

# Stress and Coping Strategies among Parents of Infants Admitted in Neonatal Intensive Care Unit at Tertiary Level Hospital

Bishnu Maya Banjade<sup>1</sup>, Khagi Maya Pun<sup>2</sup>, Sushila Khatri<sup>3</sup>, Sunita Pokharel<sup>3</sup>

<sup>1</sup> Nursing Officer, Bir Hospital, Kantipath, Kathmandu - 44600, Nepal.

<sup>2</sup> Associate Professor, Patan Academy of Health Sciences, School of Nursing and Midwifery, Patan Hospital, Satdobato Road, Lalitpur - 44700, Nepal.

<sup>3</sup> Nursing Officer, Shree Birendra Hospital, Chhauni, Chhauni Hospital Road, Kathmandu - 44600, Nepal.

## Corresponding Author

Sunita Pokharel,  
Nursing Officer,  
Shree Birendra Hospital,  
Chhauni, Chhauni Hospital Road,  
Kathmandu - 44600,  
Nepal.  
Email: pokhrel.sunita@gmail.com

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## Abstract

**Introduction:** Having a newborn infant hospitalized in the NICU is an unexpected and stressful event for a family. Coping is defined by actions of self-regulation of emotions, cognitions, behaviors, and motivational orientation under stress. Present study is aimed at identifying the level of stress and coping strategies of parents of infants admitted in NICU.

**Methods:** A cross-sectional analytical study was conducted among 104 parent of infants admitted in NICU at Patan Hospital and Kanti Children's Hospital, Nepal. Parental stress and coping strategy was assessed using PSS:NICU scale and modified coping checklist. Descriptive (frequency, percentage, mean) and inferential statistics (Pearson's correlation and fisher exact test) was used to analyze the data.

**Results:** Among 104 parents, 97.12% had moderate, 1.92% had low and 0.96% had severe stress. Regarding coping strategies mostly used coping were, social coping (mean score 3.93) and emotional coping strategy (mean score 3.77). Social coping was positively correlated with overall stress level ( $r = 0.41$ ). None of the parents and infants related variables were significantly associated with stress level.

**Conclusion:** Nearly all the parents had moderate level of stress and parental role was the major stressor. More than three fourth of the parents used social and emotional coping and followed by spiritual, diversional and least used was problem solving strategy. None of the parents and infants related variables was significantly associated with stress level. Social coping was positively correlated with overall stress level.

## INTRODUCTION

Medically fragile infants are born into families of all races, religions, nationalities, and cultural backgrounds despite their social or financial environment. With the advance in technology, smaller and more medically fragile infants are being treated and kept alive in highly technical neonatal intensive care unit (NICU) environments.<sup>1</sup> Each year, over 40,000 babies are admitted to a Newborn Intensive Care Unit (NICU) in the United States.<sup>2</sup> In Nepal, the number of NICU admissions has been increasing over the years. In Manipal Teaching Hospital, Pokhara, Nepal 1708 neonates were admitted in NICU during two year period.<sup>3</sup> In Patan Hospital, Lalitpur, Nepal, neonatal admissions were 131 in a year.<sup>4</sup> Similarly, 404 neonates admitted in

NICU of Kanti Children Hospital, Kathmandu, Nepal in a year as per the hospital records.

NICU is a highly stressful environment not only for the health care workers and patients but also for the parents which serves as a significant source of stress for parents. Having one's child admitted to a NICU is difficult for parents because of alterations in the parental role, uncertainty of the infant's outcome, and ineffective patterns of communication among health care providers and parents stressful experiences can lead to barriers in parents-infant interactions that appear to have a long-term impact on parenting.<sup>5</sup> The very criteria for admission to a NICU are frightening and can realistically prompt fear that their child

could die or become severely disabled. Parents experience extreme levels of anxiety that approach near-panic level, followed by a reduction of anxiety in the following days.<sup>6</sup> Parents are the most crucial and immediate environment in which the infant survives and develops. Parental stress in NICU is often a neglected area. Much of the care giving is centered to infants.<sup>7</sup>

Coping with difficulties and emotional distress in parents with infants in the NICU have also been shown to have adverse effects on an infant's outcomes. Paternal depression in the postnatal period was associated with an increased risk for conduct problems.<sup>1</sup> Parental depression has been associated with poor cognitive development, altered behavioral functioning, and impaired feeding and growing which has found that coping difficulties leading to emotional distress symptoms in either parent may cause decreased bonding between parents and the infant.<sup>8</sup> Hence, this study was planned to assess the parental stress of NICU admitted neonates.

