

## Separated from their Little Bundle of Joy: Are Mothers and Fathers Equally Affected

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### Abstract

**Objectives:** The birth of a baby brings joy and the need for new family roles. However, few babies typically fail in their graceful perinatal transition requiring separation from parents in NICU leading to stressful situations. This study aimed to identify, correlate, and compare the stress levels and coping strategies of mothers and fathers with neonates in the NICU.

**Methods:** A descriptive cross-sectional survey was conducted among 80 parents of NICU-admitted neonates, using purposive sampling. Data were collected through self-structured rating scales. Statistical analysis was performed using Spearman's Rank Correlation Coefficients, Mann-Whitney U-test, and Chi-square test, with normality established by the Shapiro-Wilk test.

**Results:** The findings revealed that the majority of mothers (45.0%) and fathers (47.5%) were aged 26-30 years. Most mothers (72.5%) and fathers (65.0%) experienced moderate stress. A significant number of mothers (67.5%) and fathers (52.5%) used partially adaptive coping strategies. Both mothers and fathers exhibited high stress and coping strategies in the emotional domain. The Spearman's correlation coefficient was  $r = -0.33$  for mothers and  $r = -0.47$  for fathers, indicating a moderate negative correlation between stress levels and coping strategies. No significant difference was found in stress levels between mothers and fathers ( $Z = -.516$ ,  $P = 0.606$ ), but a significant difference was noted in their coping strategies ( $Z = -2.348$ ,  $P = 0.019$ ). Significant associations were found between stress, coping strategies, and socio-demographic variables such as mode of delivery ( $\chi^2 = 7.73$ ,  $P = 0.02$ ), fathers' employment status ( $\chi^2 = 15.3$ ,  $P = 0.01$ ), neonates' medical diagnosis ( $\chi^2 = 13.4$ ,  $P = 0.03$ ), and length of stay in the NICU ( $\chi^2 = 11.3$ ,  $P = 0.02$ ).

**Conclusion:** While no significant gender difference was found in stress levels, fathers showed better coping strategies. Since stress is negatively correlated with coping, it suggests that healthcare professionals' support can reduce parental stress and improve coping.

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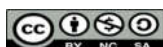
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**Keywords:** Stress; Psychological; Adaptation; Psychological; Parents; Intensive Care Units; Neonatal; Infant; Newborn; Parental Stressors.

**Key Message:** Parental stress in the NICU is significant, with fathers exhibiting better coping strategies. This study compares stress levels and coping mechanisms, revealing moderate stress and partially adaptive coping in parents. Enhanced healthcare support could mitigate stress and improve coping, benefiting the overall well-being of NICU families globally.



## INTRODUCTION

Hearing their newborn's first cry typically brings parents a profound sense of relief, joy, excitement, and accomplishment. As they eagerly anticipate the arrival of their baby, parents prepare for child-rearing, expecting to hold their new bundle of joy soon after birth. During the initial minutes and hours after birth, crucial bonding, attachment, and engrossment take place, which are essential for the newborn's development.<sup>2</sup> However, not all parents have the opportunity to appreciate these moments immediately. Some babies encounter difficulties during the perinatal transition, requiring separation from their parents and admission to the neonatal intensive care unit (NICU).<sup>3</sup>

When a newborn is admitted to the NICU shortly after birth, it creates an unforeseen crisis and a traumatic experience for the parents, resulting in significant distress and an increased need for coping mechanisms. Parental responses to this stress can vary greatly depending on multiple factors, such as the family's economic and social stability, internal support system, and the extent of external support available to them. This study aims to identify the level of stress experienced by parents with neonates in the NICU and the coping strategies they adopt. It seeks to determine the correlation between stress levels and coping strategies, compare the stress levels and coping strategies between mothers and fathers, and explore the association of stress levels and coping strategies with selected demographic variables. Understanding these dynamics is crucial for healthcare professionals to provide targeted support, reduce parental stress, and enhance coping strategies, ultimately benefiting the overall well-being of NICU families.

## MATERIALS AND METHOD

A cross-sectional survey was conducted among 80 parents of neonates admitted to the NICU of a tertiary care hospital in Bhopal, Madhya Pradesh. Participants were recruited through purposive sampling from mothers in the postnatal wards, accompanied by their spouses. Parents who could speak Hindi or English and were willing to participate were included in the study. Parents were excluded if either one was unavailable during the data collection period. Stress and coping among parents were measured using self-structured

rating scales: the Stress Assessment Scale and the Assessment Scale for Coping Strategies. Both scales are three-point Likert scales with 30 items each, divided into six domains. The Content Validity Index (CVI) for the tools was over 0.78. The internal consistency coefficients, using Cronbach's Alpha, were 0.89 for the Stress Assessment Scale and 0.86 for the Assessment Scale for Coping Strategies. A pilot study was conducted from 29.08.2021 to 02.09.2021 with 14 parents to establish the study's feasibility and pre-test the tool.

The study protocol was approved by the Institutional Human Ethics Committee (IHEC-PGR) (LOP Ref Number: 2020/MSN/July/04). The project followed the procedures in accordance with the principles of the Helsinki Declaration (version November 2013, [www.wma.net](http://www.wma.net)). Written permissions were obtained from the relevant authorities and informed consent was obtained from participants. To ensure privacy, anonymity, and confidentiality, code numbers were assigned to all participants instead of using names.

