Anxiety and depression symptoms assessment in pre-term neonates' mothers during and after hospitalization in neonatal intensive care unit

Avaliação de sintomas de ansiedade e depressão em mães de neonatos pré-termo durante e após hospitalização em UTI-Neonatal

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Abstract

Objective: *To identify clinical level of anxiety, dysphoria and depression symptoms of pre-term infants' mothers between two moments, during and after hospitalization in Neonatal Intensive Care Unit (NICU).*

Methods: *Previously, mothers with psychiatric background were excluded of the study. Forty-three pre-term and very low birthweight infants' mothers were assessed through State-Trait Anxiety Inventory and Beck Depression Inventory. The assessments were done during and after hospitalization, respectively.*

Results: *In the first assessment, 44% mothers showed clinical level in one or more of the emotional symptoms, such as anxiety, dysphoria or depression. After infants´ discharge, the number of mothers with clinical level of emotional symptoms decreased significantly (26%) in comparison of the first assessment ($p \leq 0.008$). The anxiety-state level decreased significantly from the first to the second assessment (from 35% to 12%; $p \leq 0.006$). No difference in depression and dysphoria symptoms between two assessments were found.*

Conclusion: *The pre-term infants' mothers presented situational anxiety and required emotional support to cope with the infants' hospitalization.*

Keywords: *Anxiety; Depression; Mood disorders; Infant, premature; Neonatal intensive care units.*

Resumo

Objetivo: *Identificar sintomas em nível clínico de ansiedade, disforia e depressão em mães de neonatos pré-termo, comparando dois momentos, durante e após a hospitalização do bebê em Unidade de Terapia Intensiva Neonatal (UTIN).*

Métodos: *43 mães de neonatos pré-termo de muito baixo peso, sem antecedentes psiquiátricos, foram avaliadas através dos Inventários de Ansiedade Traço-Estado e de Depressão de Beck. Foram realizadas duas avaliações, uma durante a hospitalização do bebê e outra após a alta hospitalar.*

Resultados: *Na primeira avaliação, 44% das mães apresentaram sintomas clínicos de ansiedade, disforia e/ou depressão. Após a alta hospitalar do bebê, houve redução significativa do número de mães (26%) com esses sintomas clínicos em relação à primeira avaliação ($p \leq 0{,}008$). Os níveis de ansiedade-estado diminuíram significativamente da primeira para a segunda avaliação (de 35% para 12%; $p \leq 0{,}006$). Não foi detectada diferença significativa entre as duas avaliações quanto aos demais sintomas clínicos.*

Conclusão: *As mães de bebês pré-termo apresentaram ansiedade situacional e necessitam de suporte psicológico para enfrentar a internação do bebê.*

Descritores: *Ansiedade; Depressão; Transtornos do humor; Recém-nascido prematuro; Unidades de terapia intensiva neonatal.*

Introduction

The premature birth of an infant is a distressing event for the family, which has to face with an unpredictable and anxiogenic situation. Due to the conditions of organic instability of the infant and the need of specialized medical care provided in Neonatal Intensive Care Units (NICU), the family experiences the separation from the premature infant and the uncertainty about its clinical evolution and survival.[1-2] Added to these difficulties, there is the distortion of the infant's 'ideal image', created by the family, in contrast with the real image of the premature infant; the family has to reorganize its imaginary framework as to readapt it to the image of a very tiny and fragile infant.[3]

In this context, the levels of anxiety and the feelings of sadness and melancholy may be exacerbated upon this conflicting and distressing situation. In a study performed with parents of babies hospitalized at a NICU high levels of anxiety, depression and

hostility were observed, revealing problems of psychosocial adjustment of their parents.[4] According to Pinelli,[2] family adjustment or the capability to perform changes in the family system when facing a distressing event, in order to keep its equilibrium and functioning, is related to the family's internal and social resources and to its strategies to face up with the situation during the hospitalization of the infant at a NICU. Mothers, in turn, have higher levels of anxiety and depression than fathers.[2,4-5]

Anxiety levels tend to decrease after the discharge of the infant.[5] However, the high levels of anxiety and depression experienced by mothers provoke medium-term effects on the quality of the future interaction between the mother and the child.[6-7]

The current study aimed to identify the presence of symptoms of clinical anxiety, dysphoria and depression in a group of mothers of preterm and very low birth weight infants and to compare them at two different moments, i.e., during the infant's hospitalization in a Neonatal Intensive Care Unit (NICU) and after hospital discharge.

