do Ceará* (UFC).

### Design, period, and place of study

This is a cross-sectional cohort study, carried out in three Single Health System (SUS) centers that care for pregnant women and one private clinic that offers services in the obstetric and gynecological areas. Data collection took place between September and December 2014.

### Population; criteria of inclusion

The population was composed of low-risk pregnant women. The sample size was calculated from the sum of approximately 800 monthly consultations of all pregnant women attended at the selected health institutions. This number was calculated considering 500 women attended monthly at *Clínica Femininagem*, 83 pregnant women in prenatal care at CEDEFAM/CPN and 215 pregnant women in the other two Primary Healthcare Units, reaching a total of 798 consultations. Thus, at a 95% confidence level, maximum error of 5%, the percentage with which the phenomenon occurs, and a complementary percentage of 0.5, a sample of 261 pregnant women was calculated, 120 of which were collected in the private service and 141 in the public service.

The inclusion criterion was being a pregnant woman in low-risk prenatal care. A high-risk prenatal can interfere with the sexual function of pregnant women, regardless of gestational age.

Low-risk pregnancies are those in which it is not necessary to apply interventions of greater complexity and whose maternal and perinatal morbidities and mortality are lower than those of the general population<sup>(13)</sup>.

### Study protocol

The invitation to participate in the study was extended when women were waiting for the prenatal care consultation, in the case

of the public service, and when they were waiting for obstetric examinations, in the case of the private one. After acceptance, the participants were sent to the rooms reserved for signing the Free and Informed Consent Form (TCLE) and applying the research instruments, thus, maintaining the privacy of the answers provided.

Two instruments were used. The first was a clinical questionnaire containing factors that can influence the sexual function of pregnant women. It consists in three parts: 1) Sociodemographic data, 2) Obstetric data, and 3) Factors associated with personal behavior. The variables collected in part 1 were: age, marital status, educational level, family income, whether they were working, and body mass index (BMI); in part 2: gestational trimester, parity, type of delivery, and number of live children; and in part 3: pregnancy planning, partner support, receiving educational guidance on sexuality during pregnancy, physical activity, and type of service of their prenatal care.

The appearance and content of the instrument were assessed by four judges who are specialists in the field of sexual and reproductive health, in clinical obstetrics, and with knowledge about the methodology of preparing questionnaires.

The second instrument was the Female Sexual Function Index (FSFI)<sup>(14)</sup>, validated for pregnant women<sup>(15)</sup> and used to assess sexual dysfunction. It is considered to be short, multidimensional, and reliable, capable of evaluating the main dimensions of the woman's sexual function. It consists of five domains of sexual response: 1) Desire and subjective stimulation, 2) Lubrication, 3) Orgasm, 4) Satisfaction, and 5) Pain or discomfort. The final score of the scale can vary from 2 to 36 and is obtained by adding the weighted scores of each domain. A score below 26.5 was considered as a cutoff point to characterize sexual dysfunction<sup>(16)</sup>.

The FSFI instrument was applied to 190 women, since 71 participants reported not having had sexual intercourse in the last four weeks, which is the recommended period for using the instrument<sup>(14)</sup>. However, the questionnaire of sociodemographic, obstetric, and behavioral variables was applied to all women.

### Analysis of results and statistics

Data was compiled and analyzed using the statistical software Statistical Package for the Social Sciences (SPSS), version 20.0. Means and standard deviations of quantitative variables were calculated. Levene's tests were performed to verify the homogeneity of the variances; and the Kolmogorov-Smirnov test to verify the normality of the variables. Subsequently, the means of the FSFI scale were analyzed by Student's t-test, Mann-Whitney's, and Wilcoxon's tests, when there were two groups; if there were three or more groups, Snedecor's F distribution (multiple comparisons by the Tukey test), Friedman's, or the Kruskal-Wallis's (multiple comparisons by the Conover test) tests were used.

