EVALUATION OF THE STRESS LEVEL OF PRETERM MOTHERS IN A UNIVERSITY HOSPITAL[1]

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ABSTRACT
The stress of mothers of Preterm Newborns (PTNB) provides great insecurity concerning the care towards their infant. Assessing the stress level of these mothers facing the prematurity contributes to propose appropriate nursing interventions that help to develop the healthy maternal self-confidence and also the interaction with the infant. The objective was to identify the stress level of mothers of PTNB hospitalized in the Neonatal Intensive Care Unit (NICU). This is a quantitative research, developed in the NICU of a University Hospital, that used the Parental Stressor Scale: Neonatal Intensive Care Unit (PSS:NICU), validated in Brazil in 2009, with 20 mothers from April to July, 2014. Some analyses were carried in the program XLStat 2014, the level of significance for all the tests were 0,05. This tool measures the stress in three subscales: sounds and images; infant's behavior and appearance, and alteration in the parental role. The stress level found was very high (3,8), mainly in the subscale alteration of the parental role (4,3). PSS:NICU is an effective tool to evaluate the stress, demonstrating that younger, primipara and with extreme PTNB mothers are more vulnerable. They must receive a special look at their needs enlarging the competency and maternal security when providing care towards the infant.

Keywords: Psychological Stress. Mother. Neonatal Intensive Care Unit. Preterm Newborn.

INTRODUCTION

According to the World Health Organization (WHO) there are about 15 million infants who are born preterm every year[1]. Brazil presents 279,3 thousand premature births every year, totalizing 9,2% among the live births[1]. This index also reflects on the infant mortality rate, which has shown that the prematurity is the greater cause of deaths in the first week of life of a newborn (NB), being responsible for 28,7% of such deaths[2].

In the last three years it has been observed an increase of the survival rate of the Preterm Newborn (PTNB). The factors that provide the greater survival of these NB would be the technological improvement of the Neonatal Intensive Care Units (NICU), the science discoveries for the treatment of the prematurity problems and the specialization of human resources that work in the NICUs[3]. In this context, the health teamwork and the NB parents are involved, more particularly the mothers, who are commonly the main caregivers.

The experience of the child's hospitalization generates a feeling of anguish on the parents, given the uncertainty regarding the survival of the PTNB; the doubts about the treatment and routine of the unit; fear of not being able to take care of such a fragile baby, among other feelings. This situation is a stressor during the period of hospitalization of their children[4]. However, each father/mother reacts in a particular way to this stress, and some of them develop positive coping mechanisms and others have more difficulty, something that can lead to the post-traumatic stress disorder. Many times the health team of the NICU has some difficulty to understand the different reactions of the parents facing the experienced stress situation. In this sense, "as part of this psychological

regression, a mother needs to feel secure, restrained and looked after. When this need is not fulfilled, a woman can feel abandoned, lonely and insecure"[5:106].

Considering that the maternal stress is pointed as a risk factor for the growth and development of the infant, and it can lead to inadequate weight gain and deficit of the motor and behavioral progress[6], helping the mother to understand what happens with their infant and to identify their needs towards the situation will contribute to fulfill their demands as well as the infant's[7]. Consequently, reducing the maternal stress level provides the security and self-confidence of the mother to take care of the infant in the NICU and Intermediate Care Unit (IMCU) and after being released from this unit.

Then, it is fundamental to evaluate the maternal stress level in the NICU/IMCU using the structured tools. This way, this research suggests the use of the scale of measurement of the parental stress level developed by American nurses, named *Parental Stress Scale: Neonatal Intensive Care Unit* (PSS:NICU) and recently validated in Brazil [8], called Parents Stress Scale in the NICU but, this is still little known in the country.

This way, this study has the aim of identifying the stress level of mothers of PTNB who are hospitalized in the Neonatal Intensive Care Unit and Intermediate Care Unit in a university hospital in Paraná, Brazil.

METHODOLOGY

It is an observational study, with quantitative approach, that evaluates if there is an association between a certain factor and an ending without, however, interfering directly in the analyzed relation [9]. In this research, the independent variable being analyzed is the prematurity, and the dependent variable is the maternal stress facing the prematurity.

