



Stress Experienced by Parents of Hospitalized Neonate

Abstract:

Introduction: Parents would undergo stress with their neonate hospitalization in Neonatal Intensive Care Unit (NICU) for any reason.

Objectives: The present study aimed to determine stress experienced by parents on hospitalization of their neonate in NICU and the neonate's and parent's characteristics that result in different stress response.

Methodology: A descriptive study was conducted among 130 parents with neonates admitted to NICU of Manipal Teaching Hospital from July to September 2015. The sample was collected by convenience sampling technique. Parental Stress Scale: Neonatal Intensive Care Unit (PSS: NICU) used to measure parental stress. A parent and neonate demographic sheet provided information for determining different stress response. The data were analyzed using descriptive and inferential statistical method.

Results: The mean and standard deviation of total stress score was 3.51 ± 0.74 and 3.58 ± 0.70 overall stress and stress occurrence score respectively. The highest stress experienced by parents was relationship with baby and parental role (3.87 ± 0.78) followed by how the baby looked and behaved (3.78 ± 0.77), sight and sounds of NICU (2.88 ± 1.18). Mothers were found more stressful in regarding their parental role than fathers and economically inactive parents were more stressful in concerning their parental role. The infant characteristics of gestational age resulted in significantly different scores concerning the baby's appearance and behavior.

Conclusion: Neonate hospitalization to NICU produces the varying degree of stress to parents mostly on their alteration of parenting role and appearance and behavior of neonate during treatment process. Hence, health care professional of NICU need to develop intervention that is more supportive and responsive to the parents' need.

Key Words: Stress, Parental stress, Parental stress scale, Neonatal Intensive Care Unit, Neonate.

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Introduction

An infant's birthday is an exciting happening for every parent^{1,2}. Unexpected birthday of a sick or preterm infant can be an end to the emotions and replace anxiety and stress^{2,3}. Because of new reproductive technologies, advancing maternal age, and

An advances in antenatal and post delivery neonatal care, preterm birth rates and the birth of infants with previously considered lethal abnormalities continue to rise in many countries⁴. Parents' stress sources of having a preterm infant and sick infant includes size and neonate's appearance that is surrounded by

accident the device, experience of several aggressive treatments, change in parental role, long-term separation and compatibility with the hospital and environment of NICU. This environment can be stressful, noisy, strange and frightening for the parents since there is death and life at every moment^{6,7}. Parents have limited opportunity to interact with the neonate in the NICU and often are unable to participate in the neonate's care. The parental role alteration, including not being able to help, hold, or care for the neonate, protect the neonate from pain, or share the neonate with other family members, was the factor most strongly associated with symptoms of acute stress disorder⁸. The intensity of a NICU experience may lead parents on a roller coaster ride of fear and vulnerability. Parents have deep concerns over survivability and outcome of their baby. Depression, fear and anxiety stay with parents throughout the hospitalization, as well as long after their infant's discharge from the hospital⁹.

Identifying aspects of the babies, parents and the environment that can cause stress may be useful in assisting health personnel in understanding their importance and in improving the quality of care. This study was conducted to determine the levels of stress experienced by parents of babies admitted in NICU and to identify neonate's and parent's characteristics which significantly influence their stress level.

Methodology

A descriptive study was carried out in NICU of the Manipal Teaching Hospital. The data collected by convenience sampling technique from July to September 2015. Parents whose babies stayed in NICU for shorter period (<2 days) were excluded. In addition, parents were excluded from the study if they had uncontrolled illness like postnatal psychosis. Among 150 parents; 11 parents refused to participate in the study and 9 parents has not fill the proforma complete, resulting in the sample of 130

parents. Parental stress were assessed by using Parental Stress Scale: Neonatal Intensive Care Unit (PSS: NICU) self report instrument¹⁰, which was developed by Miles in 1993. The questionnaire PSS:NICU focuses on three areas: visual stimuli and sounds of unit, behaviour and appearance of baby and parental relationship with baby. Parents were asked to rate the stressfulness of each item on the PSS:NICU on a scale from 1 (not at all stressful) to 5 (extremely stressful). There is also a not applicable (N/A) option, which is scored 0.