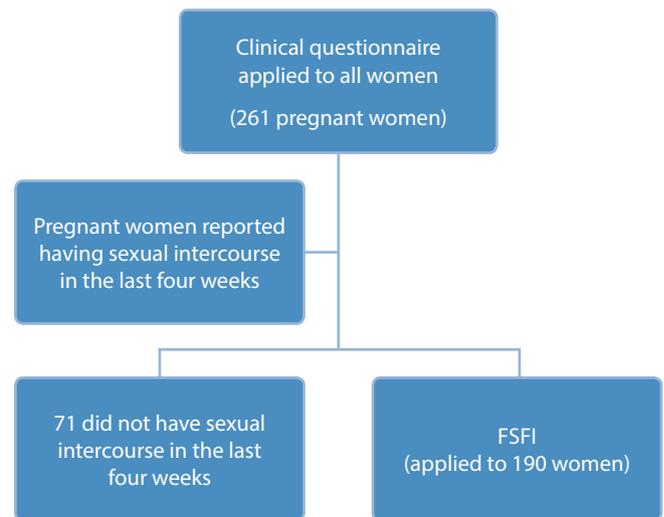
Associations between variables and sexual dysfunction were made using the  $\chi^2$  test, and the odds ratio (OR) with a respective 95% confidence interval (95% CI). Inferential analyzes were considered statistically significant if  $p < 0.05$ . The variables "age", "education", "income" and "gestational trimester" were transformed into dichotomic and compared in terms of category extremes, so that the associations had greater capacity for inferences of cause and effect.

It is noteworthy that the variables "gestational trimester" and "parity" were separately associated with the domains of sexual

function, since it is essential to understand which of these are most negatively associated to the sexual function of pregnant women.

## RESULTS

The sample consisted of 261 participants and, from them, 190 answered the FSFI instrument, since, as a prerequisite for answering the questionnaire, the pregnant woman should have had sexual intercourse in the last four weeks prior to the day of data collection.



Note: FSFI - Female Sexual Function Index

Figure 1 - Flowchart of the application of collection instruments

Among the 261 interviewees, the mean age was  $28.3 \pm 6.5$  years; 88.5% (231) had a stable partner; 70.9% (185) completed high school, from which 44.8% (117) attended graduation or post-graduation courses; 59% (154) stated that they had a job. The family income showed that 34.1% (89) earned between 1 and 2 minimum wages, and 38.3% (100) had an income above 6.1 minimum wages.

Regarding obstetric data, 48.1% (125) of the sample were in the second trimester of pregnancy, and 37.6% (98) were classified as overweight, according to the BMI. As for parity, 56.7% (148) were nulliparous; and, from the women who had had previous deliveries, 68.1% (77) had abdominal deliveries.

When behavioral factors were considered, 45.2% (118) of the pregnant women did not plan their pregnancy, but 95.4% (249) received support from their partner, despite the lack of planning. Most of the women, (59.4%; 155) said that they did not receive educational group or individual guidance on sexuality during pregnancy until the time of data collection, and 86.6% (226) did not practice any physical activity.

Considering the FSFI scale, it was found that 32.1% (61) of the pregnant women had sexual dysfunctions, with means lower than 26.5. Table 1 shows the means obtained from the scale and those from each domain, separately.

The total mean value was 27.2, with a standard deviation of 4.9, indicating that, in general, women do not have sexual dysfunctions, despite the low score. The domain that contributed most to lower the total average was "Desire" (3.4), and the one that obtained the highest average was "Satisfaction" (5.1).

**Table 1** - Evaluation of the sexual function of pregnant women, Fortaleza, Ceará, Brazil, Sep-Dec 2014

Domains (N = 190)	Mean ± SD*
Desire	3.4 ± 1.1
Arousal	4.1 ± 1.0
Lubrication	5.0 ± 1.0
Orgasm	4.4 ± 1.2
Satisfaction	5.1 ± 1.0
Pain	5.0 ± 1.1
Total score	27.2 ± 4.9

Note: SD\* - Standard deviation.

Table 2 shows the association of sociodemographic, obstetric, and behavioral variables with the presence or absence of sexual dysfunction.

**Table 2** - Association of sociodemographic, obstetric, and behavioral variables of pregnant women with sexual dysfunction, Fortaleza, Ceará, Brazil, Sep-Jan 2015