The site of the study was the Intensive Care Unit and the Intermediate Care Unit of the Hospital Universitário do Oeste do Paraná (HUOP). In the NICU of the University Hospital the average of admission/year is 350 children, from which 80% are PTNB, who keep in the unit for 68 days on average[10].

The population of the study was all the mothers who had PTNB admitted to the NICU/ICMU, through the period of April to July 2014, and the sample of the study was constituted of 20 mothers of PTNB according to the calculation of the program *Gpower* 3.1. For this sample the significance level was 0,05, a size of great effect (0,8) and statistical power of the sample 0,95.

It was considered able for the study the mothers who had their PTNB infants hospitalized in the admission units (NICU and ICMU) and who suited the following criteria: having premature infants, with 36 weeks of gestational age (GA) or less; adolescent mother with a legal representative and living in the urban area of the city of Cascavel. Mothers who were psychiatrically or physically ill; mothers who reported continuous use of drugs for anxiety or depression; mothers who were drug users; premature infants who died during the period of hospitalization and illiterate mothers were excluded, as the tool of data collection is self-filled.

The data collection tool was primarily composed with data for the characterization of the study sample, containing variables about the clinical data of the PTNB and social-demographical data of the parents. The data for the characterization of the PTNB was collected from the infant medical record: gestational age, weight, gender, APGAR, complications during hospitalization (sepsis, neonatal necrotizing enterocolitis, hyaline membrane disease, intraventricular hemorrhage and others) and treatments during the hospitalization period (mechanical ventilation, noninvasive oxygen, phototherapy, exchange transfusion, surgical procedures and others). In relation to the parents, the variables were: age and maternal schooling, marital status, current mother's occupation, number of children besides the PTNB, age of children, family income, age and father's schooling and their current occupation. The second part of the data collection tool was the scale PSS:NICU, which was developed by Miles; Funk and Carlson in 1993, in the United States and it measures the stress in the newborn intensive care environment under the analyzes of 26 items distributed in three subscales, as follows: sounds and images; appearance and

infant's behavior and alteration of the parental role. This scale can be applied through an interview or in the self-applicable way. The stress classification is given through a Likert-type scale, in which the punctuation is between 1 and 5, and "1" indicates non stressful; "2" a little stressful; "3" moderately stressful; "4" very stressful and "5" extremely stressful[8].

The social-demographical variables were analyzed in relation to the absolute and relative frequencies of each category for the sample characterization. The scores of the tool domains PSS:NICU were evaluated through a descriptive statistics (minimum, maximum, average and standard deviation).

The variable data was normalized and, after, analyzed through the principal component analysis (PCA), after the verification of the data quality by the method Kaiser-Meyer-Olkin (KMO test). The evaluation of the correlation between the variable matrixes was assessed through the Barlett's test of spherecity. With the PCA it was possible to determine the explanatory variables for each evaluated mother, and they were defined *a priori* due to the income, which was calculated in National Minimum Wage (MW) (>1 MW; 1 to 3 MW; more than 3 MW).

The minimum scores of the tool domains PSS:NICU were compared in relation to the maternal age (mother <19 years old, mother between 20 and 29 years old, mother >=30 years old), gestational age of the infant (GA= >28weeks, GA -29 to 31 weeks, GA=<32) and treatment in the Neonatal ICU (Mechanical Ventilation – MV; MV+Oxygen Therapy – O2) through the Single Factor Analysis of Variance, after checking the data distribution patterns (Shapiro-Wilk Normality Test) and the homogeneity of variance (Test of Levene). In cases of statistical significance of the Variance Analysis (p<0,05), the Tukey monitoring test was carried out. All the analysis was performed in the program XLStat version 2014.

This research was approved by the Ethics Committee of the Universidade Estadual do Oeste do Paraná (CEP - UNIOESTE), with approval under the number 385.370 following the resolution 466/2012.

RESULTS AND DISCUSSION

The great part of the mothers participating in the research (8 - 40%) were aged between 20 and 29 years old, being characterized as young adults, 5 (25%) were adolescents. Concerning the schooling, 11 (55%) mothers studied from 5 to 9 years old, and 8 (40%) were formal workers and 7 (35%) were housewives. This data is similar to the parturient profile and their premature newborn who were assisted in a school hospital in the northeast of Paraná[11]. National and international studies found that most of the mothers of PTNB are aged from 20 to 34 years old[12, 13].