There are two possible methods of scoring the stress of parents, the stress occurrence level (Metric 1) and overall level of stress (Metric 2). Mean scores obtained for each. The stress occurrence score is a measurement of the stress related to parents' particular situation. In this case, only those parents who report were having had the experience receive a score on the item. Those who report the item as being not applicable receive a score 0. The second scoring method overall level of stress, in which a parent who did not report experiencing stress by a particular item is scored 1, indicating that no stress was evident. Validity and reliability of PSS:NICU have been documented¹¹.

A parent– neonate Demographic sheet was constructed for the study by the researchers to obtain information on the parent and neonate characteristics that might contribute to, or be predictive of the different stress responses among the parents. These data were obtained confidentially from the medical files and included information on the parent's gender, age, marital status, ethnicity, education, occupation, religion and type of delivery. Data collected on the neonate's demography included their gestational age, birth weight, diagnosis.

Individual items of questionnaire were first coded and processed using the statistical package for social sciences version 20. Demographic data and perceived stress of the parents was evaluated statistically using descriptive statistics that is frequency, percentage, mean and standard deviation. The

overall stress levels for each of the three subscales were used to compare with the socio-demographic and clinical characteristics of the parents and neonates using Mann Whitney and Kruskal Wallis statistical tests and a statistical significance was set at p value of 0.05 or less ($p \leq 0.05$).

Results

Table 1: Socio - demographic Characteristics of Parent n=130

Socio-demographic characteristics	Frequency	Percentage
Parental Age:		
17 - 30 Years	116	89.2
31 - 40 Years	14	10.8
Parental Sex:		
Male	44	33.8
Female	86	66.2
Parental Ethnicity		
Janjati	55	42.3
Brahamin/ Chhetri	52	40
Dalit	20	15.4
Others (Thakuri)	3	2.3
Parental Education Level:		
Secondary	58	44.6
Higher Secondary	38	29.2
Graduate and above	34	26.2
Parental Occupation:		
Home Maker	42	32.3
Service	23	17.7
Agriculture	19	14.6
Student	14	10.8
Self Employed	14	10.8
Labor	8	6.2
Abroad Employed	7	5.4
Unemployed	3	2.3
Religion:		
Hindu	115	88.5
Buddhist	11	8.5
Christian	4	3.1
Type of Family:		
Nuclear	47	36.2
Joint	83	63.8

Table 1 shows mean age of parents was 25.12 ± 4.14 . Most of the parents who were participated in the study were female (66.2%). Various ethnicities were presented among them majorities from Janjati ethnicity i.e. 42.3%. Fifty eight parents were studied in secondary level. Most of the parents (32.3%) were homemaker. Most of the parents were Hindu religion (88.5%). Most of the parents were belongs to joint family (63.8%).

Table 2: Socio-demographic Characteristics of Neonate n = 130

Socio-demographic characteristics	Frequency	Percentage
Neonate Sex:		
Male Child	84	64.6
Female Child	46	35.4
Neonate Position:		
First Child	84	64.6
Second Child	37	28.5
Third or Above Child	9	6.9
Gestational Age:		
Very Preterm (>32 Wks.)	20	15.4
Preterm (32- 36Wks.)	16	12.3
Term (<37 Wks.)	94	72.3
Medical Complication:		
Neonatal Sepsis	45	34.6
Prematurity with Respiratory Disorder	36	27.7
Respiratory Disorder	25	19.2
Neonatal Jaundice	22	16.9
Congenital Anomalies	2	1.5

Table 2 depicts majority of the neonate were male child (64.4%). Majority of neonate were first child i.e. 64.6%. Mean gestational age was 37.24 ± 3.49 weeks. Majority of neonate were suffering from neonatal sepsis i.e. 34.6%.

