



## Correlation between Stress and Coping Patterns among Mothers whose Neonate Admitted in NICU

Amar Mulla<sup>1</sup>, Brijal Patel<sup>2</sup>

M. Sc. (N), PhD Scholar, Assistant Professor, Shri Vinoba Bhave College of Nursing, Silvassa, DNH  
, Assistant Professor, Nootan College of Nursing, Visnagar, Mehesana, Gujarat

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**Background:** Stress is a feeling of being under abnormal pressure. This pressure can come from different aspects of day-to-day life. Such as an increased workload, a transitional period, an argument with family or new and existing financial worries. Stress has a cumulative effect, with each stressor building on top of one another. Hospitalization in the Neonatal Intensive Care Unit (NICU) may continue for a few days to a few months, depending on the level of neonatal immaturity or medical condition. Since NICU admission is a stressful, difficult, and terrifying experience for both infants and parents. An adaptive response as behavior that maintains the integrity of the individual makes themselves to adopt the situation. **Aims:** Aim of the study was to find out the correlation between stress and coping patterns among mothers of neonates admitted in NICU. It will help the health care professionals to plan interventions to minimize stress and strengthen positive coping strategies. **Methodology:** A descriptive study was done on 50 samples using Stress level modified PIP and Coping Patterns Brief cope scale. The result was analyzed by using descriptive and inferential statistics on the basis of objectives and hypothesis. **Result:** Finding of the study showed that the correlation calculated between stress and coping patterns score was (0.183) which revealed a weak positive correlation between stress and coping patterns of mothers whose neonate admitted in NICU. **Conclusion:** Hence, it can be concluded that as the stress increases the coping patterns lowers and vice versa which means that as the stress increased mothers used maladaptive coping patterns and vice versa.

**Keyword:** Stress, Coping Pattern, NICU, Neonate, Mother.

### I. INTRODUCTION:

Stress is a feeling of being under abnormal pressure. This pressure can come from different aspects of day-to-day life. Such as an increased workload, a transitional period, an argument with family or new and existing financial worries. Stress

has a cumulative effect, with each stressor building on top of one another.<sup>1</sup>

During these situations one may feel threatened or upset and body might create a stress response. This can cause a variety of physical symptoms, change the behaviour, and leads to experience more intense emotions. Stress affects in a number of ways, both physically and emotionally and in varying intensities. Stress: In a medical or biological context stress is a physical, mental, or emotional factor that causes bodily or mental tension. Stressors can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure). Stress can initiate the "fight or flight" response, a complex reaction of neurologic and endocrinology systems.<sup>2</sup>

Psychologists and other have struggled for many years to establish an effective definition of the term stress. This term is used loosely today and still lacks a definitive explanation. Stress may be viewed as individual's reaction to any change that requires an adjustment or response, which can be physical, mental, emotional. Responses directed at stabilizing internal biological processes and preserving self-esteem can be viewed as healthy adaptations to stress.<sup>3</sup>

Roy (1976) defined an adaptive response as behavior that maintains the integrity of the individual. Adaptation is viewed as positive and is correlated with a healthy response. When behavior disrupts the integrity of the individual, it is perceived as maladaptive. Maladaptive response by the individual are considered to be negative or unhealthy.<sup>3</sup> These adaptive and maladaptive responses are also called as coping responses.

Coping means to invest one's own conscious effort, to solve personal and interpersonal problems, in order to try to master, minimize or tolerate stress and conflict. The psychological coping mechanisms are commonly termed coping strategies or coping skills. The term coping generally refers to adaptive (constructive) coping strategies, that is, strategies which reduce stress. In contrast, other coping strategies may be



coined as maladaptive, if they increase stress. Maladaptive coping is therefore also described, when looking at the outcome, as non-coping. Furthermore, the term coping generally refers to reactive coping, i.e. the coping response which follows the stressor. This differs from proactive coping, in which a coping response aims to neutralize a future stressor. Subconscious or non-conscious strategies are generally excluded from the area of coping.<sup>4</sup>

The birth of a baby is a wonderful and very complex process. Many physical and emotional changes occur for both mother and baby. A baby must make many physical adjustments to life outside the mother's body. Leaving the uterus means that a baby can no longer depend on the mother's blood supply and placenta for important body functions.<sup>5</sup> Though most of the neonates adjust extra uterine life well high-risk neonates may require NICU admission.