Most mothers was primipara (n=8; 40%) and the ones who were in the second or more gestations mostly had children aging more than five years old. Concerning the age of fathers, 8 (40%) were between 20 and 24 years old; most fathers (14; 70%) had studied more than 10 years. A great part of the fathers' sample was formal workers (13; 65%). In relation to the marital status, 17 couples (85%) had stable union, with the familiar income between 1 to 3 minimum wages (13; 65%). This data showed that the mothers of PTNB had some social support from their spouse, as well as some financial stability as most of them had formal jobs and greater levels of paternal schooling.

However, the familiar income for 5 (25%) of the mothers is less than a minimum wage, and we can consider that these mothers have low purchasing power and they are more socially vulnerable, something that can predispose them to potentially risky situations, as well as their newborns. The premature mothers profile and the characterization of the live births are influenced by the social and economical conditions in which they are inserted, as well as these same conditions will certainly influence in the future quality of life of the NB, and it is a contributing factor for the high indexes of infant mortality[12]. In this perspective, although this percentage with minor social economical power does not represent the majority of the studied sample, this data should be considered in the planning of the actions towards the PTNB health since their admission and if it is longer after the hospital release.

Regarding the gestational age, 15 (75%) PTNB were born between 29 and 36 weeks,

from which 8 (40%) are very premature, in other words, those who are born between 28 and 32 incomplete weeks of GA and 7 (35%) are moderate and late premature, considered those between 32 to 36 weeks of GA[14]. Similar data is found in the Brazilian research, in which 68,4% of 163 newborn hospitalized at NICU had gestational age of up to 36 weeks and 7 days[15], as well as in an American study in which 67% of the hospitalized PTNB were very premature[16].

Concerning the clinical complications, 7 (35%) PTNB presented septicemia, indicating that this is the main factor that puts the premature infant at risk during their hospitalization in the NICU. Furthermore, referring to the invasive and noninvasive ventilatory support, 100% of the participants of the research needed some or both treatments during their admission. The found data meets the literature, in which we can observe that about 50 to 60% of the hospitalized PTNB sample need ventilatory support[13,17].

In the evaluation of the maternal stress level during the hospitalization according to the domains sounds and images, infant's behavior and appearance and alteration of the parental role, it was observed that the mothers presented stress level classified as very stressful, once the average of the total score was 3,6 or 4 (statistically rounded value). This score diverges from what was observed in a national study[8] and in another international one[18], in which a total score of 3 was found, considered moderately stressful (Table 1).

The analysis of the subscales of this tool showed that the stress is raised in the subscale 'Alteration of the parental role' with an average of 4,3. Regarding studies involving the scale PSS:NICU, researchers[18] checked that American mothers were more worried about the infant's appearance than the fact of changing their mother's role. However, in a Brazilian study[15] in which 163 mothers and fathers were interviewed, it was also found the alteration of the parental role as the greater stressor in the NICU, with an average of 3,7. Other international studies[19,20] showed that the higher score of stress was also related to the alteration of the parental role, and the main alterations were related to the experiences such as anxiety, depression and fatigue.

Table 1. Maternal stress level during the hospitalization according to the domains sounds and images, infant's behavior and appearance and alteration of the mother's role, 2014.

Sample	N	Minimum	Maximum	Average	Standard Deviation (n-1)
Sounds and Images	20	1,0	4,7	2,8	1,1
Infant's behavior and appearance	20	1,0	4,8	3,6	1,2
Alteration of the parental role	20	1,5	5,0	4,3	1,0
General Score	20	1,2	4,8	3,6	1,0

Source: Database of the research, 2014.

In order to evaluate the multiple relation of variables about the stress levels in the domains PSS:NICU, it was carried the principal components multivariate analysis (PCA). For this, it was checked that the variables: age, maternal schooling, number of children, Gestational Age at birth and the subscales were according to the assumption of the application of the PCA, once the value of the KMO test was higher than (KMO=0,535) (Table 2). The correlation between the variable matrixes was considered significant (Barlett test χ^2=53,03, p<0,0001).

