

**SYMPTOMS OF ANXIETY IN MOTHERS OF PREMATURE NEWBORNS  
ADMITTED TO A NEONATAL INTENSIVE CARE UNIT****SINTOMAS DE ANSIEDADE EM MÃES DE RECÉM-NASCIDOS PREMATUROS  
INTERNADOS EM UNIDADE DE TERAPIA INTENSIVA NEONATAL****SÍNTOMAS DE ANSIEDAD EN MADRES DE RECIÉN NACIDOS PREMATUROS  
INGRESADOS EN LA UNIDAD DE CUIDADOS INTENSIVOS NEONATALES**

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**ABSTRACT**

**Objective:** to identify the symptoms of anxiety and state of anxiety in mothers of newborns admitted to the Neonatal Intensive Care Unit and to verify the influence of sociodemographic, economic and behavioral variables on these symptoms. **Method:** Observational and cross-sectional study. Participants were 50 mothers, from October/2017 to October/2018. The State-Trait Anxiety Inventory was used. The score was assessed by means and medians. **Results:** The anxiety scale or mean score was 50.1 points and the median was 51.0 points. Some variables did not show association; however, the variable age presented it. In trait anxiety, the mean score was 44.9 points and the median was 44.5 points. The same variables did not show any association with the highest score. **Conclusion:** The participants had scores for the symptoms of anxiety and maternal age that were associated with the higher score of the state of anxiety. It is essential to early identify these symptoms, aimed at mother and the entire family context well-being.

**Descriptors:** Mental Health; Anxiety; Women's Health; Nursing.

**RESUMO**

**Objetivo:** identificar os sintomas de ansiedade-estado e ansiedade-traço, em mães de recém-nascidos internados em Unidade de Terapia Intensiva Neonatal e verificar a influência de variáveis sociodemográficas, econômicas e comportamentais sobre esses sintomas. **Métodos:** Estudo observacional e transversal. Participaram 50 mães, entre os meses de outubro/2017 a outubro/2018. Foi utilizado o Inventário de Ansiedade Traço-Estado. O escore foi avaliado pelas suas médias e medianas. **Resultados:** Na escala de ansiedade-estado o escore médio foi 50,1 pontos e mediana de 51,0 pontos. Algumas variáveis não apresentaram associação, porém, a variável idade apresentou. Na ansiedade-traço, o escore médio foi de 44,9 pontos e mediana de 44,5 pontos. As mesmas variáveis não apresentaram associação com maior escore. **Conclusão:** As participantes apresentaram escores para os sintomas de ansiedade e a idade materna esteve associada ao maior escore da ansiedade-estado. É fundamental a identificação precoce desses sintomas visando o bem-estar da mãe e de todo contexto familiar.

**Descritores:** Saúde Mental; Ansiedade; Saúde da Mulher; Enfermagem.

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## RESUMEN

**Objetivo:** identificar los síntomas de ansiedad por estado y ansiedad por rasgos en madres de recién nacidos ingresados en la Unidad de Cuidados Intensivos Neonatales y verificar la influencia de las variables sociodemográficas, económicas y de comportamiento en estos síntomas. **Métodos:** estudio observacional y transversal. Participaron cincuenta madres, de octubre/2017 a octubre/2018. Se utilizó el Inventario de ansiedad de estado de rasgos. La puntuación se evaluó por sus medios y medianas. **Resultados:** en la escala de ansiedad estatal, la puntuación media fue de 50,1 puntos y la mediana fue de 51,0 puntos. Algunas variables no estaban asociadas, sin embargo, la variable edad estaba asociada. En el rasgo de ansiedad, la puntuación media fue de 44,9 puntos y la mediana fue de 44,5 puntos. Las mismas variables no se asociaron con una puntuación más altas. **Conclusión:** los participantes obtuvieron puntajes para los síntomas de ansiedad y la edad materna se asoció con el puntaje más alto del estado de ansiedad. La identificación temprana de estos síntomas es esencial para el bienestar de la madre y el contexto de toda la familia.