Statistical analysis was conducted using IBM-SPSS (version 18). The tests used included the Shapiro-Wilk test for normality, Spearman's Rank correlation coefficient for the relationship between stress and coping, the Mann-Whitney U-test for comparing stress and coping strategies between mothers and fathers, and Chi-Square and Fisher's exact tests for associations with socio-demographic variables.

## RESULTS

**Sample Characteristics:** Among the 80 participants, most mothers (45.0%) and fathers (47.5%) were aged 26-30 years. A majority of participants had graduate level education or higher (mothers 60%, fathers 62.5%). Most mothers were unemployed (85.0%), while the majority of fathers were either self-employed or worked in private jobs (72.5%). Additional details about the participants include monthly family income, family type, residence, birth order of the admitted newborn, medical diagnosis of the neonate, number of days in the NICU, birth weight, gestational age, mode of delivery, baby's gender, and previous NICU admissions or neonatal deaths (Table 1).

**Level of Stress Among Mothers and Fathers:** The majority of mothers (72.5%) and fathers (65%) experienced moderate stress. Some mothers (17.5%) and fathers (20%) were severely stressed, while

only 10% of mothers and 15% of fathers reported mild stress (see Fig. 1). Analysing stress levels by domain showed that most mothers (73%) and fathers (67%) had higher stress related to emotional instability (Fig. 2).

**Table 1:** Sample characteristics

Socio-demographic variables		Frequency (f)		Percentage (%)	
		Mother	Father	Mother	Father
N= (80)					
<i>Age mother &amp; father (in years)</i>	Below 20	0	0	0	0
	21-25	14	5	35	12.5
	26-30	18	19	45	47.5
	Above 30	8	16	20	40
<i>Educational qualification</i>	No formal education	1	0	2.5	0
	Primary education	3	4	7.5	10
	Higher education	12	11	30.0	27.5
	Graduate or above	24	25	60	62.5
<i>Employment status</i>	Government Employee	2	4	5	10
	Private Employee	3	15	5	37.5
	Self-Employed	1	14	2.5	35
	Unemployed	34	7	85	17.5
<i>Monthly family income (in rupees)</i>	Less than 10000	9		22.5	
	10001-20000	18		45	
	20001-30000	5		12.5	
	More than 30000	8		20	
<i>Type of family</i>	Nuclear family	10		25	
	Joint family	30		75	
	Extended family	0		0	
<i>Residence (place of living)</i>	Urban	33		82.5	
	Semi urban	1		2.5	
	Rural	6		15	
<i>Birth order of admitted newborn</i>	One	27		67.5	
	Two	12		30	
	Three	1		2.5	
	More than three	0		0	
<i>Medical diagnosis of the neonate</i>	Respiratory distress syndrome	15		37.5	
	Neonatal jaundice	9		22.5	
	Prematurity	15		37.5	
	Neonatal sepsis	1		2.5	
<i>Number of days admitted to the NICU</i>	Less than 3 days	26		65	
	3-7 days	13		32.5	
	8-14 days	1		2.5	
	More than 14 days	0		0	
<i>Birth weight</i>	Less than 1000 gm	0		0	
	1000-1500 gm	7		17.5	
	1501-2500 gm	11		27.5	
	More than 2500 gm	22		55	

Table cont...

<i>Gestational age</i>	37-42 weeks	24	60
	< 37 weeks	16	40
	>42 weeks	0	0
<i>Mode of delivery</i>	Normal vaginal delivery	9	22.5
	Operative delivery (LSCS)	31	77.5
	Assisted vaginal delivery	0	0
<i>Gender of the baby</i>	Male	25	62.5
	Female	15	37.5
	Other	0	0
<i>Previous experience of NICU admission</i>	Yes	3	7.5
	No	37	92.5
<i>Previous experience of neonatal death</i>	Yes	0	0
	No	40	100

\* In the above table item no 1 to 3 are different socio-demographic characteristics of mother and father whereas item no 4 to 16 are the common for both mother and father of neonates admitted in NICU