Table 3: Parent Stress Scale: NICU Subscale and Total Mean Scores n =130

Subscales and Components	Overall Stress Score		Stress Occurrence Score	
	Mean	SD	Mean	SD
Sight and Sounds	2.65	± 1.10	2.88	± 1.12
Looks and Behavior	3.72	± 0.86	3.78	± 0.77
Parenting Role	3.77	± 0.83	3.87	± 0.78
Total Mean	3.51	± 0.74	3.58	± 0.70

Table 3 illustrated the subscale in which they reported their high stress was in the relationship with baby/parenting role and looks and behavior whereas the sights and sounds of unit caused only a little stress. When examining the mean scores for entire scale, the stress occurrence score that indicates moderately stressful (M = 3.58± 0.7). The overall stress score that indicates the degree of stress parents experienced was also within the same range (M = 3.51± 0.74).

Table 4: Association between Parent Demographics and PSS: NICU Subscale
n = 130

Demographic Variables	PSS:NICU Subscales [Median (IQR)]			
	Sight and sounds	Looks and behavior	Parental Role	PSS:NICU
Age				
17–30 Years (n=116)	3 (3.8–2)	4.16 (4.57–3.46)	4.07 (4.42–3.31)	3.66 (4.07–3.05)
31–40 Years (n=14)	2.55 (3.72–1.75)	4.4 (4.7–3.53)	3.65 (4.28–3.39)	3.64 (4.07–3.05)
^a p-value	0.32	0.23	0.56	0.69
Sex				
Male (n= 44)	3 (3.95–2.5)	4.25 (4.53–3.57)	3.71 (4.27–3.28)	3.66 (4.1–3.03)
Female (n= 86)	2.66 (3.76–2)	4.04 (4.58–3.44)	4.14 (4.57–3.42)	3.63 (4.1–3.03)
^a p-value	0.21	0.53	0.036*	0.87
Education				
Secondary (n= 58)	3 (4-2)	3.95 (4.45–3.36)	4.14 (4.57–3.1)	3.64 (4.1–3.06)
Higher Secondary (n= 38)	2.7 (3.8–1.95)	4.3 (4.58–3.65)	3.92 (4.22–3.12)	3.57 (4.17–3.01)
Graduate & Above (n= 34)	3 (3.5–2.4)	4.12 (4.66–3.65)	4.14 (4.46–3.55)	3.73 (4.01–3.26)
^b p-value	0.56	0.30	0.45	0.79
Occupation				
Economically Active (n=71)	2.8 (3.8–2)	4.16 (4.5–3.45)	3.85 (4.28–3.28)	3.6 (3.99–3.01)
Economically Inactive (n=59)	3 (3.8–2)	4.25 (4.66–3.66)	4.28 (4.71–3.5)	3.7 (4.19–3.05)
^a p-value	0.97	0.39	0.006*	0.26

^a Mann Whitney test, ^bKruskal Wallis test, * p significant ≤ 0.05 level of significance

Table 4 denotes there was no difference in stress level of parents according to age and educational status. Regarding sex, there was no difference in stress levels in sight and sounds and looks and behavior subscales but in parenting role, mothers were found more stressful than fathers (p = 0.036). Regarding occupation of parents, economically inactive group obtained higher stress in all the subscales but significant difference observed in parenting role subscale (p = 0.006).

Table 5: Association between Neonate Characteristics and PSS: NICU Subscale
n = 130

Demographic Variables	PSS:NICU Subscales [Median (IQR)]			
	Sight and sounds	Looks and behavior	Parental Role	PSS:NICU
Sex				
Male (n= 84)	3 (3.6–2)	4.16 (4.5–3.41)	4.14 (4.42–3.32)	3.67 (4.03–3.05)
Female (n= 46)	2.9 (4–2.15)	4.27 (4.66–3.66)	4 (4.42–3.37)	3.65 (4.22–3.02)
^a p-value	0.54	0.27	0.99	0.63
Gestation Age				
Very Preterm (n= 20)	3.45 (4.15–2)	4.52 (4.89–4.04)	4.14 (4.53–3.85)	3.93 (4.22–3.41)
Preterm (n= 16)	2.6 (2.95–2.05)	4.25 (4.33–3.9)	4.14 (4.22–3.6)	3.58 (3.66–3.45)
Term (n= 94)	3 (3.76–2)	3.91 (4.58–3.25)	3.85 (4.46–3.1)	3.67 (4.07–2.99)
^b p-value	0.4	0.034*	0.44	0.22