## METHODS

The present study was conducted in NICU of two different hospitals in Kathmandu. Kanti Children's Hospital and Patan Hospital where 25 and six beds are allocated for NICU respectively. A cross-sectional analytical study was conducted among 104 purposively selected parents of infants admitted in NICU. The study was conducted after obtaining permission from Research Committee of Lalitpur Nursing Campus, Institutional Review Committee (IRC) of Patan Academy of Health Sciences (PAHS) (PNM 2008251433) and IRC of Kanti Children's Hospital. Data was collected using structured interview schedule. Parental stress and coping strategy was assessed using PSS:NICU scale and modified coping checklist. Parental Stress Scale: NICU, which consist of four domains and 21 items with 5-point Likert scale. Originally it was in three domains and 26 items developed by Miles.<sup>9</sup> Researcher added one more domain (communication with staff) and modified by excluding some of the items which were not relevant to our context. The five domains of PSS:NICU used by parents of neonates to overcome stress are social coping, emotional coping, spiritual coping, diversional activity and problem solving coping. Likewise, modified coping checklist (CCL) which was developed by Kiran Rao was used.<sup>10</sup> Originally, coping checklist of Kiran Rao had 70 items which has not divided into domains. Modified CCL consisted 27 items which were divided into five domains: problem focused coping strategy, seeking social support, emotion focused coping, spiritual coping and diversional coping. Each day, four to five parents who met the inclusion criteria were asked to participate in the study after taking written consent. Data was collected through face to face

interview by researcher herself; time for interview was 35 to 40 minutes for each parent maintaining confidentiality. Respondents' dignity was maintained by giving them the right to discontinue from the study at any time. In case of availability of both parents, parents were selected by lottery system. Data analysis was done using SPSS version 20 for windows. Descriptive statistics was used to analyzed socio demographic data and level of stress (frequency, percentage, mean). Inferential statistics (Pearson's correlation and fisher exact test) was used to find out the association between selected demographic variables of parent and infants and level of stress. Normality test was done and the data is normally distributed as p value is 0.134. Range, mean, and standard deviation were used to represent domains of coping strategies used by parents.

## RESULTS

Total 104 parents were interviewed for data collection. Out of 104 parents, 55.8% were age group of  $\leq 25$  years, mean age was  $25.12 \pm 4.35$ . Regarding educational level, 31.7% had completed School Leaving Certificate. Total 37.5% of parents were home makers and 50% of parent's income was Rs 10,000 to 20,000 (Approximately 80 to 180 USD). Occupation wise, grocery store owner was 10.57% followed by beauty-parlor 6.73% and 5.76% doll making respectively. 54.8% of parents had two children and 69.2% of parents were from joint family.

Most (77.9%) of the neonates were full term at birth while 17.3% were born prematurely. Majority 60.6% of the babies were delivered by spontaneous vaginal delivery followed by Caesarean delivery 34.6% and vacuum delivery 4.8%. 59.6% of the neonates were below 3 kg and 69.2% were male babies. Among the neonate, 57.7% were below 10 days of age. Majority of the neonate (82.7%) had less than seven days of hospitalization.

**Table 1:** Stressors perceived by parents (N = 104)

Stress factors	Mean	SD	Mini - Max
Parental role	4.35	0.70	1 - 5
Sights and sound	3.22	0.76	1 - 5
Baby looks and behavior	2.91	0.72	1.25 - 5.25
Communication with staff	1.41	0.58	1 - 3.4

Note: Scale ranges from 1-5

Table 1 reveals that among the four stressors, parental role was the major stressor (mean:  $4.35 \pm 0.70$ ) followed by sights and sounds (mean:  $3.22 \pm 0.76$ ), baby looks and behavior (mean:  $2.9 \pm 0.72$ ) and communication with staff (mean:  $1.41 \pm 0.58$ ) respectively.

**Table 2:** Overall stress level of parents (N = 104)

Level of stress	Frequency	Percent
Low stress (Mean score: 1 - 1.9)	1	0.96
Moderate stress (Mean score: 2 - 3.9)	101	97.12
High stress (Mean score: 4 - 5)	2	1.92

Tables 2 and 3 represent the level of stress and the coping strategies used.

**Table 3:** Coping strategies used by parents (N = 104)

	Range	Mean	Mean Percent	SD	Mini- Maxi
Social coping	0 - 5	3.93	78.65	1.07	1-5
Emotional coping	0 - 5	3.77	75.38	1.02	2-5
Spiritual coping	0 - 6	3.43	68.65	1.59	0-6
Diversional activity	0 - 6	3.25	65.00	1.43	0-6
Problem solving	0 - 5	2.46	49.23	1.07	1-5

Table 3 shows that five domains of coping strategies, all the domains of strategies were used by parents. In which, social coping strategy mean score was 3.93, emotional coping mean score 3.77, spiritual coping strategy mean score 3.43, diversional coping mean score 3.25 and problem solving coping strategy mean score was 2.46 respectively.

observed in a study done in India by Gurgani et al which revealed that 85.0% had moderate stress, 8.3% had severe stress and 6.7% had mild level of stress.<sup>9</sup>

Contradictory findings were observed in a study done by Ganguly et al, where 60.8% parents experienced severe and extreme stress level.<sup>11</sup>

**Table 4:** Correlation between stress and coping strategies (N = 104)

	1	2	3	4	5	6
Overall stress	1					
Problem solving coping	0.09	1				
Emotional coping	0.04	- 0.02	1			
Spiritual coping	0.06	0.10	0.14	1		
Social coping	0.41**	0.33**	- 0.01	- 0.01	1	
Diversional activity	0.07	0.27**	- 0.01	0.12	0.12	1

\*\* Correlation is significant at the 0.01 level (2-tailed) at 95% confidence level.