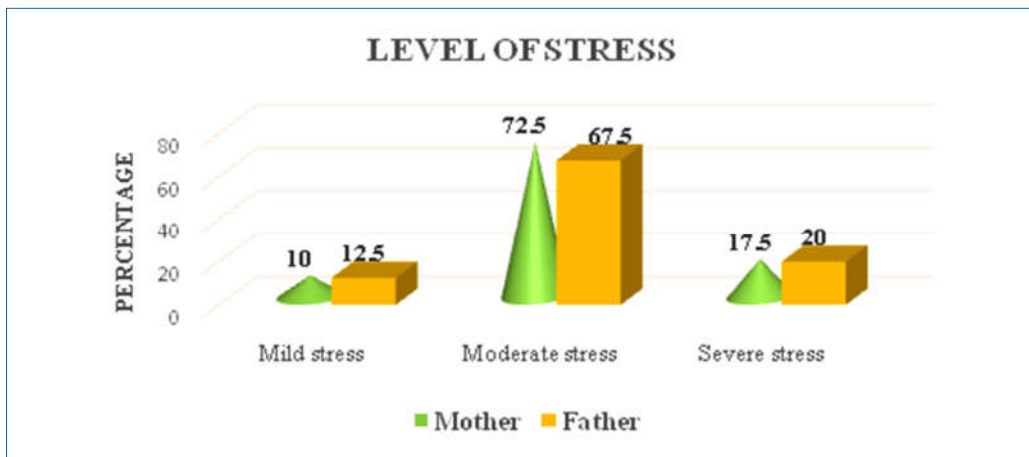


Fig. 1: Level of stress among parents of neonates admitted in NICU

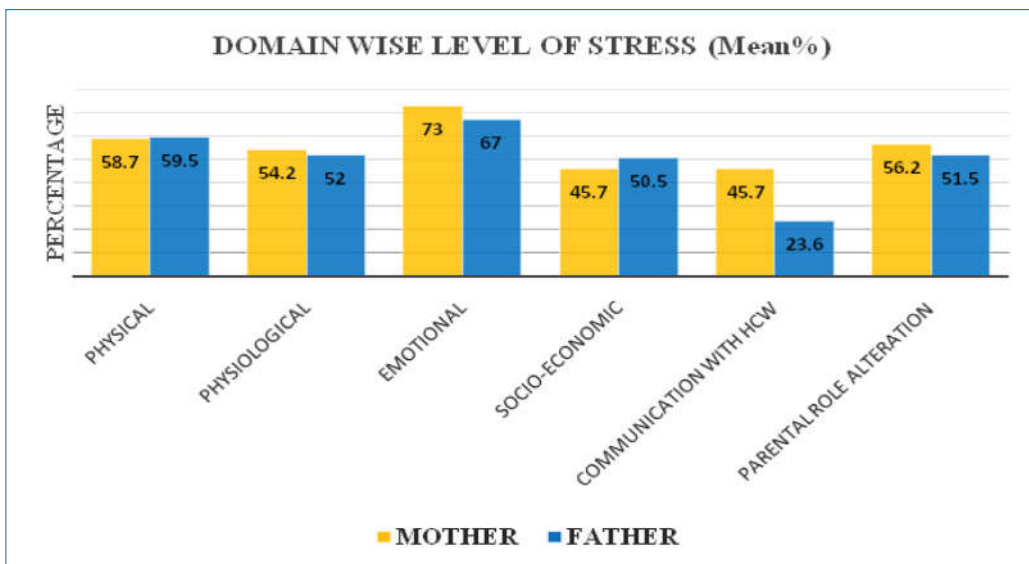


Fig. 2: Domainwise level of stress among parents

**Coping strategies adopted by parents:** Nearly 67.5% of mothers and 52.5% of fathers used partially adaptive coping strategies. Additionally, 15% of mothers and 30% of fathers employed adaptive coping strategies, while a notable 17.5% of both

mothers and fathers relied on maladaptive coping strategies (Fig. 3). Analysing coping strategies by domain, it was found that most mothers (55.8%) and fathers (73%) primarily used emotional coping strategies (Fig. 4).

