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**Kiran Kour**

(M.Sc Nursing), Nursing Tutor  
School of Nursing &  
Biomedical Sciences, College of  
Nursing BGSB University,  
Kangan Morh, Kot Bhalwal  
Jammu and Kashmir, India

**Akoijam Sangita Devi**

Assistant Professor  
College of Nursing Jammu  
BGSB University, Kangan  
Morh, Kot Bhalwal  
Jammu and Kashmir, India

## Assess the parental stress level and identify the factors precipitating stress in parents of neonates

**Kiran Kour and Akoijam Sangita Devi**

**Abstract**

A study to assess the parental stress level and identify the factors precipitating stress in parents of neonates admitted in NICU of selected hospital in Haryana. The conceptual model developed for the study is based on System Model. The model consists of three areas- Input, Process, Output. It was assumed that parents of neonate admitted in NICU do experience stress to some extent, parent will be able to frankly express their concerns and feeling about admission of neonate in NICU, environment of NICU precipitate parental stress, health status of neonates admitted in NICU has effect on stress level of parents, parents stress level can be measured by PSS: NICU. The study was delimited to parents whose neonates are admitted in MMIMSR& H, Mullana and Military hospital of Ambala during the study period and parents who are willing to participate in the study and feel free to express their actual feelings. The literature reviewed for the present study was related to parental stress and related to Parental Stress Scale: Neonatal Intensive Care Unit. It was concluded that all parents of neonates admitted in NICU had stress of varying level, parental concerns and baby looks and behaviour were identified as stressors precipitating stress in parents of neonates admitted in NICU and there was significant association between stress level of parents with family income.

**Keywords:** Stress precipitating factor, parent, NICU, neonates, stress

### 1. Introduction

The birth of a first baby is usually both an exciting and a stressful event because it requires change in economic as well as social role. Any woman who is extremely stressed or who gives birth to an infant who in any way does not meet her expectations such as being the wrong sex, being physically or cognitively challenged, or being ill may have difficulty bonding with her infant. Inability to bond is a postpartal complication with far-reaching implications, possibly affecting the future health of the entire family [1].

The birth of an infant requiring admission to a Neonatal Intensive Care Unit (NICU) can represent a considerable source of stress for some parents. Currently, little is known about the factors associated with parental stress in response of admission of neonate to the NICU. Identification of factors that contribute to parent stress can enable health professionals to facilitate parent adaptation and coping, thereby promoting optimal parent-infant relationships and subsequent infant development [2].

The neonate is the most vulnerable family member threatening parent's hope & their sense of competence. Unexpected crisis and tragedy that affects the life and welfare of child are upsetting and disruptive, identification of stressful events help parents to describe reality as they deal with children. The parent & the family have major responsibility in caring for the sick neonate [3].

The objectives of the study were to assess the stress level of parents of neonates admitted in NICU, to identify the factors precipitating stress in parents of neonates admitted in NICU and to determine the association of stress level with selected variables.

### 2. Material and Methods

The research approach adopted for the study was survey approach with descriptive research design. The study was conducted in NICU of Military hospital of Ambala and NICU of M.M.I.M.S.R.&H Mullana, Ambala. The pilot study was conducted at Neonatal intensive care unit of MMISR& Hospital, Mullana in the month of October 2010. The sample size was 10 by using purposive sampling. For final study the sample comprised of 50 parents of

**Correspondence**

**Kiran Kour**

(M.Sc Nursing), Nursing Tutor  
School of Nursing &  
Biomedical Sciences, College of  
Nursing BGSB University,  
Kangan Morh, Kot Bhalwal  
Jammu and Kashmir, India

neonates admitted in NICU. The tools used for data collection were Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU). The instrument includes four dimensions: Environmental, Baby looks and behaviour, Parental concern and Staff response. The content validity of tools was established by nine experts in the field of nursing. The reliability coefficient for PSS: NICU was calculated using cronbach’s alpha and was found to be 0.9. Data were collected in month of November, December 2010 and January 2011. The data obtained were analysed using both descriptive and inferential statistics in terms of frequency, percentage, mean, median, S.D., range, ranking order and chi value. Ethical approval was taken from the Institutional ethical committee for conducting the final study. Consent form was prepared for the study subjects regarding their willingness to participate in the research project. The purpose for carrying out research project was explained to the participants verbally and assurance of confidentiality was given.

