

# Anxiety and depression in pregnancy: a comparative study between early and late adolescents

## Ansiedade e depressão em grávidas: estudo comparativo entre adolescentes precoces e tardias

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### Abstract

**Objective:** To study anxiety and depression in pregnant adolescents. **Methods:** Cross-sectional study in which the Hospital Anxiety and Depression Scale (HADS) was used to evaluate the level of anxiety and depression among patients. The Beck Depression Inventory (BDI), which aims to measure the presence and severity of depression was also applied. 87 pregnant adolescents attended at a prenatal outpatient clinic of a public hospital participated in the study. They were divided into two groups: precocious adolescents (12 to 14 years of age) and late adolescents (15 to 19 years of age). The difference between the means was analyzed using the Student's t test. A value of  $p < 0.05$  was considered significant. **Results:** In relation to depression, the mean BDI score among the 23 precocious adolescents was 24.5, whereas among the 64 late adolescents, the same score presented a mean of 15.7 ( $p < 0.001$ ). According to the HADS, the precocious pregnant adolescents obtained an average of 8.9 (possible depression), whereas the late pregnant adolescents presented an average of 6.9 (unlikely depression) ( $p = 0.008$ ). **Conclusions:** Depression was more intense among precocious adolescents than among late adolescents. There was no significant difference in the intensity of anxiety, assessed by the HADS, between precocious and late adolescents.

**Key words:** Adolescence. Pregnancy. Anxiety. Depression

### Resumo

**Objetivos:** estudar depressão e ansiedade em adolescentes grávidas. **Métodos:** estudo transversal, em que se aplicou a Hospital Anxiety and Depression Scale (HADS) que avalia o nível de ansiedade e depressão entre as pacientes. Utilizou-se, também, a Escala de Depressão de Beck (BDI), que mede a presença e a gravidade da depressão. Oitenta e sete adolescentes grávidas atendidas em um ambulatório de pré-natal de um hospital público participaram do estudo. Foram divididas em dois grupos: adolescentes precoces (12-14 anos) e adolescentes tardias (15-19 anos). A diferença entre as médias foi analisada por meio do teste t de student. Um valor de  $p < 0,05$  foi considerado estatisticamente significativo. **Resultados:** em relação à depressão, a média do escore de Beck entre as 23 adolescentes precoces foi de 24,5, enquanto entre as 64 adolescentes tardias, o mesmo score apresentou uma média de 15,7 ( $p < 0,001$ ). Segundo a escala HADS, as gestantes adolescentes precoces obtiveram uma média de 8,9 (depressão possível) enquanto as gestantes adolescentes tardias apresentaram uma média de 6,9 (depressão improvável) ( $p = 0,008$ ). **Conclusões:** a depressão mostrou-se mais intensa entre as adolescentes precoces do que entre as adolescentes tardias. Não houve diferença significativa na intensidade da ansiedade, avaliada pela escala HADS, entre as adolescentes precoces e tardias.

**Palavras-chave:** Adolescência. Gravidez. Ansiedade. Depressão.

### INTRODUCTION

Adolescence is the transition phase between childhood and adulthood, characterized by physical and psychosocial transformations. In this phase, young people undergo changes in body image, values and lifestyle, moving away from the standards established by their parents and creating their own identity<sup>1</sup>.

Numerous causes may be involved in the occurrence of adolescent pregnancy, particularly unwanted or unplanned pregnancies. Among these, we highlight clinical, social, cultural, and emotional factors. Consequently, there are also changes in the life project of the adolescent, limiting or delaying the

possibility of engagement of these young people in society<sup>2</sup>.

Even in studies that problematize the negativity of pregnancy in adolescence, there are indications that the phenomenon, in some contexts, may constitute a factor of development protection. For some adolescents in situations of great social vulnerability, for example, the child may represent renewed perspectives for the present and for the future, which may be a personal protective factor for the adolescent mother<sup>3</sup>.

Anxiety is a psychological and physiological state that is part of the normal spectrum of human experiences. It is directed toward

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the future. It may present with sensations of tightness in the chest or in the throat, difficulty breathing, and weakness in the legs<sup>4</sup>. Anxiety in adolescence is related to deep transformations experienced that provoke a feeling of restlessness and self-estrangement. It is a frequent symptom in this stage of life and a warning signal in the face of a potentially threatening situation. Teenagers feel threatened due to the large number of changes that occur in their body; they feel threatened in relation to their parents, with constant conflicts of dependency/autonomy; and there is fear concerning their social and school life. These adolescents may have a risk behavior, consume alcohol and drugs, or engage in impulsive sexual behavior in an attempt to deny their fears<sup>5</sup>.

Depression is a public health problem that generates high costs, but it is treated with disregard by public health policy authorities. It is highly prevalent, being the most common mental disorder in primary care services, with a prevalence of 10% to 20%, and it can affect any age group. It is a disabling disease that compromises physical health and limits the activities of the affected individuals<sup>6</sup>.