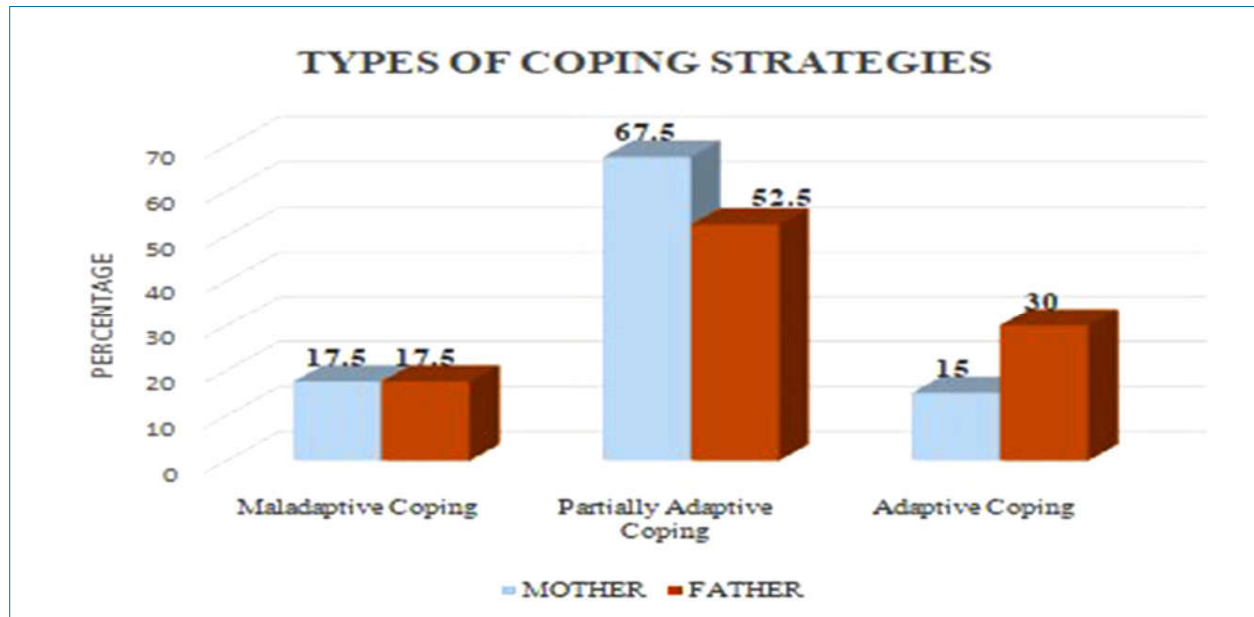


Fig. 3: Types of coping strategies adopted by parents

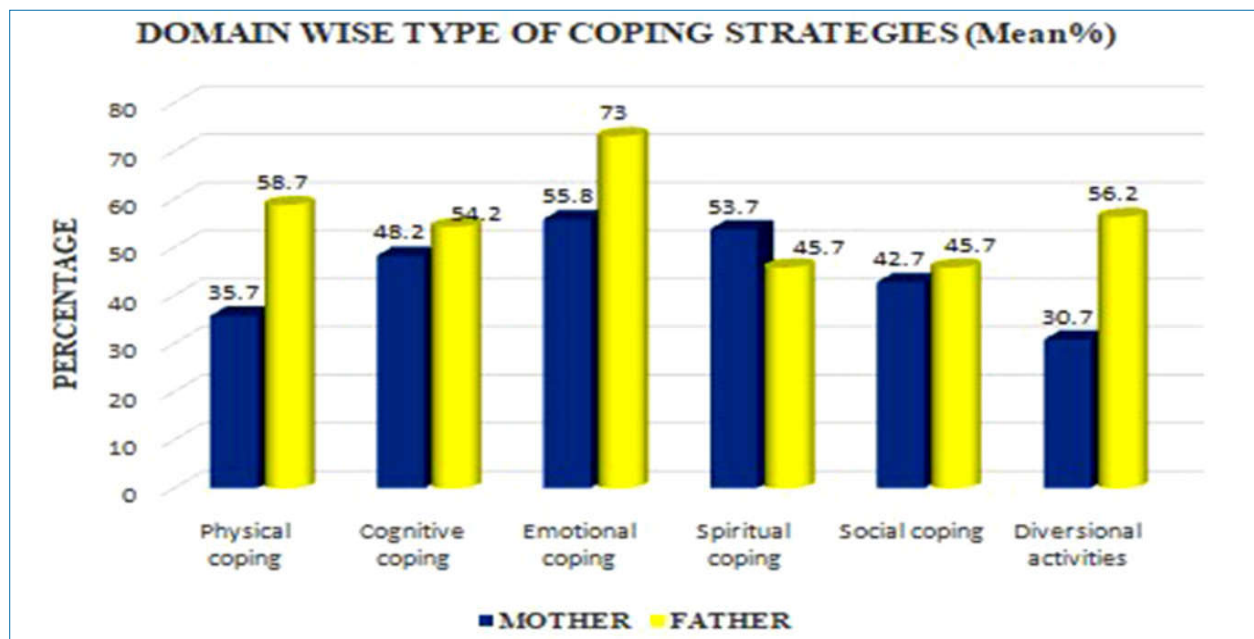


Fig. 4: Domainwise coping strategies used by parents of neonates admitted in NICU

**Correlation between Stress Levels and Coping Strategies:** The correlation coefficient for mothers' stress levels and coping strategies was -0.33 with a p-value of 0.017, indicating a moderate negative correlation. For fathers, the coefficient was -0.479

with a p-value of 0.001, also showing a moderate negative correlation. This suggests that as coping strategies improve, stress levels decrease, and vice versa, for both mothers and fathers of neonates in the NICU (see Table 2).

**Table 2:** Correlation between the level of stress and coping strategies adopted by parents

Study variable	Spearman’s coefficient of rank correlation		
	Correlation coefficient	P value	Inference
Level of stress of mothers	-0.33	0.01	Moderate negative correlation
Coping strategies adopted by mothers			
Level of stress of fathers	-0.47	0.01	Moderate negative correlation
Coping strategies adopted by fathers			

**Comparison of Stress Levels and Coping Strategies between Mothers and Fathers:** The mean rank for stress levels was 41.84 for mothers and 39.16 for fathers, with a Z-value of -0.516 and a p-value of 0.606. This result indicates no significant difference in stress levels between mothers and

fathers. In contrast, the mean rank for coping strategies was 34.41 for mothers and 46.59 for fathers, with a Z-value of -2.348 and a p-value of 0.019. This finding is significant at the 0.05 level, showing a notable difference in the coping strategies adopted by mothers and fathers (Table 3).