**3. Results**

Maximum number of informants (66%) were mothers, most of the informants (58%) were in the age group of 18-25

years, most of the informants (30%) had primary education, most (56%) of the informants were having family income less than Rs. 5000, all mother of neonates admitted in NICU were housewife and most of the father (30%) were labourer, majority of informants (82%) had joint family, most of informants (46%) had one alive child, majority of parents (82%) did not have previous experience of neonatal admission in NICU, most of respondents (70%) were supported by parents, most of the mothers (56%) of neonates admitted in NICU were multigravida. Majority of the neonates (72%) were born by normal delivery, most of the neonates (62%) were premature, Most of the neonates (60%) were male baby maximum number of neonates (56%) had low birth weight, on the day of interviewing of parents, majority of neonates (70%) were below one week of age, majority of neonates (86%) had one week duration of stay in NICU, as regard to parents’ awareness about reason for their neonate admission in NICU all of them expressed baby needs close observation, majority of neonates (70%) were admitted with prematurity with respiratory disorders, majority of the neonates (96%) were being nursed under radiant warmer and 94% were receiving medication.

**Table 1:** Mean, Median, Standard Deviation Range, and Percentile of stress scores of parents admitted in NICU N= 50

Range	Mean	Median	Standard Deviation	Percentile		
				25	50	75
33-132	83.42	83.50	22.94	62.00	83.50	103.25

Range of parental scores varied between 33 and 132 and mean parental stress score was 83.42 ± 22.94 and median was 83.50, all parents experienced stress of varying levels,

22% of parents of neonates admitted in NICU were extremely stressed.

**Table 2:** Mean percentage and ranking of parental stress score on dimensions of PSS: NICU N=50

S. No.	Dimensions	Maximum possible score	Mean Score	Mean Percentage (%)	Rank
1	Parental concerns	50	25.06	51.02	1 <sup>st</sup>
2	Baby looks and behaviour stress	85	37.74	44.4	2 <sup>nd</sup>
3	Environmental	35	13.24	37.82	3 <sup>rd</sup>
4	Staff response	55	06.46	11.74	4 <sup>th</sup>

The dimension of parental concerns was ranked first among other dimensions of PSS: NICU and found to be the highly precipitating factor causing stress in parents of neonates admitted in NICU. Staff response dimension was identified as the least precipitating factor causing stress in parents of neonates admitted in NICU.

In parenteral concern dimension, ‘being separated from baby’ (81.63%) was most identified factor precipitating stress among parents of neonates admitted in NICU. In baby

looks and behaviour stress dimension, ‘seeing my baby stop breathing’ was the highest identified factor precipitating stress in majority (96%) of informants. In regard to enviromental dimension, ‘having the machine (respirator) breathe for my baby’ (98.3%) was the most identified enviromental stressor. Most of the informants (46.66%) expressed that ‘too many different people (doctors, nurses, others) talking to me’ was the major stressor identified in staff dimension responses

**Table 3:** Chi square value showing the association between parental stress level and selected variables: N= 50

Selected variables	Stress level				χ <sup>2</sup>	df
	A Little stressed	Moderately stressed	Very stressed	Extremely stressed		
<b>Age of informant</b>						
18-25	05(17.3)	10(34.5)	06(20.7)	08(27.6)	6.00	3
26-35	08(38.1)	03(38.1)	07(33.3)	03(14.3)		
<b>Education</b>						
Illiterate and Primary	04(22.2)	03(16.7)	06(33.3)	05(27.8)	11.04	9
Secondary	05(41.7)	04(33.3)	02(16.7)	01(8.3)		
Senior secondary	00(00)	03(30)	04(40)	03(30)		
Graduate	04(40)	03(30)	01(10)	02(20)		