Variables	Sexual Dysfunction		p value	OR	CI 95%
	Yes n (%)	No n (%)			
Sociodemographic variables					
Age (n = 151)					
21 to 30 years old	38 (41.8)	53 (58.2)	0.001	4.6	1.9-10.9
31 years old or more	8 (13.3)	52 (86.7)			
Marital status (n = 190)					
Has a partner	53 (31.2)	117 (68.8)	0.424	1.5	0.6-3.8
Does not have a partner	8 (40)	12 (60)			
Years of education (n = 155)					
Up to 8 years	15 (45.5)	18 (54.5)	0.042	2.2	1.0-5.0
12 years or more	33 (27)	89 (73)			
Paid work (n = 190)					
Yes	32 (30.2)	74 (69.8)	0.525	0.8	0.4-1.5
No	29 (34.5)	55 (65.5)			
Income (n = 149)					
Between 1 and 2 MW*	36 (48)	39 (52)	0.001	4.0	1.9-8.3
Up to 4 MW*	14 (18.9)	60 (81.1)			
Obstetric variables					
Gestational trimester (n = 87)					
First trimester	8 (25)	24 (75)	0.448	1.5	0.5-3.9
Third trimester	18 (32.7)	37 (67.3)			
Parity (n = 190)					
Nulliparous	37 (36.3)	65 (63.7)	0.185	1.5	0.8-2.8
Multiparous	24 (27.3)	64 (72.7)			
Previous type of delivery (n = 88)					
Vaginal delivery	9 (30.0)	21 (70.0)	0.679	1.2	0.4-3.2
C-section (abdominal delivery)	15 (25.9)	43 (74.1)			
Number of live children (n = 190)					
Zero	38 (35.6)	67 (64.4)	0.211	1.4	0.8-2.8
One or more	23 (27.1)	62 (72.9)			
Other variables					
Planned pregnancy (n = 190)					
Yes	26 (26.5)	72 (73.5)	0.089	1.4	0.9-2.1
No	35 (38.0)	57 (62.0)			
Partner support (n = 190)					
Yes	56 (30.9)	125 (69.1)	0.123	1.7	0.9-3.3
No	5 (55.6)	4 (44.4)			
Educational actions (n = 190)					
Yes	21 (28.4)	53 (71.6)	0.379	1.2	0.7-1.8
No	40 (34.5)	76 (65.5)			
Practice of physical activity (n = 190)					
Yes	5 (17.9)	23 (82.1)			
No	56 (34.6)	106 (65.4)	0.080	1.7	0.9-3.1
Type of health service (n = 190)					
Public	49 (42.2)	67 (57.8)			
Private	12 (16.2)	62 (83.8)	0.000	3.8	1.8 - 7.7

Note: OR - odds ratio; CI - confidence interval; \*MW - R\$724.00 in December 2014.

The associations of sociodemographic variables showed a significant relationship with age and income. As for age, women between 21 and 30 years old are 4.6 times more likely to have sexual dysfunctions than those above 30 years old. Regarding income, pregnant women who earn between 1 and 2 MW are 4 times more likely to have sexual dysfunction than those with an income greater than 4 MW.

With regards to the association of sexual dysfunction with obstetric variables, there was no association with gestational age, parity, type of delivery, and number of live children. Women who were nulliparous, had a history of one or more vaginal deliveries, did not have children, and were in the third trimester had higher rates of sexual dysfunction, although these associations were not significant.

When the association between sexual dysfunction and other behavioral variables was analyzed, a significant association with the type of health service ( $p < 0.001$ ) used by the pregnant woman was found. Those attended by the public service were 3.8 times more likely to have sexual dysfunctions when compared to pregnant women who used the private health system.

Despite the lack of significance, the data showed that most women with sexual dysfunctions did not plan their pregnancy (38.0%), received no support from partners (55.9%), did not receive information on sexuality during their prenatal (34.5%), and did not practice physical activities (34.6%).

In order to further the discussion, considering the domains of sexual function, associations between the gestational quarters and parity with the means of the domains and the total scale were verified.

Table 3 shows the correlation between the scores of sexual function domains and gestational trimesters.

Comparing the mean of the domains in the three gestational trimesters, it was observed that "Desire", "Arousal" and "Satisfaction" presented a lower average in the second gestational trimester. The "Lubrication" domain was mentioned negatively more often in the first trimester, while the domain "Pain" had its worst mean in the third one.

Even though there are higher means in the domains in some gestational quarters, the only one that showed a significant difference was "Pain", which was worse in the third trimester.

The analysis of each showed that the domain which was affected the worse in all three trimesters was "Desire". In contrast, the "Satisfaction" domain showed a higher average in both the second and third trimesters.

Table 4 shows the comparison of the means of sexual function domains between nulliparous and multiparous.

Nulliparous women had lower averages in the domains "Desire", "Arousal", "Lubrication", "Orgasm" and in the total scale, with a significant difference in the "Lubrication" and "Orgasm" domains. The domains "Satisfaction" and "Pain" had identical means for both groups.

In general, the total score of nulliparous and multiparous women presented values above 26.5, which does not characterize sexual dysfunction. However, nulliparous women (26.7) had a lower average than multiparous women (27.5).

