








## ORIGINAL ARTICLE

## Anxiety and depression among pregnant women attending a family health center: a cross-sectional study

### HIGHLIGHTS

1. 37% of pregnant women presented mild to moderate symptoms of anxiety.
2. 23% of pregnant women presented mild to severe symptoms of depression.
3. There was a connection between depression and the number of people in the household.

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### ABSTRACT

**Objective:** The purpose of this study is to confirm the prevalence of anxiety and depression in pregnant women who are undergoing prenatal consultations at a Family Health Unit in a northeastern Brazilian municipality. **Method:** A cross-sectional descriptive study was conducted with 81 pregnant women, utilizing a questionnaire that included both open-ended and closed-ended questions, as well as the Beck Anxiety Inventory and the Beck Depression Inventory. The data were analyzed using descriptive and inferential statistics. **Results:** The results indicated that 30 pregnant women (37%) had mild to moderate anxiety symptoms and 18 (23%) had mild to severe depression symptoms. There was statistical significance between depression and the number of people in the household ( $p=0.033$ ), as well as between anxiety and depression ( $p<0.001$ ). **Conclusion:** Considering the influence of mental illness on the pregnancy-puerperal cycle, it is critical to implement early interventions with validated tools to prevent mental/cognitive disorders and enhance pregnant women's quality of life.

**DESCRIPTORS:** Pregnant People; Anxiety; Depression; Prenatal Care; Family Health.

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## INTRODUCTION

Pregnancy is widely regarded by society as a natural stage in a woman's life. However, this period involves a series of hormonal, physical, psychological, family, and social changes, with the possibility of adjustments and restructuring in women's lives. These transformations have often created a scenario of vulnerability for pregnant women, a time that can accentuate emotional fragility and predispose them to the development of mental disorders. Among these conditions, anxiety, and depression stand out as the most common. If not recognized or treated appropriately during prenatal care, they can result in significant adverse consequences for both the mother's and the fetus's health<sup>1</sup>.

Prenatal consultations of poor quality, characterized by limited clinical listening, lack of mental health assessment, and absence of bonding between the pregnant woman and the health team, often neglect the early signs of these disorders, hindering timely interventions. Such neglect can culminate in worsening maternal mental health, increased risk of preterm birth, low birth weight, difficulties in mother-child bonding, and impaired child development. Additionally, the persistence of depressive or anxious symptoms after childbirth can hurt breastfeeding, maternal self-care, and parenting experience<sup>2</sup>.

Depression is characterized as a pathological condition marked by symptoms such as sadness, emotional imbalance, lack of pleasure, and low self-esteem, which affect both the mother and the child. This leads to significant social and family consequences such as marital problems, delayed child development, and psychological distress in the mother.<sup>3</sup> Anxiety, on the other hand, is an emotional state with physiological and psychological components that encompass various sensations, including fear and insecurity, increased alertness, and somatic and autonomic nervous system discomfort<sup>4</sup>. This reveals the importance of qualified consultations during prenatal care.

Prenatal depression has been a significant public health problem worldwide, with higher prevalence in low- and middle-income developing countries. Previous studies have reported rates of 27% in South Africa, 15.3% in Israel, and 10.3% in China<sup>5</sup>. In the United States, approximately 15% of pregnant women suffer from anxiety and depression disorders, and a large proportion are prescribed antidepressants<sup>6</sup>.

In the Brazilian context, scientific literature has pointed to varying prevalences of depression both during pregnancy and in the postpartum period, reflecting the methodological diversity of studies. It also highlights the sociocultural, economic, and healthcare specificities that characterize the reality of women in different regions of the country. In São Paulo, it ranged from 24% to 38.5%; in Rio de Janeiro, the prevalence was 18%; in Minas Gerais, the rate ranged from 12.5% to 33%; in the Federal District, it ranged from 15.47% to 52.5% in different studies, and in Goiás, it was 25.33%. In Rio Grande do Sul, the prevalence ranged from 20.5% to 21.6%. In Maranhão, the rate was 27.5%. In Sergipe, a prevalence of 28.9% was found<sup>7</sup>. Given the above, perinatal depression cannot be understood homogeneously, requiring a contextualized analysis that considers factors such as access to health services, social support networks, vulnerability conditions, and mental health history.