**Table 3:** Comparison between the level of stress and coping strategies adopted by parents

Study variable	Participants	Sample size	Mann-Whitney U-test			
			Mean rank	Z statistics	Calculated P-value	Interpretation of results
Stress	Mother	40	41.84	-0.516	0.606	Not significant
	Father	40	39.16			
Coping	Mother	40	34.41	-2.348	0.019	Significant
	Father	40	46.59			

**Association of Stress Levels and Coping Strategies with Socio-Demographic Variables:** Stress levels and coping strategies were significantly associated with the mode of delivery (df=2,  $\chi^2=7.73$ , p=0.02), employment status (df=6,  $\chi^2=15.3$ , p=0.01), medical diagnosis of neonates

(df=6,  $\chi^2=13.4$ , p=0.03), and the number of days admitted in the NICU (df=4,  $\chi^2=11.3$ , p=0.02). No significant associations were found with other socio-demographic variables such as age, educational qualification, type of family, residence, or birth order of the admitted neonate (Tables 4-7).

**Table 4:** Association of mothers stress level with the selected socio-demographic variable

Demographic variable	Mild	Moderate	Severe	df	X <sup>2</sup>	Table Value	P-value	Result	N=40
									<i>Age of mothers</i>
21-25 years	02	07	05	4	6.83	9.49	0.14	NS	
26-30 years	02	15	01						
above 30 years	0	07	01						
<b>Educational qualification of mothers</b>									
No formal education	0	01	0	6	5.16	12.59	0.52	NS	
Primary / Middle level	0	03	0						
Secondary/ Higher secondary	02	06	04						
Graduate & above	02	19	03						
<b>Employment status of Mother</b>									
Govt. Employee	0	02	0	6	2.67	12.59	0.84	NS	
Private Employee	0	03	0						
Self-Employee	0	01	0						
Unemployed	04	23	07						

Table cont...



<b>Monthly income of mothers</b>									
<Rs. 10000	01	08	0						
Rs. 10001-20000	01	11	06	6	6.76	12.59	0.34	NS	
Rs. 20001-30000	01	04	0						
>Rs. 30000	01	06	01						
<b>Type of family</b>									
Nuclear family	01	06	03	2	1.47	5.99	0.47	NS	
Joint Family	03	23	04						
<b>Residence of mothers</b>									
Urban	03	25	05						
Semi Urban	0	01	0	4	2.10	9.49	0.71	NS	
Rural	01	03	02						
<b>Birth order of admitted neonates</b>									
One	03	20	04						
Two	01	08	03	4	1.00	9.49	0.90	NS	
Three	0	01	0						
<b>Medical diagnosis of neonates</b>									
Respiratory distress syndrome	0	15	0						
Neonatal jaundice	01	07	01	6	11.3	12.59	0.07	NS	
Prematurity	03	08	04						
Neonatal sepsis	0	0	01						
<b>No. of days admitted in NICU</b>									
Less than 3 days	02	20	04						
3-7 days	02	08	03	4	1.47	9.49	0.83	NS	
8-14 days	0	01	0						
<b>Birth weight of neonates</b>									
1000-1500 gms.	01	05	01						
1501- 2500 gms.	02	08	01	4	2.35	6.63	0.67	NS	
More than 2500 gms.	01	16	05						
<b>Gestational age of neonates</b>									
37-40 weeks	02	19	03	2	1.39	5.99	0.49	NS	
<37 weeks	02	10	04						
<b>Mode of delivery</b>									
Normal vaginal delivery	03	04	02	2	7.73	5.99	0.02	S	
Operative delivery (LSCS)	01	25	05						
<b>Gender of baby</b>									
Male	02	19	04	2	0.46	5.99	0.79	NS	
Female	02	10	03						
<b>Previous experience of NICU admission</b>									
Yes	0	02	01	2	0.80	5.99	0.66	NS	
No	04	27	06						
<b>Previous experience of neonatal death</b>									
No	04	29	07	*	*	*	*	*	

(\*) Indicating that chi square not calculable because 80% cells have less than 5 expected frequency

**Table 5:** Association of fathers stress level with the selected socio-demographic variable

Demographic variable	Mild	Moderate	Severe	df	X <sup>2</sup>	Table Value	P Value	Significance
<i>N=40</i>								
<b>Age (in years)</b>								
21-25 years	2	1	2					
26-30 years	2	14	3	4	5.39	9.49	0.24	NS
Above 30 years	2	11	3					
<b>Educational qualification</b>								
Primary / Middle level	1	1	2					
Secondary/ Higher secondary	1	8	2	4	3.67	9.49	0.45	NS
Graduate & above	4	17	4					
<b>Employment status</b>								
Govt. Employee	0	4	0					
Private Employee	5	7	3	6	15.3	12.59	0.01	S
Self-Employee	1	12	1					
Unemployed	0	3	4					
<b>Monthly family income</b>								
<Rs. 10000	1	5	3					
Rs. 10001-20000	3	10	5	6	6.78	12.59	0.34	NS
Rs. 20001-30000	0	5	0					
>Rs. 30000	2	6	0					
<b>Type of family</b>								
Nuclear family	1	6	3	2	0.09	5.99	0.62	NS
Joint Family	5	20	5					
<b>Residence</b>								
Urban	6	21	6					
Semi Urban	0	1	0	4	2.26	9.49	0.68	NS
Rural	0	4	2					
<b>Birth order of admitted neonates</b>								
One	4	17	6					
Two	2	9	1	4	5.1	9.49	0.27	NS
Three	0	0	1					
<b>Medical diagnosis of neonates</b>								
Respiratory distress syndrome	0	13	2					
Neonatal jaundice	1	7	1	6	13.4	12.59	0.03	S
Prematurity	5	6	4					
Neonatal sepsis	0	0	1					
<b>No. of days admitted in NICU</b>								
Less than 3 days	3	21	2					
3-7 days	3	5	5	4	11.3	9.49	0.02	S
8-14 days	0	0	1					
<b>Birth weight of neonates</b>								
1000-1500 gms	1	4	2					
1501-2500 gms	1	8	2	4	0.89	9.49	0.92	NS
More than 2500 gms	4	14	4					