**Descriptor:** Salud Mental; Ansiedad; Salud de la Mujer; Enfermería.

## INTRODUCTION

The World Health Organization (WHO) has established that newborns (NB) are considered premature every baby born before 37 complete weeks of gestation. It is known that in Brazil the prevalence of premature births represents about 9% of the total births in the country, which appears in 10th place in the world ranking.<sup>1</sup>

In view of prematurity condition, the mother needs to adapt to the baby's instability process and eventual painful situations, resulting from care in the Neonatal Intensive Care Unit (NICU) that may generate feelings of sadness, suffering and anguish, which may increase the mother's anxiety levels, leading to greater psychological problems.<sup>2</sup>

International studies have identified the presence of psychological distress in mothers of premature newborns, with

anxiety symptoms of 26.5% and 32% among participants.<sup>3-4</sup>

Regarding the process of maternal coping with the baby's admission to the NICU, most mothers report bad feelings, including sadness, fear and hopelessness.

Mothers of preterm infants, when going through these negative experiences, may have a feeling of helplessness, feeling inadequate for the role of mother. All of that generate feelings of deep sadness and depression, which can have negative impacts on mothers' mental health and negative effects on child's development.<sup>5</sup>

It is necessary to discuss the problems associated with maternal health, as the feeling of sadness and stress experienced by them affects the entire family context, and the support of trained professionals is essential<sup>6</sup>; thus, enabling emotional support to mothers, contributing to the acceptance

of the situation of the newborn and in the restructuring of the personal routine.<sup>7</sup>

In this sense, this study aims to identify the presence of symptoms indicative of anxiety among mothers of premature newborns admitted to the NICU and to verify factors that may have an influence with these symptoms.

It is believed that, in addition to the issue of preterm newborn hospitalization, sociodemographic, economic and behavioral factors may also influence the symptoms of anxiety among mothers.

Studies on the identification of these symptoms in this specific population have not yet been exhausted in the scientific literature, especially in the national one, requiring research that contributes to the knowledge and clarification of this issue.

One considers the subject of this work to positively affect the care provided to mothers of newborns hospitalized in the NICU, in addition to subsidizing and providing a reflection on the health team's own work process, as well as its role in comprehensive care with a view to the newborn and his/her mother/family. Such assistance, through joint, articulated and integrated actions aims at improving the mental health of these mothers who need a personal and family structure to face this moment.

The actions of the health team working in this area provide daily contact and bond with the mothers of preterm newborns, factors that can be fundamental to identify, refer and reduce complications related to their mental health.

According to the above, the objectives of the study were: to identify symptoms of state-anxiety and trait-anxiety in mothers of newborns admitted to the Neonatal Intensive Care Unit and to verify the influence of sociodemographic, economic and behavioral variables on these symptoms.

## **METHOD**

This is an observational, cross-sectional study. Fifty mothers of preterm newborns admitted to the Neonatal Intensive Care Unit (NICU) of a clinical hospital, located in a city in the interior of Minas Gerais, participated in the study, from October 2017 to October 2018.

The following criteria were used: mothers of preterm newborns (less than 37 weeks of gestation) admitted to the NICU for more than 30 days; over 18 years old and who agreed to participate in the study.

In order to participate in the study, all mothers of preterm newborns admitted to the NICU, who met the inclusion criteria, were considered. A data collection period of one year was considered.

The interviews were conducted at the NICU, after a month of preterm newborn hospitalization, in a reserved place to ensure secrecy and privacy. Weekly lists were given with the names of all children hospitalized in the sector, and within the inclusion criteria, mothers were invited to participate in the study. Those who agreed to participate formalized their consent by signing the Free and Informed Consent Form.

In order to check anxiety symptoms, the State-Trait Anxiety Inventory (STAI) was used. It consists of two scales that measure two concepts of anxiety: anxiety-state (STAI-E) and anxiety-trait (STAI-T). The Anxiety-State scale is composed of 20 questions that indicate how the individual feels at the moment. Each of the items on these scales is assigned a score of one to four, and the total score can vary from 20 (minimum) to 80 (maximum), on each scale. Answers 1, 2, 3 and 4 are assigned values 4, 3, 2, 1, respectively.<sup>8</sup> Some items were scored inversely. In the STAI-State, the inverted items are: 1, 2, 5, 8, 10, 11, 15, 16, 19 and 20 and in the STAI-Trait, the items are 1, 6, 7, 10, 13, 16 and 19.

In the present study, the sum score of the participants' points in the STAI-State and STAI-Trait was considered.

The instruments used were tested, validated for the Portuguese language and

used in researches with similar objectives. It should be noted that the aforementioned instruments do not diagnose this disorder and that there was no separation of women with a previous diagnosis of anxiety.

The data were entered into an electronic spreadsheet, using the EXCEL® program. Subsequently, statistical analysis was performed using the Statistical Package for Social Science (SPSS) for Windows version 20.0 software.