Hospitalization in the Neonatal Intensive Care Unit (NICU) may continue for a few days to a few months, depending on the level of neonatal immaturity or medical condition. Since NICU admission is a stressful, difficult, and terrifying experience for both infants and parents.<sup>6</sup> Special attention has been paid to the mothers of NICU admitted infants in recent years. Many studies have shown that parents of premature or low-birth-weight infants experience higher levels of depression and anxiety and that they are at a higher risk of communication problems, sleep disturbances, family tension, and economic problems.<sup>7</sup> The traumatic effects of early childbirth impair mothers' judgment and thinking abilities, thus augmenting tension and stress of having high-risk infants.<sup>8</sup>

Neonatal mortality rate refers to deaths of infants aged less than 28 days. In 2018, the neonatal mortality rate in Malaysia was approximately 4.6 deaths per one thousand live births.<sup>9</sup>

In 2018, Myanmar had the highest crude death rate among the Southeast Asian countries with 8.2 deaths per thousand populations, followed by Thailand, Indonesia and the Philippines. In 2015, Myanmar had the second-highest infant mortality rate with 46 infant deaths per thousand live births in Southeast Asia.<sup>10</sup>

In 2018, neonatal mortality rate for India was 22.7 deaths per thousand live births. Neonatal mortality rate of India fell gradually from 85.2 deaths per thousand live births in 1969 to 22.7 deaths per thousand live births in 2018.<sup>11</sup>

The Maharashtra State witnessed the higher number of infant deaths in the last three

years with 2018-2019 alone accounting for the death of 16,539 newborn babies due to infection, pneumonia, low birth weight and breathing defects. Public Health Minister Eknath Shinde, said in a written reply in Assembly, according to Health Management Information System (HMIS) report, the number of new born babies who died in 2016-17 was 10,348, and in 2017-18 it was 13,069.

The State has set a target to reduce infant mortality rate at 10 per 1,000 live births by 2030 under the Sustainable Development Goal (SDG). The IMR in Maharashtra was 22 in 2014, and has come down to 19, he said.<sup>12</sup>

Higher maternal stress was found to be associated with poor family support during pregnancy, mothers' perception of the baby's discomfort, extremely low birth weight of the baby, baby being on ventilator, likely post-partum depression, and moderate to severe anxiety symptoms. Those who reported poor support during pregnancy had higher maternal stress score. It was noted that parents get help from various sources such as grandparents, friends, and neighbors during hospitalization, which may be instrumental in mitigating some of the parental stress.<sup>13</sup>

➤ Purpose of the study:

The purpose of the study was to find out correlation between stress and coping patterns of mother's whose neonate admitted in NICU.

➤ Objectives of the study:

- assess the level of stress among mothers of neonates admitted in NICU.
- assess the level of coping patterns among mothers of neonates admitted in NICU.
- find correlation between stress and coping patterns among mothers of neonates admitted in NICU.

➤ Assumption:

Mother may have stress due to neonate's admission in NICU and may be using some coping patterns to prevent, avoid or manage stress accordingly.

➤ Conceptual framework:

Roy's adaptation model was accepted for the present study. It is based on general system theory as applied to the individual and Nelson's view of adaptation is related to focal, contextual and residual stimuli. The focus of Roy's model is the set of processes by which a mother adapts to environmental stressors of neonate admitted in NICU. Each mother is a unified bio- psychosocial being in constant interaction with a changing external environment. When the demands of environmental stimuli are too great or the mother's adaptive knowledge related to neonate admitted in NICU are too low the mother's responses are



ineffective for coping.