^a Mann Whitney test, ^bKruskal Wallis test, * p significant ≤ 0.05 level of significance

Table 5 depicts there was no significant difference in stress level of parents according to sex of neonates. Regarding gestational age, there was higher stress observed in all the subscale among lower gestational age but significant difference showed in looks and behavior subscale (p=0.034).

Discussion

Findings of this study support the previous studies suggested that the admission of a neonate to an NICU is stressful to parents^{12,11,13,14,15,16}. In regarding the different areas of stress measured by PSS: NICU, the results of this study was consistent

with other studies^{12,11,13,14,16} which indicate that the most stressful aspect of having an infant in NICU is an altered parental role and relationship with their baby. Becoming parents is one of the stressful events of life, in addition when the neonate is sick or premature and need to take care to NICU leads to parent's loss the confident, feeling guilt. This alteration in parental role is particularly stressful for mother^{11,12}. that may be due to biological and social role difference between mothers and fathers. Economically inactive parents were found more stressful than economically active parents¹². It will be difficult to manage economically inactive parents for expenses of the treatment of their neonates which may keep them to stress to assume their parental role. There was no difference found in stress assuming parental role according to age group which was contrast to study done in US¹². In current study parents were not younger than 17 years along with most of the parents were belongs to joint family.

The second specific area that caused stress for parents in this study was how the baby looked and behaved. These findings is similar with studies done in US, Nigeria, India^{12,13,16}, but inconsistent with study done in Teheran which found this area to cause the greatest stress¹⁵. In the current study, having a baby who was very preterm resulted in significantly higher stress scores. These findings seems sensible since premature babies are physiologically unstable, demonstrate many aspects in their physical appearance that are different and less responsive to social interaction than term baby.

An area that caused only a little stress for parents in this study was sights and sounds of NICU which is consistent with the other studies^{12,13,14,16}. The parents express less stress NICU environment as they perceived it is need for their neonate treatment and better health. There was no influence in parents' stress in sight and sounds from parental age which was consistence with the study done in Nigeria and US^{13,14}. The

finding suggests that even though the NICU environment provokes parental stress, the magnitude of stress is not associated to the age limits of the parents.

The finding of this study has to be considered with reference to its limitations. Non- random convenience sample was used to conduct the study which was restricted to one hospital and geographic location. Generalization of study is limited. Variation in time of administration of the PSS: NICU (2–21 days of admission in NICU) is another limitation because different events happen at particular times in the unit.

Conclusion

The study reveals the admission of neonate is stressful to parents. The area of greatest stress to parents is parent role and relationship with their infant and looks and behavior of infant. Therefore the health professionals in NICU need to focus to provide opportunities for active participation of parents in the care and nurturing of their neonates. The study also highlights the need to provide counseling about information of baby's condition and treatment plan to parents helps to reduce stress.

Recommendation

1. Effect of counseling among stress of parents on their neonatal hospitalization.
2. The study can be done with larger sample

Acknowledgement

I would like to thank Institutional Review Committee of Manipal College of Medical Sciences for providing ethical clearance. I acknowledge NICU department of Manipal Teaching Hospital for helping us to conduct this study. Similarly my sincere gratitude goes to Dr. Margaret Shandor Miles, Professor Emeriti of the School of Nursing at the University of North Carolina for providing tool, PSS: NICU. I owe our vote of thanks to all the individuals for their participation in this study.

Ethical Clearance

Ethical permission was taken from Institute Review Committee of Manipal College of Medical Sciences (MCOMS). The permission for data collection was obtained from authority of Manipal Teaching Hospital. Informed consent was taken from respondents after clarification of objectives of the study. The environment was maintained free from any kind of pressure and biasness. Respondents were assured that information they provide will be maintained confidential.

Funding

Self

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