Prevalence of gestational depression is approximately 15% among developed countries and approximately 22% in developing countries. It is associated with a previous history of psychiatric disorder, sociodemographic characteristics (low income), single or separated marital status, unplanned pregnancy, teenage pregnancy, obstetric complications, smoking, alcoholism, stressful events (e.g., theft and robbery), and an absence of social support<sup>7</sup>.

Sabroza et al. investigated 1228 mothers aged 12 to 19 years in the municipality of Rio de Janeiro and found a prevalence of 26.8% for intense psychological distress.<sup>8</sup> Investigating psychological disorders in 120 pregnant adolescents aged 14 to 18 years in Piracicaba (SP), Freitas and Botega identified a prevalence of 23.3% for anxiety and 20.8% for depression<sup>9</sup>.

The low number of studies on depression and anxiety in pregnant adolescents, particularly in the Northeastern region of Brazil, motivates the present study, whose objective is to study the presence and intensity of depression and anxiety in pregnant adolescents and to compare depression and anxiety between precocious adolescents and late adolescents.

## METHODS

This research is an observational, cross-sectional and analytical study. Considering an estimated prevalence of 6% of depression in women, a 95% confidence level, and a maximal sampling error of 5%, the sample size was 87 participants. Included in the study were pregnant adolescents up to 19 years of age, in any trimester of gestation, who were seen from August to December 2017 at the Marly Sarney Maternity Prenatal Outpatient Clinic in São Luís – MA - Brazil. For better accuracy, all data were collected by a single researcher. For purposes of analysis, the participants were divided into two groups: precocious adolescents (10 to 14 years old) and late adolescents (15 to 19 years old). The study

did not include adolescents with cognitive problems or without the ability to respond to the questionnaire.

The patients were approached in the waiting room of an outpatient clinic and then invited to participate in the research.

The Hospital Anxiety and Depression Scale (HADS) was used to assess the level of anxiety and depression among the patients<sup>10</sup>. This scale was translated into Portuguese and validated by Botega et al. in 1995<sup>11</sup>. The score of this instrument ranges from 0 to 21 points (0-7 unlikely, 8-11 possible, 12-21 likely). The Beck Depression Inventory (BDI),<sup>12</sup> whose purpose is to measure the presence and severity of depression among patients, validated in Portuguese by Gorenstein and Andrade<sup>13</sup>, was also used. Its result ranges from 0 to 63 points, and the higher the score is, the worse the depression (0-13 minimum, 14-19 mild, 20-28 moderate, 29-63 severe).

The data were organized and analyzed using the Stata 12.0® (Stata Corp, College Station, TX, USA) statistical software. The quantitative variables are presented as means and standard deviations, and the qualitative variables are presented as percentages. The difference between the means observed between the groups was analyzed using Student's t test. A value of  $p < 0.05$  was considered significant.

This project was submitted and approved by the Research Ethics Committee of the Ceuma University (Universidade CEUMA; CAAE 34400714.0.0000.5084). All participants, and their legal representatives when they were under 18, were informed about the purpose of the research and signed the Free and Informed Consent Term (TCLE), prepared in accordance with the recommendations of Resolution 466/12.

## RESULTS

The study population was composed of 87 pregnant adolescents with a mean age of 16.09 years (12-19 years old); it was divided into two groups: precocious adolescents (10-14 years old) and late adolescents (15-19 years old). The percentage of precocious adolescents in this study was 26.4% ( $n=23$ ), whereas the proportion of late adolescents was 73.6% ( $n=64$ ).

Among the sociodemographic findings, the school dropout rate stands out. 35.6% of adolescents stopped attending school during pregnancy. Sociodemographic characteristics and clinical aspects of pregnancy are shown in Table 1.

Analyzing the mean scores for anxiety among pregnant adolescents using the HADS, a mean of 11.3 was found among precocious adolescents and 10.6 among late adolescents. Both age groups were classified as presenting possible anxiety, and there was no significant difference between them ( $p = 0.468$ ).

Regarding to depression, both scales showed a difference between two groups of adolescents. The mean BDI score among the 23 precocious adolescents was 24.5 (moderate depression), whereas among the 64 late adolescents, the same

score presented an average of 15.7 (mild depression) ( $p < 0.001$ ).

**Table 1.** Socio-demographic and clinical characteristics of pregnant adolescents in São Luís, 2017 (n=87)

Variables	N	%
Maternal age		
Precocious adolescents (12-14)	23	26.4
Late adolescents (15-19)	64	73.6
Marital status		
Married/stable union	32	36.8
Gainful employment		
Yes	11	12.6
Education		
Dropped out of school during pregnancy	11	12.6
Smoking during pregnancy		
Yes	3	3.5
Parity		
Primiparous	77	88.5
Hypertension		
Yes	16	18.4
Diabetes		
Yes	2	2.3
Anemia		
Yes	2377	46.95

According to HADS, the precocious pregnant adolescents had a mean of 8.9 (possible depression), whereas the late pregnant adolescents presented a mean of 6.9 (unlikely depression) ( $p = 0.008$ ).