*Table cont...*



<b>Gestational age of neonates</b>								
37-40 weeks	2	17	5	2	2.11	5.99	0.34	NS
<37 weeks	4	9	3					
<b>Mode of delivery</b>								
Normal vaginal delivery	2	5	2	2	0.59	5.99	0.74	NS
Operative delivery (LSCS)	4	21	6					
<b>Gender of baby</b>								
Male	2	19	4	2	3.95	5.99	0.13	NS
Female	4	7	4					
<b>Previous experience of NICU admission</b>								
Yes	1	2	0	2	1.37	5.99	0.5	NS
No	5	24	8					
<b>Previous experience of neonatal death</b>								
Yes	0	0	0	*	*	*	*	*
No	6	26	8					

(\*) Indicating that chi square not calculable because 80% cells have less than 5 expected frequency

**Table 6:** Association of mothers coping strategies with the selected socio-demographic variable

N=40

Demographic variable	Mal adaptive	Partially adaptive	Adaptive	df	$\chi^2$	Table Value	P-Value	Significance
<b>Age of Mothers</b>								
21-25 years	1	10	3					
26-30 years	4	12	2	4	2	9.49	0.73	NS
Above 30 years	2	5	1					
<b>Educational qualification of mothers</b>								
No formal education	0	1	0					
Primary / Middle level	1	1	1	6	3.2	12.59	0.77	NS
Secondary/ Higher secondary	3	8	1					
Graduate & above	3	17	4					
<b>Employment status of mother</b>								
Govt. Employee	1	1	0					
Private Employee	0	3	0	6	3.7	12.59	0.71	NS
Self-Employee	0	1	0					
Unemployed	6	22	6					
<b>Monthly family income of mothers</b>								
<Rs. 10000	1	4	4					
Rs. 10001-20000	4	13	1	6	10	12.59	0.12	NS
Rs. 20001-30000	0	4	1					
>Rs. 30000	2	6	0					
<b>Type of family</b>								
Nuclear family	3	7	0	2	3.2	5.99	0.2	NS
Joint Family	4	20	6					
<b>Residence of mothers</b>								
Urban	7	22	4					
Semi Urban	0	1	0	4	3.3	9.49	0.5	NS
Rural	0	4	2					

Table cont...

<b>Birth order of admitted neonates</b>								
One	3	19	5					
Two	3	8	1	4	6.3	9.49	0.17	NS
Three	1	0	0					
<b>Medical diagnosis of neonates</b>								
Respiratory distress syndrome	2	13	0					
Neonatal jaundice	1	5	3	6	10.7	12.59	0.09	NS
Prematurity	3	9	3					
Neonatal sepsis	1	0	0					
<b>No. of days admitted in NICU</b>								
Less than 3 days	3	19	4					
3-7 days	4	8	1	4	8.1	9.49	0.08	NS
8-14 days	0	0	1					
<b>Birth weight of neonates</b>								
1000-1500 gms	1	4	2					
1501-2500 gms	3	5	3	4	5.9	9.49	0.2	NS
>2500 gms	3	18	1					
<b>Gestational age of neonates</b>								
37-40 weeks	3	18	3					
<37 weeks	4	9	3	2	1.6	5.99	0.44	NS
<b>Mode of delivery</b>								
Normal vaginal delivery	0	5	4	2	8.9	5.99	0.01	S
Operative delivery	7	22	2					
<b>Gender of baby</b>								
Male	4	19	2					
Female	3	8	4	2	2.9	5.99	0.22	NS
<b>Previous experience of NICU admission</b>								
Yes	1	2	0	2	0.9	5.99	0.62	NS
No	6	25	6					
<b>Previous experience of neonatal death</b>								
Yes	0	0	0	*	*	*	*	*
No	7	27	6					

(\*) Indicating that chi square not calculable because 80% cells have less than 5 expected frequency

**Table 7:** Association of fathers coping strategies with the selected socio-demographic variable

								N=40
Demographic variable	Mal adaptive	Partially adaptive	Adaptive	df	X <sup>2</sup>	Table Value	P-Value	Significance
<b>Age of Fathers</b>								
21-25 years	2	1	2					
26-30 years	2	13	4	4	5.11	9.49	0.27	NS
Above 30 years	3	7	6					
<b>Educational qualification of fathers</b>								
Primary / Middle level	1	1	2					
Secondary / Higher secondary	3	6	2	4	2.88	9.49	0.57	NS
Graduate & above	3	14	8					

Table cont...