In the univariate data analysis, the distribution of absolute (n) and relative (%) frequencies was performed for qualitative variables; mean values and standard deviations and maximum and minimum values for quantitative variables. In the bivariate analyzes, the t-Student test was used. For all tests, a 95% confidence interval (CI) and a level of 5% significance were considered.

The variables used in the bivariate analyzes were: marital status: this variable was classified as “lives with a partner”, in two categories: “yes”; “not”. Children: this variable was classified as “has more children”, in two categories: “yes”; “not”. Pregnancy planning: this variable was classified into two categories: “yes”; “not”. Education: this variable was classified into two categories: “less than eight years of study”; “More than eight years of study”. Age: this variable was classified into two categories: “under 35 years old” and “over 35 years

old”.

The research was approved by the Research Ethics Committee of the Federal University of Triângulo Mineiro (CAAE 63723617.1.0000.5154).

## RESULTS

The mothers participating in the study had a mean age of 27.22 years, a standard deviation (SD) of 7.53 and a median of 25.0 years. The minimum age was 18 years and the maximum was 42 years. The participants declared themselves to be white (36%), married or in a stable union (76%) and home (50%).

Regarding education, the average was 10.2 years of study, (SD = 2.9) and median of 11.0 years of study. The study time ranged from one to 16 years. With regard to family income, the average was 2.5 minimum wages (SD = 1.5) and a median of

two. Ranging from zero to eight minimum wages. The family provider was the partner (34%) and both (34%). The majority stated that they did not smoke (98%), did not use other drugs (100%) and had other children alive (58%). Among the interviewees, the majority (58%) reported not having planned the pregnancy.

On the state-anxiety scale, the average score of the interviewees was 50.1 points (SD = 11.14) and median of 51.0 points, with a range between 26 and 69.

In the bivariate analysis, the variables: living with a partner, education, having other children and planning pregnancy were not associated with a higher score of symptoms of anxiety-state, however, the variable age ( $p = 0.042$ ) was associated with a higher score of symptom of state anxiety, (Table 1).

Table 1, below, shows the bivariate analysis of the variables, according to the score of symptoms of anxiety-state.

**Table 1.** Comparison of variables and the score of symptoms of anxiety-state in mothers of premature newborns. Uberaba-MG, 2017-2018.

VARIABLES	IDATE-State Average	Standard deviation	P*
<b>Lives with a partner</b>			0.54
Yes	49.66	8.556	
Not	51.50	10,122	
<b>Education</b>			0.68
Less than eight years of study	48.92	11,277	
More than nine years of study	50.47	11,220	
<b>Have other children</b>			0.75
Yes	50.45	7,985	
Not	49.62	10,181	
<b>Pregnancy was planned</b>			0.34
Yes	47.00	8.355	
Not	52.34	8.707	
<b>Age</b>			<b>0.042</b>
Less than 35 years	51.53	8.686	
Over 35 years old	45.58	8.273	

\**p*-value for Student *t* test.

The average score of the interviewees on the trait anxiety scale was 44.9 points (sd = 10.0) and median of 44.5 points, with a range between 23 and 64.

In the bivariate analysis, the

variables: lives with partner, education, having other children, pregnancy planning and age were not associated with higher score of trait anxiety symptoms, (Table 2).

**Table 2.** Comparison of variables and score of trait anxiety symptoms in mothers of premature newborns. Uberaba-MG, 2017-2018.

VARIABLES	STAI-Trait Average	Standard devia- tion	P*
<b>Lives with a partner</b>			0.39
Yes	44.21	9,427	
Not	47.08	11,820	
<b>Education</b>			0.29
Less than eight years of study	47.58	9,718	
More than nine years of study	44.05	10.065	
<b>Have other children</b>			0.16
Yes	46.59	9,515	
Not	42.57	10,414	
<b>Pregnancy was planned</b>			0.12
Yes	42.33	9,123	
Not	46.76	10,346	
<b>Age</b>			0.52
Under 35	45.42	9,630	
Over 35 years old	43.25	11,389	

\**p*-value for Student *t* test.

## DISCUSSION

Research data carried out in Natal / RN, with 70 mothers of premature newborns, the authors identified symptoms of state-anxiety with a median of 50.0 points ranging from 26.0 to 74.0 and trait anxiety with a median of 46, 0 ranging from 26.0 to 79.0.9 Results that are in line with those obtained in the present study, showing the presence of trait-anxiety and state-anxiety in mothers of premature newborns.