Signs of anxiety and depression during pregnancy, particularly mild symptoms, may be overlooked by healthcare professionals during prenatal assessments, as they are likely to be attributed to emotional changes caused by pregnancy hormones<sup>8</sup>. They may therefore not be identified during this period, preventing the initiation of psychosocial interventions to prevent or mitigate the adverse consequences associated with prenatal depression.<sup>9</sup>

Despite the relevance of the topic, there are gaps in the detection and management of these conditions in primary health care, especially during prenatal consultations, which often have a predominantly biomedical focus. Thus, the objective of this study was to verify the prevalence and factors associated with anxiety and depression in pregnant women who attended Family Health Units in a municipality in northeastern Brazil.

## METHOD

A descriptive cross-sectional study with a quantitative approach was conducted in the catchment area of a Family Health Unit in a city in northeastern Brazil. The study population consisted of 130 pregnant women registered at a Family Health Unit in João Pessoa, Paraíba, Brazil.

The study sample was non-probabilistic and convenience-based, consisting of 81 pregnant women registered at the FHU during the period from March to May 2019. Participants were included based on their availability and interest in participating in the research, meeting the inclusion criteria: being registered at a family health unit and being at any stage of pregnancy. Pregnant women diagnosed with severe and persistent mental disorders and using psychotropic drugs were excluded from the study.

Data collection took place during the prenatal consultations of pregnant women in a private and comfortable environment. The data collection instrument was a semi-structured questionnaire that included open-ended and multiple-choice questions, as well as a Likert scale, which allows for the quantification of responses. The Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI) were also used<sup>10</sup>.

The Beck BDI assesses symptoms of depression, containing 21 items, each with four possible responses that receive a score from zero to three, thus indicating the severity of the symptom. The BDI questions assess mood, pessimism, feelings of failure, self-dissatisfaction (linked to anhedonia and feelings of emptiness), feelings of guilt, punishment, self-disgust, self-accusation, suicidal or self-harming thoughts, crying, irritability, social withdrawal, body image, work difficulties, insomnia, fatigue, appetite, weight loss, body concerns, and loss of libido, where items 1 to 13 assess symptoms of a psychological nature, and items 14 to 21 assess physical symptoms, each with four alternatives, implying increasing degrees of depression severity, with response options (scale from 0 to 3)<sup>10</sup>.

The Beck Anxiety Inventory (BAI) also consists of 21 items that assess the intensity of physical and cognitive symptoms of anxiety experienced by the individual during the last week. Each item is scored on a four-point Likert scale: 0 (not at all), 1 (slightly anxious), 2 (moderately anxious), and 3 (extremely anxious). The maximum score is 63 points, categorized as follows: 0-10 (minimal symptoms), 11-19 (mild symptoms), 20-30 (moderate symptoms), and 31-63 (severe symptoms)<sup>10</sup>.

Data analysis was performed using the Statistics Package for the Social Sciences (SPSS) software, version 20. Descriptive data were presented as percentages (%), and all comparisons were made using Fisher's exact test. A significance level of  $p \leq 0.05$  was adopted. The results were presented in tables and subsequently discussed, taking into account the relevant literature.

The study complied with the ethical aspects of Resolution 466/2012, which approves the guidelines and regulatory standards for research involving human beings. It was approved by the Research Ethics Committee (CEP) of Faculdade Nova Esperança under opinion number 4.105.628 and CAAE: 08781919.9.0000.5179.

## RESULTS

It was observed that 47 (58%) pregnant women reported already having children, while 34 (42%) were in their first pregnancy. Regarding the history of abortion, 50 (61.7%) women reported never having had this experience, while 31 (38.3%) had already suffered at least one abortion. Regarding the clinical condition of the current pregnancy, 65 (80.2%) pregnant women were receiving prenatal care classified as low risk, with only 16 (19.8%) identified as high-risk pregnancies. Concerning pregnancy planning, unintentionality predominated: 53 (65.4%) participants stated that their current pregnancy was unplanned, highlighting the need to promote more effective counseling tools and strategies among the population.

In line with the data analysis in Table 1, the distribution of anxiety levels among pregnant women attending prenatal care is shown according to sociodemographic variables. It was observed that most participants had minimal symptoms of anxiety, regardless of the characteristics analyzed.