According to the Broken-Stick criterion it was possible to assume two principal components considered as significant in the analysis. In Table 3, the factor loading of the principal components of the scale in relation to the maternal stress level is observed.

The two first factors of the Principal Components Analysis (PCA) presented an accumulated variability of 63,906% (Autovalues F1=2,696; F2=1,777). The first canonical axis (F1) applied to the variables (38,5 % of the variability) was named Maternal Experience (ME) and it denotes the relation between the age of the mother and the scores of the domains Sounds and Images, Infant's behavior and appearance and Alteration of the mother's role in the scale PSS:NICU. These variables presented an inverse correlation, in other words, the older the mother, the lower the stress level will be in these domains. It was also observed the direct

relation between the Age of Mother and Gestational Age of the NB, and it is possible to analyze that the older mothers presented the NB at a greater gestational age, and therefore, lower stress levels in the analyzed domains.

Table 2. Index of KMO in relation to the maternal schooling, number of children and GA of the PTNB and the stress levels in the domains of the PSS:NICU, 2014.

Variables	KMO
Maternal age	0,505
Maternal schooling	0,346
Number of children besides the PTNB	0,466
Sounds and Images	0,657
Infant's behavior and appearance	0,554
Alteration of the parental role	0,600
Gestational Age	0,438
KMO	**0,535**

Source: Database of the research, 2014.

The second axis was named Maternal Knowledge Level (MKL) and it explains the Maternal Schooling, Number of children besides the PTNB and Gestational Age (25,4% of the variability). It is possible to note that the woman with greater schooling present a lower number of children, as well as infants with lower gestational ages.

The number of children besides the PTNB was also another considered variable, in other words, the lower number of children, the greater the stress experienced by the interviewed mothers is. Similar data was found in a study[21] in which the stress level was related to the parents' age, and the highest stress level was found in the group of younger parents.

Table 3. Factor loadings of the principal components analysis of the relative variables, study of the stress levels in mothers who had their infants admitted in the NICU/IMCU, 2014.

| Variables	ME	MKL
Age of mother	**-0,6904**	0,3929
Sounds and Images	**0,7907**	0,2507
Infant's behavior and appearance	**0,9479**	0,1403
Alteration of the parental role	**0,7517**	0,4318
GA	**-0,1783**	**0,2276**
Maternal schooling	0,1243	**-0,7314**
Number of children besides de PTNB	-0,2891	**0,8758**

Source: Database of the research.

Concerning the family income, there was not a correlation between the analyzed categories (incomes equivalent to >3MW and 1 to 3 MW) and the variation of stress among the subscales. In picture 2, the correlation between the stress level per subscale PSS:NICU and the variables age and maternal schooling, number of children and family income is shown.

In order to assess the significance of the analysis previously presented, it was performed the comparison of the stress values of the subscales in relation to the age group of the evaluated mothers. In Table 4, in the subdomain Sounds and Images, the women aging less than 19 years old or older/equal to 30 years old were considered with stress values similar among themselves, but lower than the observed values among young adult mother aging between 20 to 29 years old. This data can be explained due to the mothers who are younger than 19 years old present a defensive response and the older ones have greater experience with the maternity and feel more secure when managing the PTNB in the ICU environment. Mothers aging about 30 years old have a more established social net, and can, therefore, have a lower stress level during their infant admission in the NICU[21].