Table 4 depicts that Pearson correlation was used to see the relationship between overall stress and coping strategies. Overall stress is positively correlated with social coping ( $r = 0.41$ ).

In this study, among the five domains of coping strategies, social coping and emotional coping was mostly used by parents which were positive aspect of coping strategies. None of the parent and infant related characteristics is significantly associated with stress level.

## DISCUSSION

The main objective of the study was to assess the level of stress among the parents of infants admitted in NICU. In this study, most of the parents (97.12%) had moderate level of stress followed by 1.92% who had high level of stress and 0.96% had low level of stress. Similar findings were

Difference in the stress level might be due to duration of hospital stay and condition of infant i.e. improving or worsening status in the NICU.

In this study, parental role was the major stressor (Mean: 4.35) followed by sights and sounds (Mean: 3.22), baby looks and behavior (Mean: 2.9) and communication with staff (Mean: 1.41) respectively. Similar findings was observed in the study done in Nepal by Shakya et al, among 130 parents of neonates admitted in NICU of Manipal Teaching Hospital, Pokhara in which the highest stress was due to parental role (Mean score: 3.87) followed by baby looks and behavior (Mean score: 3.78), sight and sounds of NICU (Mean score: 2.88).<sup>12</sup> Contrast findings were observed in the study done in India by Chourasia et al, where the mean scores for the subscales sights and sounds, baby looks and behavior and alteration in the parental role were

2.55, 4.1 and 4.12 respectively.<sup>13</sup> In this study, parental role subscale was the major stressor. Parental role alternation means the impact of the admission on the parent-infant relationship, personal characteristics of the parent, and personal resources.

Second objective was to find out the coping strategies used by the parents of infants in managing their stress. In this study, all the domains of strategies namely social coping, emotional coping, spiritual coping, diversional activity and problem solving coping were used by parents of neonate to overcome stress. Social coping strategy was 78.65%, emotional coping 75.38%, spiritual coping strategy 68.65%, diversional coping 65.00% and problem solving coping strategy was 49.23% respectively. Among the five domains of coping strategies, social coping and emotional coping was mostly used by parents as this finding can be a result of parents' cultural and religious values. Similar findings were found in a study done in India by Sudhana et al, where they reported that social coping domain was the most used coping strategy, followed by emotional coping domain, spiritual coping and diversional activity respectively.<sup>14</sup> Contradictory findings with this study was observed in a study done in India by Patil et al, which shows that coping strategies used by mothers was 80.97% spiritual coping, 74.33% social coping, 68.20% emotional coping and 49.83% diversional activity respectively.<sup>15</sup> These discrepancies in the findings may be explained by the different study settings and geographic regions.

The third objective was to examine the association between selected demographic variables (Age of parents, education, occupation and number of previous children) and level of stress. In this study, none of the parents and infant related demographic variables was significantly associated with stress level ( $p = > 0.999$ ). However, Vinod et al noted significant association between the level of parental stress among mothers of neonates admitted in NICU with their selected demographic variables such as educational qualification and occupation.<sup>2</sup>

Mostly used coping strategy domain was social coping. This may be due to their social interaction between parents staying together in hospital waiting room and sharing their problems among parents themselves. Therefore, social coping domain is found to be the most used coping strategy, compared to other coping strategies.

Fourth objective was to see the correlation of the level of stress and coping strategies used by parents. Overall stress positively correlated with social coping ( $r = 0.41$ ). Similarly, a significant correlation ( $r = 0.238$ ) was observed between stress and coping mechanism of mothers is a study by Shanmugam et al.<sup>16</sup> Contrasting findings were observed in a study done by Sudhana et al, which showed that

there was no significant relationship between coping and stress scores ( $r = 0.06$ ).<sup>17</sup> As the level of stress increases, the level of coping may also increase. Therefore, in this study, overall stress positively correlated with social coping. Because parents share their problem with each other, they took support from their relatives, friends which help them to overcome the stress.

The study has limitation as data was collected in NICU of two hospitals only and purposively selected small sample size may hinder the generalization of the data. However, this study should pave path for larger, multi centric studies in the future. Findings of the study will be helpful for the nursing personnel to enhance their knowledge on handling the different condition of parents involved in newborn care to reduce stress level and coping mechanism of parents and to provide information to the parents about existing child condition and treatment to reduce parental stress.

## CONCLUSION

Nearly all the parents had moderate level of stress and parental role was the major stressor. More than three fourth of the parents used social and emotional coping and followed by spiritual, diversional and least used was problem solving strategies. None of the parent and infant related variables was significantly associated with stress level. Social coping positively correlated with overall stress level.

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