In the percentage analysis, it was found that anxiety was predominantly in the minimum classification with (n=51; 63%) participants aged 18 to 34 years (n=47; 64.4%), Catholic religion (n=27; 77.1%), high school education (n=28; 66.7%), monthly income of up to one minimum wage (n=34; 69.4%), single marital status (n=21; 67.7%), and number of people in the household between 2 and 4 people (n=27; 65.9%). Twenty (24.7%) pregnant women were identified as having mild anxiety, and 10 (12.3%) as having moderate anxiety. No women with severe anxiety were found.

In the relationship between depression and sociodemographic variables, it was found that pregnant women who live with their partner presented minimal anxiety in 49 (60%) cases, those who live with two to four people in 53 (65.9%) cases, and those who live with more than four people in 46 (57.1%) cases. In the percentage analysis, it was identified that the predominance of depression was in the minimal classification (n= 62; 76.5%) in the 18 to 34 age group (n= 58; 79.5%), Catholic religion (n= 30; 85.7%), higher education (n= 17; 81.0%), monthly income of up to one minimum wage (n= 38; 77.6%), single marital status (n= 27; 87.0%), and number of people living in the household with a partner (n= 26; 78.7%). Thirteen (16%) women were found to have mild depression, four (5%) had moderate depression, and two (2.5%) had severe depression, as shown in Table 2.

**Table 1.** Cross-analysis of sociodemographic variables with signs of anxiety in pregnant women at the USF Integrada Ipiranga. João Pessoa, PB, Brazil, 2024

ANXIETY						
VARIABLES	Minimum n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)	P
<b>Age group</b>						
15 – 17 years	2(50.0)	1(25.0)	1(25.0)	0(0.0)	100	0.559
18 – 34 years	47(64.4)	17(23.3)	9(12.3)	0(0.0)		
> 35 years	2(50.0)	2(50.0)	0(0.0)	0(0.0)		
<b>Religion</b>						
Catholic	27(77.1)	6(17.1)	2(5.8)	0(0.0)	100	0.124
Protestant	23(52.3)	13(29.5)	8(18.2)	0(0.0)		
Others	1(50.0)	1(50.0)	0(0.0)	0(0.0)		
<b>Education</b>						
Elementary School	10(55.6)	5(27.8)	3(16.6)	0(0.0)	100	0.587
High School	28(66.7)	11(26.2)	3(7.1)	0(0.0)		
Higher Education	13(62.0)	4(19.0)	4(19.0)	0(0.0)		
<b>Monthly income</b>						
Up to 1 minimum wage*	34(69.4)	11(22.4)	4(8.2)	0(0.0)	100	0.348
Between 1 and 2 salaries	15(51.7)	8(27.6)	6(20.7)	0(0.0)		
> 2 minimum wages	2(66.7)	1(33.3)	0(0.0)	0(0.0)		
<b>Marital status</b>						
Married	29(59.2)	16(32.7)	4(8.1)	0(0.0)	100	0.144
Single	21(67.7)	4(12.9)	6(19.4)	0(0.0)		
Other	1(100.0)	0(0.0)	0(0.0)	0(0.0)		
<b>Number of people in the residence</b>						
Lives with a partner	20(60.6)	9(27.3)	4(12.1)	0(0.0)	100	0.969
2 to 4 people	27(65.9)	9(22.0)	5(12.1)	0(0.0)		
More than 4 people	4(57.1)	2(28.6)	1(14.3)	0(0.0)		

Legend: (n=81); \*Minimum wage in force in 2019 (R\$998.00/US\$250.00).

Source: The authors (2019).

**Table 2.** Cross-analysis of sociodemographic variables with signs of depression in pregnant women at the USF Integrada Ipiranga. João Pessoa, PB, Brazil, 2024