Method

1. Participants

The initial sample was composed by 90 mothers of and very low birth weight infants hospitalized at the NICU and at the High-Risk Nursery of the sectors of Neonatology and Gynecology and Obstetrics of the Clinical Hospital of the Faculty of Medicine of Ribeirão Preto of the University of São Paulo - FMRP-USP, from March 2001 up to June 2002. From this sample, 32 mothers were excluded due to: having psychiatric antecedents,[6] being illiterate, being HIV-positive, having post-delivery clinical complications or death of their babies. Of the 58 remaining mothers, 15 refused or gave up to participate in the study. The final sample had 43 mothers.

Regarding the main characteristics of the sample, mothers had median age of 23 years, being 65% of them mothers for the first time, 49% had completed Elementary School (first to eight grades) and 51% had no remunerated work outside of the home. Babies, in turn, had a mean gestational age of 28 weeks and mean Apgar score of the 5th minute of 9 points. Mean stay at the NICU was 26 days (Table 1).

2. Instruments and measures

The following instruments were used: 1) SCID/Non-Patient – Structured Clinical Interview for DSMIII – R;[9] 2) STAI – State-Trait Anxiety Inventory[10] including two subscales: Trait-Anxiety and State-Anxiety. In the subscale anxiety-state, mothers were requested to think about the situation of the premature child in the first assessment and in the situation after the infant's discharge in the second assessment; 3) *BDI – Beck Depression Inventory.*[11]

3. Procedure

After approval by the institution's Ethical Committee and the informed consent of participants, the SCID/Non-Patient was applied by one researcher (3rd author), in order to exclude mothers with psychiatric antecedents. Next, the first assessment of anxiety and depression symptoms during the infant's hospitalization period was performed, using STAI and BDI. After the infant's discharge,

Table 1 – Characteristics of mothers and neonates

Variables	Values
Mothers' variables	
Age in years - median (variation range)	23 (14 – 43)
Schooling - frequency (percentage)	
1st to 4th grades (Elementary School)	7 (16%)
5th to 8th grades (Elementary School)	15 (35%)
High school inconclued	9 (21%)
High school conclued	11(26%)
College inconclued	1 (2%)
Occupation - frequency (percentage)	
Student	5 (12%)
No worker	22 (51%)
Non-qualified*	7 (16%)
Low qualification*	6 (14%)
Medium qualification*	3 (7%)
Mother for the first time - frequency (percentage)	28 (65%)
Neonates' variables	
Gestational age in weeks - mean (standard deviation)	28 (± 2.86)
Apgar of the 5th minute - mean (standard deviation)	9 (± 1.36)
Time of hospitalization at the NICU in days - mean (standard deviation)	26 (± 24.14)

** Classification according to Soares and Fernades:[8] Non-qualified: Not necessary a minimal schooling level and remuneration at the minimum wage level; Low qualification: Minimal schooling level (elementary school), manual work not required and some specific professional training; Medium qualification: Elementary school and some additional study, absence of manual work and higher status than the previous forms.*

mothers were reassessed. The tests were alternately applied in the respective evaluations. Assessments were accomplished by the first author. The assessment of the sample's characteristics was performed through consultation to the medical charts.

The assessment instruments were corrected according to the tests' rules and it was performed the identification of scores related to clinical symptoms of anxiety, dysphoria and depression. With STAI, the criterion used was a cut-off score equal to or above the 75th percentile. Utilizing the BDI, in turn, we used the suggested criteria for non-diagnosed patients, i.e., dysphoria >15 and depression >20.[12]

Firstly, we verified the distribution of mothers according to the scores indicating clinical symptoms of anxiety, dysphoria and depression, and quantified the number of mothers who had scores indicating clinical symptoms in one or more assessment scales. Next, we verified the distribution of mothers regarding the scores indicating clinical symptoms particularly considering each specific scale (State-Anxiety, Trait-Anxiety and Dysphoria/Depression). The results of the two assessments (during the infant's hospitalization at the NICU and after hospital discharge) were compared using Mc Nemar test for matched samples.

Spearman correlations between the scores in the STAI and BDI, respectively, and maternal variables (age, schooling and number of children) and the infant's variables (gestational age, hospitalization time at NICU and Apgar score of the 5th minute) were calculated.

SPSS 10.1 version was used for the statistical treatment data. The significance level of p ⩽ 05 was established.

Results

In the first assessment, 44% of the mothers had scores indicating clinical symptoms regarding anxiety, dysphoria or depression; 23% of mothers had scores indicating clinical symptoms in only one of the scales and 21% in more of one scale.

In the second assessment, after the infant's hospital discharge, there has been a significant decrease in the number of mothers with scores indicating clinical symptoms in at least one of the scales applied, compared to the first assessment performed during the infant's hospitalization (from 44% to 26%; p ⩽ 008).