**Table 3** - Associations between the means of the domains of sexual function and the gestational trimesters, Fortaleza, Ceará, Brazil, Sep-Dec 2014

Domains	First trimester* (n = 33)	Second trimester* (n = 104)	Third trimester* (n = 61)	P value
Desire	3.7 ± 1.0	3.3 ± 1.0	3.5 ± 1.2	0.288
Arousal	4.5 ± 1.0	4.0 ± 1.0	4.1 ± 1.0	0.089
Lubrication	4.9 ± 1.1	5.0 ± 1.0	5.0 ± 1.0	0.861
Orgasm	4.4 ± 1.1	4.4 ± 1.2	4.3 ± 1.3	0.857
Satisfaction	5.2 ± 1.0	5.1 ± 1.0	5.2 ± 1.0	0.904
Pain	5.5 ± 0.7	5.0 ± 1.2	4.8 ± 1.2	0.017
Total score	28.2 ± 4.2	26.8 ± 4.8	26.9 ± 4.8	0.368

Note: \* Mean and standard deviation.

**Table 4** - Comparison between the means of the sexual function domains between nulliparous and multiparous women, Fortaleza, Ceará, Brazil, Sep-Dec 2014

Domains	Nulliparous* (n = 102)	Multiparous* (n = 88)	p value
Desire	3.4 ± 1.1	3.5 ± 1.0	0.894
Arousal	4.1 ± 1.1	4.2 ± 0.9	0.952
Lubrication	4.9 ± 1.0	5.1 ± 1.0	0.036
Orgasm	4.2 ± 1.2	4.6 ± 1.2	0.021
Satisfaction	5.1 ± 1.0	5.1 ± 1.0	0.689
Pain	5.0 ± 1.1	5.0 ± 1.2	0.568
Total score	26.7 ± 4.8	27.5 ± 4.2	0.326

Note: \* Mean and standard deviation.

## DISCUSSION

During pregnancy, sexuality is marked by a period of physical and psychological changes, which, together with cultural, social, and religious influences, can have a negative impact on pregnant women's sexual activity and behavior.

The prevalence of sexual dysfunction in the present study was 32.1% (61). A study carried out with 207 pregnant women aimed to investigate the relationship between sexual function and the quality of life of pregnant women showed a similar result, with 35.7% of pregnant women who participating showing sexual dysfunctions<sup>(17)</sup>.

Another study, which aimed to assess the prevalence of sexual dysfunction in pregnant women in the three trimesters through the FSFI, found that the average of the total scale was 27.3, similar to the findings of the present study (27.2). In addition, this study also found a prevalence of 33.04% of sexual dysfunction in pregnant women<sup>(9)</sup>, a slightly higher result compared to the present study (32.1%).

The results show a considerable percentage of pregnant women who had sexual dysfunctions. Furthermore, despite sexual intercourse being safe until the end of pregnancy, the couple, especially the man, is concerned about the baby's health, considering that the penetration during the sexual act can hurt the child, and as a result, feelings of low self-esteem and lack of desire are common in this period<sup>(18)</sup>. Sexual function affects several areas and can generate conflicts in the couple's relationship, making the gestational period a troubled time instead of a prosperous one for the family.

When each domain was analyzed individually, it was observed that the one with the highest mean was "Satisfaction" (5.1), and the one with the lowest was "Desire" (3.4). In agreement with this data, a research that aimed to verify the association of sexual dysfunction with risk factors in pregnant women also found a

lower mean in the "Desire" domain (3,4) and a higher score for "Satisfaction" (4,8)<sup>(19)</sup>.

The "Desire" domain is characterized as the desire to participate in sexual activity, which can be stimulated by thoughts or verbal and visual actions, being a more subjective stage, in which individual characteristics predominate<sup>(15)</sup>. The physiological changes that occur during pregnancy, such as indisposition and drowsiness, especially in the beginning, in addition to the change in body self-image, which is more evident from the second trimester<sup>(6)</sup>, can contribute to this lack of sexual desire during pregnancy and possibly explain the findings.

The "Satisfaction" domain, which had the highest average, assesses emotional involvement with the partner. A woman's sexual satisfaction is strongly associated with a loving relationship. Therefore, the feeling of love she has for her partner, regardless of sexual function, can contribute to good results regarding sexual satisfaction.

The associations of sociodemographic variables showed a significant relationship with age and income. Regarding age, women aged between 21 and 30 years old are 4.6 times more likely to have sexual dysfunctions than those above 30 years old. As for family income, pregnant women who earn between 1 and 2 minimum wages are 4 times more likely to have sexual dysfunctions than those who have an income greater than 4 minimum wages.

A study that aimed to assess the association between sexual function and sexual satisfaction, with 51 pregnant women in the second trimester, found similar data, with a higher prevalence of sexual dysfunction in low-income women<sup>(4)</sup>. Sexual dysfunction has a multifactorial etiology and a complex physiopathology. The interaction between sexual function and physical and emotional factors make it possible for socioeconomic factors to influence its prevalence<sup>(4)</sup>.