Regarding the subscale Infant's behavior and appearance, both young adult mothers aging 20 to 29 years old and the adolescent ones, suffer a higher impact facing the appearance and behavior of the newborn, while the mothers aging 30 years old or more have a distinct value showing a lower stress level. When analyzing the alteration of the maternal role, independently from age, all of them showed alterations and higher stress in this domain. The found information in this study meets other ones[15,19,21].
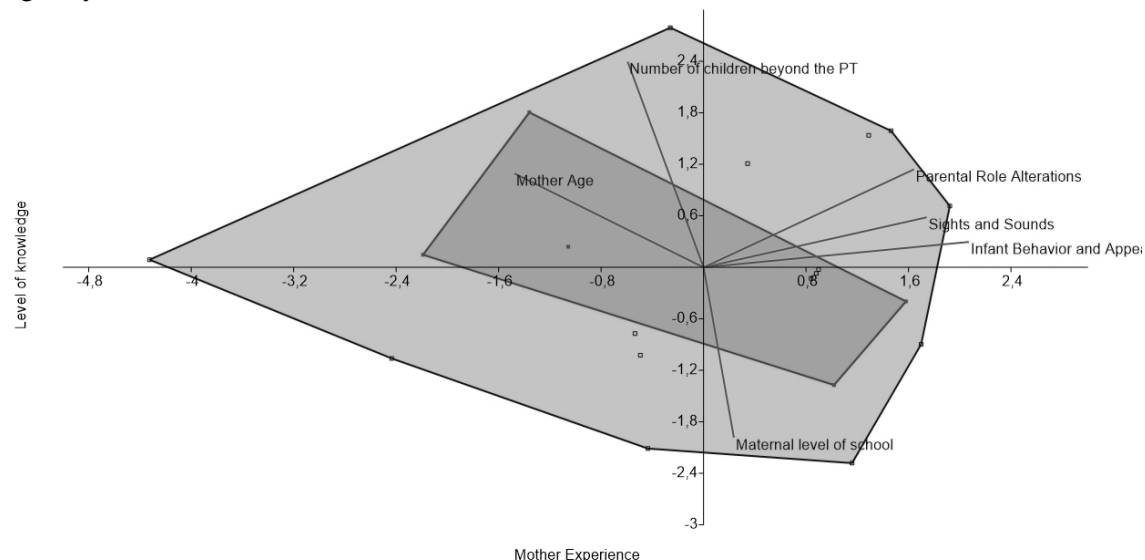
Picture 2. Ordination diagram representing the two first axis of the PCA for the relative variables for the maternal stress level, showing the descriptors (vectors) and different income levels (light gray: >3MW; dark gray: 1 to 3 MW).

We can say that the maternal stress is linked to the mother experience during the infant hospitalization in units of neonatal care, however, after a premature labor other aspects influence in the stress level that are not only the maternal preoccupations about the child's health, but also preoccupations about their own health, their life conditions and their role in the family, as well as the lack of social support or the distance from their house to the hospital and single mothers[22]. These difficult situations can lead to a psychological suffering that can be expressed as depression, anxiety and/or post traumatic stress[22]. We highlight that, however, these aspects were not measured in this study, indicating the need to associate the use of the scale PSS:NICU with the association between the maternal stress levels and the mentioned aspects.

Table 4. Scores of the stress level in each domain and the maternal age, 2014.

Variable	n	Sounds and Images		Infant's behavior and appearance		Alteration of the maternal role	
		Average	DP	Average	DP	Average	DP
Age of mother-<19	5	15,6[b]	3,8	48,0[a]	10,9	28,0[a]	8,2
Age of mother-20 a 29	8	20,4[a]	6,0	52,5[a]	13,4	34,1[a]	1,5
Age of mother->=30	7	11,1[b]	7,2	27,4[b]	14,4	24,0[a]	10,9
P		0,029		0,005		0,060	

Source: Database of the research. The symbology represented by the letters a and b shows that the found values are equivalent or different.

After identifying the maternal stress levels in this study, it is emphasized that the nursing team who remains 24 hours together with the NB who are hospitalized in the NICU, it is the nurse and their team responsibility to give attention to the family and be capable of helping them to face their fears and insecurities, doubts, desires and obstacles that can harm the way they cope with the infant's admission[23], contributing for the reduction of the maternal stress level.

Considering the fact that the maternal depression and anxiety have a negative correlation with the results of development and growth of the PTNB[6] and in this situation, parents present great search for the health services after the hospital release[24], the NICU teamwork must provide the mother-infant-family interaction during the hospitalization, offering greater security for the mother concerning the care of the infant, beyond only the technical care. For this, providing some care focused on the emotional and psychological needs, both for the PTNB and their mother/family. In this context, evaluating the parents' stress must be a preoccupation during the hospitalization in the NICU, as well as after this unit's release, a moment when the PTNB should be included in the services of Primary Attention to Health[24].