Family income						
<5000	06(21.4)	08(28.6)	11(39.3)	03(10.7)	14.34*	6
5001-10000	06(42.9)	02(14.3)	00(00)	06(42.9)		
>10000	01(12.5)	03(37.5)	02(25)	02(25)		
Duration of stay(days)						
≤7	13(30.2)	11(25.6)	9(20.9)	10(23.3)	6.10	3
>7	0(0.0)	2(28.6)	4(57.1)	1(14.3)		
Gender of neonate						
Boy	9(30.0)	6(20.0)	8(26.7)	7(23.3)	1.57	3
Girl	4(20.0)	7(35.0)	5(25.0)	4(20.0)		
Informant relationship with neonate						
Father	5(29.4)	5(29.4)	4(23.5)	3(17.6)	0.51	3
Mother	8(24.2)	8(24.2)	9(27.3)	8(24.2)		
Neonate's relationship with Parents						
Son	9(30)	6(20)	8(26.7)	7(23.3)	1.91	3
Daughter	4(20)	7(35)	5(25)	4(20)		

df (3) ≥ 7.815 df (6) ≥ 12.592 df (9) ≥ 16.919

\* significant at 0.05 level

Chi-square value for family income ( $\chi^2 = 14.34$ ,  $df=6$ ) is found to be statistically significant at .05 level. This revealed that there was significant association between stress level of parents with family income. All parents of neonates admitted in NICU had stress of varying level. Parental concerns and baby looks and behaviour were identified as stressors precipitating stress in parents of neonates admitted in NICU.

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#### 4. Discussion

**4.1 Factors precipitating stress:** Findings of the present study indicated that an alteration in parent infant relationship was expressed as most stressful aspect of NICU by 51.02% of parents, followed by infant's appearance by 44.4%. The sights and sounds of the NICU and staff response were expressed as stressor by 37.82%, 11.74% respectively. The findings of the present study were consistent with findings of the study conducted by Miles, Funk and Kasper [4] which showed that alteration in the parent – infant relationship and infants appearance identified as most stressful aspect of NICU and the sight and sounds of NICU were identified as lesser stressful aspect of the NICU. The NICU experience is often stressful due to the environment and physical appearance and behaviours of the infants [5].

The altered parental role was the highest source of stress for both parents [6]. The findings of the present study also revealed that being separated from my baby and not being able to share my baby with other family members were expressed by 81.63% and 80.42% respectively.

The findings of the present study in regard to environmental dimension were partially consistent with the findings of the study conducted by Lamy ZC, Gomes R [7] which showed that the environment of a NICU is perceived by parents as being cold, impersonal and highly stressful whereas the findings of present study indicated that the environmental dimension had 3<sup>rd</sup> rank among other dimensions precipitating stress among parents of preterm infants.

#### 4.2 Association of stress level with selected variables:

Maternal age, education, income; planned pregnancy,

having complications of pregnancy, receiving antenatal care, type of labour, gestational age of the infant at birth, reasons for hospitalisation of the infant and birth weight did not affect maternal anxiety levels [8]. Findings of the present study also revealed non-significant association between parental stress level and selected variables.

Anxiety in mothers was significantly higher if their infant was a boy [9]. Shields-Poe & Pinelli, (1997) examined the effect of age on stress indicated that older mothers reported higher levels of stress on the PSS: NICU than younger mothers<sup>10</sup> but in present study no significant association was seen between stress level with age of informant Mothers had the highest overall stress. For mothers, high stress was associated with lower income [11].

Mothers were more stressed than fathers in relationship to the NICU experience as a whole, and more specifically regarding their parental role. Mothers were significantly more stressed by the environmental aspects of Special care Nursing and total Special Nursing Care experience than were fathers [12].

Alterations in the parental role were found to be stressful for both mothers and fathers, with mothers reporting significantly greater stress in this area than did fathers. But in present study no difference was found in father and mother stress level [13].

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