It is also known that the sexual function in pregnancy undergoes some transformations. From this perspective, some of its particularities need to be understood in order to face the problems of that period in a satisfactory way. As a result, aspects such as low income can influence and increase the rates of sexual dysfunction in this population. On the other hand, women with higher income and higher educational levels may have greater access to information and, thus, be more empowered regarding their sexuality. They can clarify their doubts with health professionals during prenatal consultations, in addition to involving the partner in this discussion, which facilitates experiencing sexuality fully in this stage.

Regarding the association between obstetric variables and the presence of sexual dysfunction, there was no statistical significance. However, higher averages of pregnant women with sexual dysfunction had the following characteristics: they were in the third trimester, nulliparous, with a history of one or more vaginal deliveries, and had no children.

The analysis of the association of behavioral variables with sexual dysfunction identified a significant association with the type of health service used, where women attended in the public service had a higher prevalence of sexual problems. Disagreeing with these findings, a study that aimed to verify whether there was a difference in the prevalence of sexual dysfunction and in the scores of the sexual function domains between a group of women treated in the public service and in the private service

revealed that there was no significant association and there were lower means in the private sector<sup>(19)</sup>.

Thus, future investigations are needed to understand the real reasons why pregnant women using the public service have a greater chance of having sexual dysfunctions. It should be investigated whether this result is related to sociodemographic factors such as educational level and income or if it is related to the quality of the service itself. Although women feel the need to talk and seek information about sexuality during pregnancy, they rarely have opportunities to clarify their doubts with health professionals<sup>(11)</sup>, whether in public or private services.

Thus, information about sexuality and possible causes of sexual dysfunction during prenatal care is extremely important and should be included in the nursing care plan for pregnant women, even if the woman does not specifically talk about the issue.

Later, the domains of sexual function were compared with the gestational trimesters and with parity. The analysis of the domains of sexual function with regards to the gestational trimesters showed a statistically significant difference for "Pain", with a worse result in the third trimester ( $p < 0.017$ ).

A study that aimed to assess the sexual function of women during the gestational period corroborated this study. It concluded that the only domain in which there was a difference between the gestational trimesters, being worse in the third one, was "Pain"<sup>(20-21)</sup>.

The fact that a significant difference was found in the third trimester regarding "Pain/discomfort" seems to find support in the scientific literature, since, at this stage, the body of the pregnant woman begins to prepare for childbirth, increasing uterine contractions, besides having a greater difficulty in finding a position for sexual intercourse with penetration<sup>(7,20)</sup>.

In the analysis of the influence of previous pregnancies in sexual dysfunction, nulliparous women presented lower averages in the domains "Desire", "Arousal", "Lubrication", "Orgasm", and in the total score of the scale, with a significant difference in the domains "Lubrication" and "Orgasm".

A positive result in the phases of sexual function (desire, pain, arousal, lubrication, and orgasm), assessed by the FSFI, depends on a series of personal and emotional stimuli. Thus, nulliparous women may be more vulnerable to emotional factors due to lack

of experience, fears, and anxieties related to the first pregnancy, which, possibly, may have contributed to the lower averages found in this group.

### Study limitations

The cross-sectional design can be considered a limitation of this study since it makes it difficult to establish causal relations. This situation increases the importance of making longitudinal and comparative investigations, which would allow further inferences about the associations between the variables studied and sexual dysfunction. Other limitation was the sample, which was not calculated to analyze the differences between gestational trimesters.

### Contributions to the field of Nursing, Health or Public Policy

This study contributes to the evaluation of sexual dysfunction among pregnant women and of the factors that can influence this situation. The identification of these factors is believed to contribute to the planning of professional actions, especially those of nurses who are caring for low-risk pregnant women. These results can also help promoting the sexual and reproductive health of pregnant women, guiding the investigation of this condition during the prenatal and interventions aimed at satisfying sexuality during pregnancy.

### CONCLUSIONS

It was concluded that the sociodemographic factors that may be associated with sexual dysfunction are "young pregnant women" and "low income". The obstetric and behavioral variables, on the other hand, had no significant association with sexual dysfunction, except for "type of service", meaning that women who use the public service were found to be more likely to have sexual dysfunctions during pregnancy than those using the private one.

The association of the domains of sexual function with gestational trimesters and parity showed a significant difference in the "Pain" domain, with worst results in the third trimester and worse means in the "Lubrication" and "Orgasm" domains among nulliparous women.

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