DEPRESSION						
VARIABLES	Minimum n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)	P
<b>Age group</b>						
15 – 17 years	2(50.0)	1(25.0)	0(0.0)	1(25.0)	100.0	0.078
18 – 34 years	58(79.5)	10(13.7)	4(5.5)	1(1.4)		
> 35 years	2(50.0)	2(50.0)	0(0.0)	0(0.0)		
<b>Religion</b>						
Catholic	30(85.7)	4(11.4)	0(0.0)	1(2.9)	100.0	0.337
Protestant	30(68.2)	9(20.5)	4(9.1)	1(2.3)		
Others	2(100.0)	0(0.0)	0(0.0)	0(0.0)		
<b>Education</b>						
Elementary School	13(72.2)	5(27.8)	0(0.0)	0(0.0)	100.0	0.661
High School	32(76.2)	6(14.3)	3(7.1)	1(2.4)		
Higher Education	17(81.0)	2(9.4)	1(4.8)	1(4.8)		
<b>Monthly income</b>						
Up to 1 minimum wage*	38(77.6)	7(14.3)	3(6.1)	1(2.0)	100.0	0.915
Between 1 and 2 salaries	21(72.5)	6(20.7)	1(3.4)	1(3.4)		
> 2 minimum wages	3(100.0)	0(0.0)	0(0.0)	0(0.0)		
<b>Marital status</b>						
Married	35(71.4)	10(20.4)	2(4.1)	2(4.1)	100.0	0.110
Single	27(87.0)	2(6.5)	2(6.5)	0(0.0)		
Other	0(0.0)	1(100.0)	0(0.0)	0(0.0)		
<b>Number of people in the residence</b>						
Lives with a partner	26(78.7)	2(6.1)	3(9.1)	2(6.1)	100.0	0.033**
2 to 4 people	31(75.6)	10(24.4)	0(0.0)	0(0.0)		
More than 4 people	5(71.4)	1(14.3)	1(14.3)	0(0.0)		

Legend: (n=81); \*Minimum wage in force in 2019 (R\$998.00/US\$250.00); \*\*Significant association (Fisher's test).

Source: The authors (2019).

In the relationship between anxiety and depression, a significant association was found between the variables ( $p < 0.001$ ). It was found that depression in the minimum ( $n=76$ ; 94.1%) and mild ( $n=3$ ; 3.9%) classifications is associated with minimal anxiety. Furthermore, minimal depression is associated with mild anxiety ( $n=40$ ; 50.0%), as shown in Table 3.



**Table 3.** Relationship between anxiety and depression among pregnant women at USF Integrada Ipiranga. João Pessoa, PB, Brazil, 2024 (n=81)

VARIABLES	DEPRESSION					p
	Minimum n(%)	Mild n(%)	Moderate n(%)	Severe n(%)	Total n(%)	
<b>Anxiety</b>						
Minimum	76(94.1)	3(3.9)	0(0.0)	2(2.0)	100.0	<0.001*
Mild	41(50.0)	28(35.0)	8(10.0)	4(5.0)	100.0	
Moderate	32(40.0)	32(40.0)	17(20.0)	0(0.0)	100.0	
Severe	0(0.0)	0(0.0)	0(0.0)	0(0.0)	100.0	

Legend: \*Significant association (Fisher's test).  
Source: The authors (2019).

DISCUSSION

Depression and anxiety are common conditions during pregnancy, differing only in terms of severity, which may be related to a previous history of common mental disorders (anxiety, depression, and somatization), as well as socioeconomic characteristics<sup>4</sup>. Prenatal care is the period of monitoring that precedes childbirth, with one of its main objectives being to promote the healthy development of the pregnancy and, consequently, a healthy birth. These actions occur throughout the entire pregnancy to provide quality care and reduce maternal and perinatal mortality. They include preventive, educational, and therapeutic activities, and all of this care is important for the prevention of complications, early diagnosis of diseases, and treatments that may be necessary during this period<sup>11</sup>.

Depression is characterized as a pathological condition marked by aversion to commonly performed activities, sleep or appetite disturbances, and irritability, with repercussions on the person's behavior, health, and interpersonal relationships. Anxiety, on the other hand, is an emotional response to threatening or challenging situations, manifesting itself through feelings of apprehension, worry, or fear, usually proportional to the stimulus and of short duration. In contrast, anxiety disorder is characterized by excessive, persistent, and disproportionate concern about situations faced. Symptoms include restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbances, which persist for prolonged periods and often occur without an apparent cause. This condition significantly interferes with an individual's quality of life, affecting their social, occupational, and other important areas<sup>12</sup>.

A study describes that 10% to 15% of all pregnant women experience mild to moderate symptoms of anxiety and depression. The symptoms are generally similar to those that occur in depression at any other stage of a woman's life, such as lack of appetite and energy, and feelings of guilt<sup>13</sup>.