In a study carried out using IDATE, with 60 mothers of preterm newborns admitted to Hospital das Clínicas in Ribeirão Preto / SP, the authors showed that with the division of two groups formed by 30 mothers with emotional indicators of anxiety and depression, and another composed of 30 mothers without the presence of these indicators. In the first group, the anxiety-state score was 58.8 and trait anxiety 55.20. In the second group, the score for state-anxiety was 41.33 and trait-anxiety 40.63.10 Although, in the present study, there was no separation or prior identification of mothers with indicators of anxiety symptoms, it is clear by the study carried out in Ribeirão Preto, that the moment these mothers meet can put them at greater risk of presenting symptoms of anxiety,

A study was carried out with 32 mothers of premature newborns admitted to the NICU of the University Hospital of Chieti /

Italy, with the objective of assessing levels of anxiety and depression. There was a state anxiety score of 41.75 and trait anxiety of 38.68 points. Being that 31.2% of mothers had intermediate level of anxiety-state and 54.8% had intermediate level for trait anxiety.11

In another international survey using the STAI, with the aim of investigating anxiety symptoms in the mothers of preterm babies during discharge from the NICU, found results inferior to the present study, with an average score of 33.8 points, with 27% of mothers with moderate trait anxiety.12 In relation to the present study, a lower score of anxiety symptoms was found in relation to the international studies presented.

Other international studies have shown the prevalence of anxiety symptoms in these mothers ranging from 44.4% to 75%. 13-15

In a study on stress and anxiety among mothers of premature babies in Malaysia, the authors identified that 85% of respondents had high levels of state-anxiety, while 67.8% high levels of trait-anxiety. 16

In the present study, it was evident that the highest anxiety score was related to state anxiety. This fact is justified due to the current scenario experienced by these mothers, where strong emotional experiences become routine during this period of hospitalization.

In a study that aimed to investigate the association between maternal depression and anxiety symptoms and losses in the mother / child relationship, the authors identified that anxiety symptoms and maternal age were not associated with the mother / child relationship.<sup>18</sup>

It is noteworthy that the variable maternal age (under 35 years old), in the present study, was associated with a higher score of symptoms of anxiety-state. Perhaps, the greater maternal age, may be a factor that justifies this result, since the mother's maturity or previous experiences related to motherhood may be related to a lower score of symptoms of state anxiety. However, this fact does not minimize the feelings affected by her, in the face of a moment of stress and anxiety resulting from having a premature child hospitalized. It is believed that hospitalization of the newborn is a major factor for the presence of anxiety symptoms among mothers.

In the present study, other factors were not associated with a higher score of symptoms of state and trait anxiety.

It is concluded by the several studies presented that there is a high prevalence and scores associated with anxiety symptoms among mothers of hospitalized premature infants. Therefore, as evidenced in a qualitative study, the lack of interactivity between the hospitalized mother-premature

baby binomial can generate feelings of disability, guilt, anxiety and depression.<sup>19</sup>

It is believed that the results of this research can contribute to the reflection of this problem. The health team has a fundamental role in this issue. The identification of symptoms of psychic illness at the moment experienced by these mothers favors appropriate referral and follow-up, in order to avoid several consequences for their quality of life.

Health professionals should always remember that these mothers who live the daily dilemma between life and death / the health and illness of their children, often also need to be cared for and guided.

Teamwork, with the elaboration of specific action plans aimed at assisting the mental health of mothers of premature newborns is essential and should be part of the work of health professionals.

It should be noted that a gap was observed with regard to national studies related to anxiety symptoms in mothers of premature newborns using the State-Trait Anxiety Inventory. It is pertinent to carry out research, in order to deepen these issues and bring new reflections on this theme.

## CONCLUSION

The results revealed that the research participants had scores for anxiety symptoms. The state-anxiety score was higher

than the trait-anxiety score and maternal age was associated with the highest state score.

This study is expected to contribute to the understanding of anxiety symptoms and their relationship with variables within the hospital environment with mothers of premature infants admitted to the NICU.

It is a topic of great importance, but with little approach in the literature. It is also emphasized the importance of the health team to identify the presence of these symptoms early, ensuring social and psychological support, intervening in the necessary way, through appropriate referral, aiming at the well-being of the mother and the entire family context .

The study's limitations were: it is a cross-sectional study, and it cannot infer causality; number of losses, due to the discharge of babies before completing thirty days of hospitalization and the difficulty in finding some mothers in the unit, during the times available for data collection.

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