Table 2 displays the distribution of mothers according to the scores indicating clinical symptoms in the specific scales of state-anxiety, trait-anxiety and dysphoria/depression, found in the two assessment moments.

There has been a significant decrease in the number of mothers who had scores indicating clinical symptoms of state-anxiety from the first to the second assessment, performed after the infant's hospital discharge. However, there was no significant difference between both assessments regarding the scores in the trait-anxiety and dysphoria/depression scales.

In order to verify possible influences of counfounding variables in the results, we performed correlations between the scores in the two subscales of the STAI and in the BDI and the maternal variables (age, schooling and number of children) and the infant's variables (gestational age, time of hospitalization at a NICU and Apgar of the 5th minute), respectively. There were no significant correlations between anxiety and depression scores and the different variables analyzed.

Table 2 – Clinical symptoms of Anxiety (State/Trait), maternal dysphoria or depression, assessed during the infant's hospitalization (1st assessment) and after hospital discharge (2nd assessment): frequency and percentage of mothers (n = 43)

Maternal clinical symptoms	1º assessment		2º assessment		P value
	During hospitalization (n = 43)		After hospital discharge (n = 43)		
	f	(%)	f	(%)	
Anxiety-State	15	(35%)	5	(12%)	0.006*
Anxiety-Trait	7	(16%)	8	(19%)	1.000
Dysphoria or Depression	11	(26%)	9	(21%)	0.625

** $p < 0.05$*

Discussion

During the hospitalization of the infant at the NICU, 44% of the mothers had scores indicating clinical symptoms of anxiety, dysphoria and/or depression, suggesting emotional problems which demand attention provided for these patients by the mental health area. These data are similar to that found in the literature.[4-5] Scores indicating clinical symptoms occurred both alone (score indicating clinical symptoms in only one of the scales) in 23% of the mothers and combined (scores indicating clinical symptoms in more than one scale) in 21% of the mothers. The score indicating clinical state-anxiety was predominant on mothers among those assessed during the infant's hospitalization at the NICU.

After the babies' hospital discharge, there was a significant decrease in the number of mothers who showed scores indicating clinical symptoms of anxiety, dysphoria and/or depression. Considering the maternal scores indicating clinical symptoms in each of the specific scales, there was a significant decrease in state-anxiety from the first to the second assessment. In one study[5] performed with parents of premature babies with bronchodysplasia it was observed that anxiety-state levels decreased significantly after the infant's hospital discharge, wich corroborates the findings of the present study.

There were no significant correlations between the scores in the anxiety and depression scales and the maternal variables such as age, schooling and number of children and the infant's variables such as gestational age, time of hospitalization at the NICU and Apgar of the 5th minute. Therefore, the significant decrease in the number of mothers who showed scores indicating clinical levels of state-anxiety after hospital discharge seems to be more related to a decrease in the concern about the infant's survival than to the mother's and the infant's characteristics or to the hospitalization

context. State-anxiety experienced by mothers in the current study seems to be, therefore, linked to a transient emotional state marked by unpleasant feelings of tension and apprehension in reaction to the hospitalization of the infant at the NICU.

At the same time, we verified that there was no significant difference in the number of mothers who had scores indicating clinical trait-anxiety, from the first to the second assessment. Trait-anxiety symptoms are related to individual differences, to relatively stable personality traits, to the trend of reacting with increase in state-anxiety with regard to situations perceived by the subject as threatening.[10] Considering thus the trait-anxiety construct, it was expected that trait-anxiety subscale scores would not have significant alterations along time. Nevertheless, it cannot be ruled out that those mothers are a risk group, as they have a higher trend to react anxiously in face of stressing situations, such as that represented by the infant's hospitalization.

There was no significant difference between the first and the second assessment regarding the number of mothers who had scores indicating clinical dysphoria or depression. The clinical improvement of the infant and the subsequent hospital discharge seemed to have not relieved these clinical symptoms in 21% of the mothers, a group who needs psychological support for the adaptive coping regarding the infant's hospitalization at the NICU, as well as to prevent future problems related to the interaction between mother and child, as highlighted by Feldman et al.[7]

Conclusion

The findings of this study reinforce the importance of assessing and giving support to the maternal feelings, in the way between the birth of the preterm infant and hospital discharge. The clinical assessment allows the identification of mothers with higher difficulty in this process of adaptive confrontation with the situation of psychological distress, enabling thus the planning and execution of an appropriate preventive psychological intervention.

Future research may be oriented to find some study issues, such as: verifying the influence of the psychological support received by mothers at the NICU, comparing the findings of mothers of prematures with those of fullterm infants and assessing the effects of the clinical symptoms of anxiety, depression, in the medium-term, in the trajectory of the development of the premature infants.

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