<b>Employment status of fathers</b>								
Govt. Employee	0	3	1					
Private Employee	1	8	6					
Self-Employee	4	7	3	6	4.58	12.59	0.59	NS
Unemployed	2	3	2					
<b>Monthly income of Fathers</b>								
<Rs. 10000	4	2	3					
Rs. 10001-20000	1	11	6					
Rs. 20001-30000	0	4	1	6	9.22	12.59	0.16	NS
>Rs. 30000	2	4	2					
<b>Type of family</b>								
Nuclear family	3	5	2					
Joint Family	4	16	10	2	1.65	5.99	0.43	NS
<b>Residence of Fathers</b>								
Urban	5	18	10					
Semi Urban	0	1	0	4	2.33	9.49	0.67	NS
Rural	2	2	2					
<b>Birth order of admitted neonates</b>								
One	3	15	9					
Two	3	6	3	4	5.99	9.49	0.2	NS
Three	1	0	0					
<b>Medical diagnosis of neonates</b>								
Respiratory distress syndrome	3	8	4					
Neonatal jaundice	2	4	3					
Prematurity	2	8	5	6	1.48	12.59	0.96	NS
Neonatal sepsis	0	1	0					
<b>No. of days admitted in NICU</b>								
Less than 3 days	4	15	7					
3-7 days	3	6	4	4	2.94	9.49	0.56	NS
8-14 days	0	0	1					
<b>Birth weight of neonates</b>								
1000-1500 gms	1	3	3					
1501- 2500 gms	3	5	3	4	1.7	9.49	0.78	NS
More than 2500 gms	3	13	6					
<b>Gestational age of neonates</b>								
37-40 weeks	4	14	6					
<37 weeks	3	7	6	2	0.91	5.99	0.63	NS
<b>Mode of delivery</b>								
Normal vaginal delivery	0	4	5					
Operative delivery (LSCS)	7	17	7	2	4.7	5.99	0.09	NS
<b>Gender of baby</b>								
Male	3	16	6					
Female	4	5	6	2	3.63	5.99	0.16	NS
<b>Previous experience of NICU admission</b>								
Yes	1	0	2					
No	6	21	10	2	3.62	5.99	0.16	NS

*Table cont...*

**Previous experience of neonatal death**

Yes	0	0	0	*	*	*	*	*
No	7	21	12					

(\*) Indicating that chi square not calculable because 80% cells have less than 5 expected frequency

**DISCUSSION**

The results of this study show that most neonates admitted to the NICU (77.5%) were delivered via operative delivery (LSCS), while only 22.5% were delivered vaginally. Among these neonates, 75% were admitted due to prematurity and respiratory distress syndrome, 22.5% due to neonatal jaundice, and only 2.5% due to neonatal sepsis. Most neonates (65.0%) stayed in the NICU for less than 3 days, followed by 32.5% staying for 3-7 days, and 2.5% staying for 8-14 days. About 55.0% of the neonates had a birth weight of more than 2500 grams.

Similar findings were observed in other studies. For instance, a cross-sectional study in Bhubaneswar involving 100 parents found that 62% of neonates were admitted due to perinatal asphyxia, prematurity, and respiratory distress. The average NICU stay was 6.8 days, ranging from 2 to 15 days, and 46% of the neonates had normal birth weight. Another descriptive study in Guwahati with 150 participants reported that most neonates were admitted for 2-4 days (41%), followed by 5-7 days (32%), more than 7 days (15%), and less than 2 days (12%).

In contrast, a study in Gwalior with 400 parents found that 55.5% of neonates were born via normal vaginal delivery, with 46% having low birth weight. The average NICU stay was 11.5 days, ranging from 7 to 28 days. Common reasons for admission included neonatal sepsis (27.25%), perinatal asphyxia (22.5%), and prematurity (13.5%). A quantitative study in Srinagar with 60 samples showed that most neonates were admitted for 2-4 days (48%), followed by 5-7 days (28%), more than 7 days (11%), and less than 2 days (12%).

The study findings depict that most parents, regardless of gender, experienced moderate stress due to their neonate's NICU admission. Additionally, 17% to 20% of parents were severely stressed, while only 10% to 15% were mildly stressed. Stress primarily affected the emotional domain for these parents. These findings are consistent with various studies worldwide, which indicate that parents generally experience moderate stress in the NICU setting. For example, a descriptive study

in Srinagar involving 60 mothers found that 85% had moderate stress, 8.3% had severe stress, and 6.7% had mild stress. However, this study also noted that the stress predominantly impacted the cognitive domain, focusing on concerns about the child's condition and prognosis (mean percentage 89.11%).<sup>21</sup>

Similarly, a study in Karad, India, involving 40 participants, reported that 70% of mothers had moderate stress and 30% had severe stress. Australian research with 40 participants also found moderate stress levels among parents. A descriptive study in Tirupati with 100 mothers showed that 27% had mild stress, 49% had moderate stress, and 24% had severe stress. Additionally, a study in Gwalior with 400 parents indicated that the NICU environment was moderately stressful for both mothers (mean = 2.73 ± 0.334) and fathers (mean = 2.37 ± 0.292).<sup>20</sup>

Contrarily, some studies reported higher stress levels. For instance, research in Dadra & Nagar Haveli found that 84% of mothers experienced severe stress, while only 14% had moderate stress. Another study with 60 mothers revealed that 98.33% experienced severe stress.