The results for anxiety and depression scores are shown in Table 2.

**Table 2.** Anxiety and depression between pregnant precocious and late adolescents in São Luís, 2017 (n=87)

Pregnant adolescents	N	p
		Anxiety HADS*
Precocious adolescents	23	11.3
Late adolescents	64	10.6
		p=0.468
		Depression BDI#
Precocious adolescents	23	24.5
Late adolescents	64	15.7
		p<0.001
		Depression HADS†
Precocious adolescents	23	8.9
Late adolescents	64	6.9
		P=0.008

\* Mean of anxiety scores using the Hospital Anxiety and Depression Scale (HADS)

# Mean for depression scores using the Beck Depression Inventory (BDI)

† Mean of depression scores using the Hospital Anxiety and Depression Scale (HADS)

## DISCUSSION

Pregnancy is an important risk factor for the development of anxiety and depression, particularly if it occurs in the teenage years. In the present study, the analyzed population was composed of 87 pregnant adolescents, and the proportion of late adolescents was higher than that of precocious adolescents.

It is worth noting the scarcity of studies that associate precocious and late pregnant adolescents with anxiety and depression.

Analyzing the mean scores of the anxiety scores among pregnant adolescents using the HADS, it is observed that both precocious adolescents and late adolescents are classified with a degree of possible anxiety and that there is no significant difference between them. Many authors consider anxiety to be a symptom that is common to all pregnancies. Donelli et al found a 20% prevalence of anxiety symptoms during pregnancy<sup>14</sup>. When analyzing 120 pregnant adolescents from 14 to 18 years old using the HADS, among other instruments, to assess anxiety, Freitas and Botega<sup>9</sup> found a result similar to that of the present study. The presence of anxiety in these adolescents did not present a significant difference between the groups of the three gestational trimesters, and this symptom was found in 23.3% of the pregnant adolescents.

Comparing depression with the results obtained in the BDI and the HADS, a significant difference is observed in both scores, with depression being more present in the precocious adolescents than in the late adolescents in both questionnaires.

In a study conducted in Rio de Janeiro, it was observed that the frequency of depression tends to be higher among pregnant adolescents than in adult pregnant women, with depression being a frequent mental disorder in adolescence and an important risk factor for its development in this phase of life<sup>2</sup>. A study conducted in Juiz de Fora found an association of low schooling with the occurrence of depression in women, which may corroborate the findings of this study, where 35.6% of adolescents stopped attending school during pregnancy<sup>15</sup>.

In a study with pregnant adolescents using the BDI, Baseggio<sup>16</sup> found that 62.5% of the patients were at a minimum level of depression and 37.5% at a mild level. These results indicate a 100% prevalence of depression symptoms in minimal and mild degrees, with no evidence of moderate or severe depression. This result is similar to that for the late adolescents (16-19 years) in the present study because they also show mild depression when evaluated by the BDI.

In a study of 110 adolescents between 10 and 19 years of age, Pereira and Lovisi<sup>7</sup> used, among other instruments, the Composite International Diagnostic Interview (CIDI, version 2.1), which evaluates depression through a structured diagnostic interview. The prevalence of depression in this study was 14.2%, lower than the rates found in other studies. This difference can be explained by the different instruments used in the evaluation of the disorder. For example, the BDI and the

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HADS may find a higher prevalence, which can be explained by the high frequency of depressive symptoms in the general population.

A study conducted by Fontoura and Pergher<sup>17</sup> used a population of 30 adolescents between the ages of 13 and 18, of whom 15 were teenage mothers, and reported that teenage mothers had higher rates of depression and anxiety than adolescents without children. This study also reported that the risks of the onset of depression and anxiety symptoms increase during pregnancy and that the situation becomes more critical after childbirth.

A study conducted in Juiz de Fora considered the differentiation of pregnancy in adolescence into two age groups to be relevant for analyzing the incidence of some risk factors such as mortality, low birthweight, and prematurity in two groups of adolescents (10-14 and 15-19 years of age). This study demonstrated that

the incidence of these risk factors is higher in adolescent mothers 10-14 years of age<sup>18</sup>. Similarly, in the present study, precocious adolescents are more likely to develop disorders such as depression and anxiety.

This study has some limitations. The cross-sectional design did not allow conclusions about the risk of the studied outcomes, indicating only association between maternal age and depression. Furthermore, although the number of studied patients was appropriate, the precocious adolescents group was not represented by optimal numbers of individuals; some of the associations could therefore potentially reach significance in larger samples. Future longitudinal studies will be needed to clarify this cause-and-effect relationship. Because of the lack of studies about this subject, this study adds essential information about a subject that is poorly understood, particularly in the northeastern region of Brazil.

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