CONCLUSIONS

This study's mothers presented an elevated stress level, mainly in the subscale 'Alteration of the mother's role'. Besides, it was possible to verify that the increase of stress was related to a lower age of the mother, the ones with a lower number of children and, still, the relation between the age of mother and the gestational age of the NB (younger mother and with NB at lower gestational age), being the main factors that promoted the increase of the stress levels.

We can conclude that the application of the Parental Stress Scale PSS:NICU is possible to happen, and can be used as a tool to identify the stress level of mothers of PTNB in Brazilian units of neonatal care. The use of this tool provides the development of focused and efficient interventions, aiming to reduce the stress of parents in these units, helping to cope with the stressor situation, as well as offering greater maternal security and consequently promoting a positive impact on the quality of life of the PTNB after being released from hospital. Using tools such this in the study, the healthcare professionals, mainly the nurses, can contribute for the reduction of the stress experienced during the hospitalization of these preterm newborns and their mothers. However, the PSS:NICU must be tested in other regions of the country to increase its reliability, widening and varying the sample to confirm the validation made by Brazilian authors and its efficiency in the measurement of maternal stress.

AVALIAÇÃO DO NÍVEL ESTRESSE DE MÃES DE PRÉ-TERMO EM HOSPITAL UNIVERSITÁRIO

RESUMO

O estresse de mães de Recém-Nascidos Prematuros (RNPT) propicia maior insegurança no cuidado ao filho. Avaliar os níveis de estresse dessas mães diante da prematuridade contribui para propor intervenções de enfermagem adequadas que contribuam para aumentar a autoconfiança materna e interação com o filho. Objetivou-se identificar o nível de estresse de mães de RNPT hospitalizados na Unidade de Terapia Intensiva Neonatal (UTIN). Estudo quantitativo, desenvolvido na UTIN de um hospital universitário, que aplicou a escala de mensuração de estresse - *Parental Stressor Scale: Neonatal Intensive Care Unit* (PSS:NICU), validada no Brasil em 2009, à 20 mães de abril a julho de 2014. Análises foram realizadas no programa XLStat 2014, nível de significância assumido em todos os testes foi igual a 0,05. Este instrumento mede o estresse em três subescalas: sons e imagens; aparência e comportamento do bebê e alteração do papel dos pais. O nível de estresse encontrado foi elevado (3,8), principalmente na subescala alteração do papel dos pais (4,3). PSS:NICU é ferramenta válida para avaliar o estresse, demonstrando que mães mais jovens, primíparas e com RNPT extremos são mais vulneráveis. Deve-se ter um olhar distinto para suas necessidades ampliando a competência e segurança materna ao prover o cuidado ao filho.

Palavras-chave: Estresse Psicológico. Mães. Unidades de Terapia Intensiva Neonatal. Recém-nascidos Prematuros.

EVALUACIÓN DEL NIVEL DEL ESTRÉS EN MADRES DE PRETÉRMINO EN HOSPITAL UNIVERSITARIO

RESUMEN

El estrés de madres de Recién Nacidos Prematuros (RNPT) propicia mayor inseguridad en el cuidado al hijo. Evaluar los niveles de estrés de estas madres delante de la prematuridad contribuye para proponer intervenciones de enfermería adecuadas que colaboren para aumentar la autoconfianza materna y la interacción con el hijo. El objetivo fue identificar el nivel de estrés de madres de RNPT hospitalizados en la Unidad de Cuidados Intensivos Neonatal (UCIN). Estudio cuantitativo desarrollado en la UCIN de un hospital universitario,

que aplicó la escala de evaluación de estrés - *Parental Stressor Scale: Neonatal Intensive Care Unit* (PSS:NICU), validada en Brasil en 2009, con 20 madres, de abril a julio de 2014. Los análisis fueron realizados en el programa XLStat 2014, el nivel de significación asumido en todas las pruebas fue igual a 0,05. Este instrumento mide el estrés en tres subescalas: sonidos e imágenes; apariencia y comportamiento del bebé y alteración del papel de los padres. El nivel de estrés encontrado fue muy estresante (3,8), principalmente en la subescala alteración del papel de los padres (4,3). PSS:NICU es una herramienta válida para evaluar el estrés, demostrando que madres más jóvenes, primíparas y con RNPT extremos son más vulnerables. Se debe tener otra visión para sus necesidades, ampliando la competencia y la seguridad materna al proveer el cuidado al hijo.