Overall, these findings suggest that parents of neonates admitted to the NICU experience moderate to high levels of stress, which varies based on the neonate's clinical condition and the parents' perceptions of their child's prognosis.

Findings suggest that most parents used partially adaptive coping strategies. Notably, 17.5% of parents adopted maladaptive coping strategies, while 30.0% of fathers used adaptive coping strategies compared to only 15.0% of mothers. The domain-wise analysis indicated that emotional coping strategies were most commonly used.

These findings align with those of a quantitative study involving 60 mothers, which showed that the majority (93.3%) had average coping abilities, 6.7% had good coping, and none had low coping. The study also noted that emotional coping was the most prevalent strategy among these mothers (mean percentage 90.28%).<sup>21</sup> Similarly, a descriptive cross-sectional study with 40 participants found that 87.5% had average coping skills, and 12.5%

had good coping skills. Another study in Bengaluru with 60 mothers reported that 58.3% had moderate coping strategies, 20% had good coping, and 21.6% had poor coping mechanisms.

In contrast, a descriptive study in Guwahati with 150 participants found that most (59%) had poor coping mechanisms, 37% had moderate coping, and only 4% had high coping abilities.

The study results noted a moderate negative correlation between the level of stress and the coping strategies adopted by both mothers and fathers of neonates admitted to the NICU. This means that as parents use more adaptive coping strategies, their stress levels tend to decrease. Conversely, less effective coping strategies are associated with higher stress levels.

These findings are supported by various studies worldwide. For instance, a study on parental stress assessment reported a significant negative correlation between coping and stress scores ( $r = -0.308$ ,  $p = 0.017$ ), indicating that improved coping strategies were associated with reduced stress.<sup>21</sup> Similarly, a study involving 100 mothers found a significant correlation ( $r = 0.238$ ) between stress and coping strategies, with a p-value of less than 0.05, suggesting that effective coping was linked to lower stress levels. In contrast, another study with 40 participants reported no significant relationship between stress and coping strategies, as indicated by a two-tailed p-value of 0.

The study found no significant difference in the level of stress between mothers and fathers. However, there were differences in the coping strategies they adopted. This finding aligns with a cross-sectional study of 100 parents, which also reported no significant difference in stress levels between mothers and fathers. Conversely, a study in Austria found that mothers experienced higher stress compared to fathers, and a Malaysian study with 104 parents similarly indicated higher stress levels among mothers. However an observational study in Portugal revealed that mothers perceived higher stress during their infant's NICU hospitalization than fathers.

Findings revealed significant associations between stress levels, coping strategies, and several socio-demographic variables, such as employment status, mode of delivery, medical diagnosis, and the number of days admitted to the NICU. These results are consistent with several other studies. For example, a descriptive study involving 50 mothers highlighted a significant association between stress levels, coping, and variables like

hospital stay length and maternal occupation. Another quantitative study with 150 participants found a significant link between coping strategies and monthly family income ( $\chi^2(10) = 29.58$ ,  $p < 0.05$ ). However, contrary findings were reported in a descriptive study, which found no significant association between stress levels, coping strategies, and selected demographic variables.<sup>21</sup>

Implications, Limitations and Future Recommendations:

The findings of this study have significant implications for nursing practice, particularly in the NICU setting. Nurses play a crucial role in recognizing and alleviating the psychological stress experienced by parents, which can significantly impact both the parents' well-being and the neonate's health outcomes. Developing targeted counselling protocols and including parents in the care process can enhance parental coping mechanisms and reduce stress levels. Furthermore, integrating educational programs for nurses about the emotional and psychological needs of NICU parents can foster a more empathetic and holistic approach to care. The study also underscores the importance of involving both mothers and fathers in NICU care to address their distinct stressors and coping strategies effectively.

However, this study has several limitations that should be addressed in future research. The sample size was relatively small, comprising only 80 participants, which may limit the generalizability of the findings. Additionally, the study focused solely on specific dimensions of stress and coping, measured using closed-ended questions, which may not capture the full spectrum of parental experiences. Future research should consider larger, more diverse samples and employ mixed-methods approaches to provide a more comprehensive understanding of parental stress and coping. Longitudinal studies could also offer insights into the long-term effects of NICU-related stress on parents. Moreover, exploring the impact of specific interventions aimed at reducing stress and enhancing coping strategies among both mothers and fathers would be valuable in developing effective support mechanisms in the NICU environment.

## CONCLUSION

This study highlights the significant psychological impact of NICU admission on parents, with both mothers and fathers experiencing moderate to



severe stress. The findings show that emotional instability is a major stressor and that better coping mechanisms can significantly reduce stress levels. These insights call for a paradigm shift in NICU care to include more family-centred and compassionate approaches that address parents' emotional needs and involve them in the care process. By broadening our understanding and implementing comprehensive support systems, we can foster a more resilient, emotionally healthy environment for both parents and their neonates. This approach not only benefits the immediate family unit but also sets a precedent for compassionate care in neonatal health services globally.

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