Regarding the distribution of obstetric characteristics of pregnant women assisted at the Family Health Unit studied, similar data were found in a study<sup>14</sup> where most pregnant women (77.7%) were in their second or subsequent pregnancies and had unplanned pregnancies (88%). Another study also indicated that most women were multiparous (60%) and had unplanned pregnancies (58%)<sup>15</sup>. Unplanned pregnancies can harm women's mental health, such as increased anxiety levels and risk of depression<sup>16</sup>.

Cross-referencing sociodemographic variables (age group, religion, education, monthly income, marital status, and number of people in the household) with signs of anxiety and depression in pregnant women revealed no association between these variables and anxiety, but an association between the number of people in the household and depression.

Regarding anxiety, it was found that most women fell into the minimum classification (Table 1). A divergent finding from this study indicates that 18.8% of pregnant women in prenatal care presented severe symptoms of anxiety and, as such, used significantly more inappropriate and less adaptive coping responses, such as self-blame and denial of reality, which remained associated with anxiety in the perinatal period<sup>6</sup>. Another study found that 30% of pregnant women did not present anxiety, 30% presented mild anxiety, 22% presented moderate anxiety, 16% presented severe anxiety, and 2% did not respond to the questionnaire<sup>13</sup>. These results are higher than those presented in this study. In line with the latest results and diverging from the figures in the present investigation, another study identified a prevalence of depressive symptoms of 20% and anxiety symptoms of 39%<sup>15</sup>. Similar data were found in another study, with the majority presenting minimal anxiety<sup>16</sup>.

About depression, it was found that the predominance was in the minimal and mild classifications. Four women were found to have moderate depression, and two had severe depression. In agreement with this, another study pointed to many women without depressive symptoms and with mild depression, as well as a smaller proportion with moderate and severe depression<sup>13</sup>. Another study found that many pregnant women have minimal depression<sup>16</sup>.

Depression has a considerable emotional impact, compromising both the mental and physical health of pregnant women, and has been identified as a risk factor for preterm placental abruption (PPA), which can also compromise fetal growth, thus increasing the risk of preeclampsia and preterm birth, reaffirming that intervention for depression should begin in the prenatal period<sup>17</sup>.

Pregnancy can be a stressful and anxiety-provoking life event. Consequently, anxiety, as a common mental disorder, can silently deteriorate women's health and is a relevant predictor associated with depression in pregnancy<sup>17</sup>.

It should also be emphasized that nurses need to provide comprehensive care during prenatal follow-up, addressing clinical and psychosocial issues, so that they can contribute significantly to interventions aimed at detecting and improving levels of anxiety and depression among pregnant women, thus contributing to the provision of quality prenatal care<sup>18</sup>. Prenatal care, defined as a set of simultaneously preventive, health-promoting, diagnostic, and curative actions, aims to provide this care with a view to a good pregnancy outcome<sup>19</sup>.

Given the data presented, a limiting factor of this study is the fact that most pregnant women fall within the minimum levels of anxiety and depression, preventing the identification of characteristics associated with severe cases.

However, the study encourages further research in different settings that could generate more heterogeneous data, potentially leading to the identification of additional associations. Furthermore, the topic alerts professionals working in prenatal care at Family Health Units to focus not only on the physiological characteristics of pregnancy but also on psychosocial factors, given that severe anxiety and depression can manifest themselves in pregnant women.



The limitations of the study include the fact that most pregnant women had minimal levels of anxiety and depression, which made it difficult to identify characteristics associated with more severe cases of these conditions. However, the aim of this study was achieved, contributing to future implications for the formulation of strategies or public policies aimed at the mental health of pregnant women.

## CONCLUSION

High-quality prenatal care systems should develop the capacity to assess and treat risk for depression and anxiety. Care providers should routinely screen using validated screening tools, provide resources focused on educational information about maternal mental health, and be aware of various multidisciplinary approaches that can facilitate treatment and better guide and refer cases when necessary.

This study found a representative rate of pregnant women attending primary care services who were experiencing mental illness with anxiety and depression. Professionals in prenatal care often neglect these conditions, as this approach focuses on the patient's needs, complaints, and biological changes. Considering the importance and repercussions of mental illness in the pregnancy and postpartum cycle, there is a reinforced need to implement simple, validated tools that can guide professionals in this approach to ensure immediate intervention in cases.

The adoption of practices focused on the prevention of common mental disorders is particularly relevant, intending to improve the quality of life of pregnant women by reducing the risks of complications related to childbirth and improving the health of women and children.

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