Palabras clave: Estrés Psicológico. Madres. Unidad de Terapia Intensiva Neonatal. Recién Nacido Pre termino.

REFERENCES

1. Maranhão AGK, Vasconcelos AMN, Porto DL, França E. Mortalidade infantil no Brasil: tendências, componentes e causas de morte no período de 2000 a 2010. In: Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Departamento de Análise de Situação de Saúde. Saúde Brasil 2011: uma análise da situação de saúde e a vigilância da saúde da mulher. Brasília (DF); 2012; 1:163-182. [citado em 2014 out 25]. Disponível em: http://portalsaude.saude.gov.br/portalsaude/arquivos/pdf/2013/Fev/21/saudebrasil2011_parte1_cap6.pdf.

2. Victora C, Barros F, Silveira AMM. Consultoria: pesquisa para estimar a prevalência de nascimentos pré-termo no brasil e explorar possíveis causas. UNICEF-BR. [online]. 2013. [citado em 2014 jul 10]. Disponível em: http://www.unicef.org/brazil/pt/br_prematuridade_possiveis_causas.pdf.

3. Duffy D, Reynolds P. Babies born at the threshold of viability: attitudes of pediatric consultants and trainees in South East England. Acta Pediatr. 2011;100(1):42-6.

4. Shaw RJ, John NS, Lilo EA, Jo B, Benitz W, Stevenson dk, et al. Prevention of Traumatic Stress in Mothers With Preterm Infants: A Randomized Controlled Trial. Pediatrics. [online]. 2013; 132(4):684-9. [citado em 2015 Aug 12]. Disponível em: http://pediatrics.aappublications.org/content/early/2013/08/28/peds.2013-1331.full.pdf

5. Klaus HM, Kennell H. Vínculo: construindo as bases para um apego seguro e para a independência. Porto Alegre: Artes Médicas; 2000.

6. Ribeiro DG, Perosa, GB, Padovani FHP. Fatores de risco para o desenvolvimento de crianças atendidas em Unidades de Saúde da Família, ao final do primeiro ano de vida: aspectos sociodemográficos e de saúde mental materna. Ciênc saúde colet. [online]. 2014;19(1):215-226. [citado 2015 ago 11]. Disponível em: http://www.scielo.br/pdf/csc/v19n1/1413-8123-csc-19-01-00215.pdf

7. dos Anjos LS, Lemos DM, Antunes LA, Andrade JMO, Nascimento WDM, Caldeira AP. Percepções maternas sobre o nascimento de um filho prematuro e cuidados apos a alta. Rev Bras Enferm. 2012; 65(4):571-577.

8. Souza, SR, Dupas G, Balieiro MMFG. Adaptação cultural e validação para a língua portuguesa da parental stress scale: neonatal intensive care unit (PSS:NICU). Acta Paul. Enferm [online]. 2012; 25(2):171-76. [citado em 2014 jun 02].Disponível em:

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002012000200003&lng=en&nrm=iso.

9. Lakatos EM, Marconi MA. Metodologia Científica. 5ª ed. São Paulo: Atlas; 2011.

10. Hospital Universitário do Oeste do Paraná - HUOP. Registro interno da Unidade de Terapia Intensiva e Unidade de Cuidados intermediários do Hospital Universitário do Oeste do Paraná. Cascavel; 2014.

11. Melo WG, Carvalho MDB. Análise multivariada dos fatores de riscos para prematuridade no sul do Brasil. Revista Eletrônica Gestão & Saúde. [online]. 2013; 43(1):95-102. [citado em 2015 ago 8]. Disponível em: http://gestaoesaude.bce.unb.br/index.php/gestaoesaude/article/viewFile/719/pdf.

12. Almeida TSO, Lins RP, Camelo AM, Mello DCCL. Investigação sobre os Fatores de Risco da Prematuridade: uma revisão sistemática. R bras ci Saúde. [online]. 2013; 17(3):301-308. [citado em 2015 ago 10]. Disponível em: http://periodicos.ufpb.br/ojs/index.php/rbcs/article/viewFile/13674/9814.

13. Alkozei A, McMahon E, Lahav L. Stress levels and depressive symptoms in NICU mothers in the early postpartum period. J Matern Fetal Neonatal Med [online]. 2014 Nov.; 27(17):1738-43. [citado em 2015 Aug 12]. Disponível em: http://www.littlegiraffefoundation.org/images/files/file/Alkozei,%20McMahon%26Lahav_2014_Stress%20levels%20and%20depressive%20symptoms%20in%20NICU%20mothers.pdf.

14. Who. World Health Organization. March of Dimes, PMNCH, Save the Children. Born too Soon: The global action report on preterm birth. WHO, Geneva [online]. 2012. [citado em 2015 Aug 13]. Disponível em: http://doi.wiley.com/10.1002/yd.20044.

15. Souza SR. Tradução, adaptação cultural e validação para língua portuguesa da Parental Stress Scale: Neonatal Intensive Care Unit (PSS:NICU). 123p. 2009. [dissertação]. São Paulo (SP). Mestrado em Enfermagem. Universidade Federal de São Paulo – UNIFESP; 2009.

16. Sandal G, Erdeve O, Oguz SS, Uras N, Akar M, Dilmen U. The admission rate in neonatal intensive care units of newborns born to adolescent mothers. J Matern Fetal Neonatal Med [online]. 2011 Aug; 24(8):1019-21. [citado em 2014 Set 16]. Disponível em: http://informahealthcare.com/doi/abs/10.3109/14767058.2010.545905.

17. Duarte PECR, Coutinho SB. Fatores associados à displasia bronco pulmonar em prematuros sob ventilação mecânica precoce. Rev Bras Saude Mater Infant. [online].

2012; 12(2):135-144. [citado em 2015 Aug 12]. Disponível em: http://www.scielo.br/pdf/rbsmi/v12n2/04.pdf.

18. Busse, M, Stromgren K, Thorngate L, Thomas KA. Parents' Responses to Stress in the Neonatal Intensive Care Unit. Crit Care Nurse [online]. 2013; 33(4):52-60. [citado em 2015 Feb 15]. Disponível em: http://www.aacn.org/wd/Cetests/media/C1343.pdf.

19. Wormald F, Tapia JL, Torres G, Cánepa P, González MA, Rodríguez D, et al. Stress in parents of very low birth weight preterm infants hospitalized in neonatal intensive care units. A multicenter study. Arch Argent Pediatr [online]. 2015; 113(4):303-309. [citado em 2015 Aug 12]. Disponível em: http://www.sap.org.ar/docs/publicaciones/archivosarg/2015/v113n4a04e.pdf

20. Raines DA. Mothers' stressor as the day of discharge from the NICU approaches. Advances in Neonatal Care [online]. 2013; 13(3):181-187. [citado em 2015 Aug 10]. Disponível em: http://www.ncbi.nlm.nih.gov/pubmed/

21. Roger, CE, Kidokoro H, Wallendorf M, Inder TE. Identifying mothers of very preterm infants at-risk for postpartum depression and anxiety before discharge. J Perinatol [online]. 2013 Mar; (33):171-76. [citado em 2014 Out 05]. Disponível em: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584234/pdf/nihms430519.pdf

22. Schappin R, Wijnroks L, Venema MMATU, Jongmans MJ. Rethinking stress in parents of preterm infants: a meta-analysis. Ploone [online]. 2013 Feb. [acesso em 2014 Nov 06]; 8(2):e54992-e54992. Disponível em: http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0054992&representation=PDF

23. Morais AC, Araújo WC, Miranda JFO, Camargo CL. O que pensam os pais sobre assistência de enfermagem aos prematuros em UTI neonatal? Cienc cuid saude [online]. 2013 jan/mar; 12(1):96-103. [citado em 2015 abr 10]. Disponível em: http://periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/16319/pdf

24. Boykova M, Kenner C. Transition from hospital to home for parents of preterm infants. The Journal of Perinatal & Neonatal Nursing. [online]. 2012; 26(1):81-7. [citado em 2015 Aug 10]. Disponível em: http://www.nursingcenter.com/lnc/pdf?AID=1297902&an=00005237-201201000-00014&Journal_ID=54008&Issue_ID=1297343.

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