## II. METHODOLOGY:

**Research approach:** In this study quantitative approach was used to find correlation between stress and coping patterns among mothers of neonates admitted in NICU.

**Research design:** In this study descriptive research design was selected to find correlation between stress and coping patterns among mothers of neonates admitted in NICU.

**Variables:** Dependent variable: In this study stress and coping patterns were dependent variables.

**Extraneous variables:** In this study following were the extraneous variables: **a) Ill Neonate:** Age, sex, birth order, diagnosis, duration of illness, siblings, gestational age, type of assistive devices used, general condition,

**b) Mother's data:** Age, age of spouse, parity, religion, previous experience of handling sick neonate, educational level, educational level of spouse, occupation, occupation of spouse, monthly family income, type of family, area of residence

**Research setting:** The present study was conducted in Shri Vinoba Bhava Civil Hospital, Silvassa, Dadra & Nagar Haveli (DNH) which is 316 bedded hospitals with a State of Art Accident prevention cum Trauma and Emergency Medical Services, which has 40 bedded NICU.

**Population:** The population for the present study was the mothers of neonates in Dadra & Nagar Haveli.

**Target Population:** The target population for the present study comprise mothers whose neonates are admitted in NICU of Shri Vinoba Bhava Hospital, Silvassa, Dadra & Nagar Haveli.

**Sample:** In this study sample consisted of mothers who had admitted their neonates in NICU, and who met the inclusion criteria.

**Sample size:** In present study sample consist of 50 mothers whose neonates are admitted in NICU of Shri Vinoba Bhava Civil Hospital, Silvassa, Dadra & Nagar Haveli which was calculated based on the findings of the previous studies and pilot study using statistical formula.

**Sampling technique:** In present study judgmental sampling technique was used.

**Sampling Criteria:** The following criteria was used in the present study to select samples:

**Inclusion criteria:** This study included the mothers of neonates admitted in NICU fulfilling following inclusion criteria:

- Mother whose neonate was admitted in inborn or outborn NICU of SVBCH, Silvassa, DNH.

- Mothers who can speak and understand English or, Gujarati and Hindi.

- Mothers who were willing to participate in the study.

**Exclusion criteria:**

- Mothers who were not residing in Dadra & Nagar Haveli.

- Mothers who had hearing and speech impairment.

**Ethical Consideration:** Ethical clearance was obtained from the Institutional Ethical Committee of Shri Vinoba Bhava Civil Hospital, Silvassa, DNH, Administrative permission was taken from Director, Medical and Health Services, Dadra & Nagar Haveli and informed written consent was taken from research participants.

**Data Collection Tool:** To assess the correlation between stress and coping patterns among mother whose neonate is admitted in NICU following tools were used:

1. Part A: Demographic Proforma: It contains the variables related to ill neonate, mother.
2. Part B: Standardized tool adopted from Pediatric Inventory for Parents developed by Randi Streisand (2001) which is further modified by the researcher.
3. Part C: Standardized tool adopted from Parents Coping Scale (Modified version of Brief Cope Scale) developed by Caver, which is further modified by the researcher.

**Part A: Demographic Proforma:** It contains the variables related to ill neonate, mother.

**A. Ill Neonate:**

Age, sex, birth order, diagnosis, duration of illness, siblings, gestational age, type of assistive devices used, general condition.

**B. Mother's data:**

Age, age of spouse, parity, religion, previous experience of handling sick neonate, educational level, educational level of spouse, occupation, occupation of spouse, monthly family income, type of family, area of residence<sup>26</sup>

**Part B: The Pediatric Inventory for Parents (PIP)**

The pediatric inventory for parents (PIP) is a standardized tool which was developed by Randi Streisand in 2001. It is a 42 -item self-report measure that asks caregivers to rate the frequency and intensity of particular stressors. The PIP assesses stress (both difficulty and frequency) under the areas of communication, emotional functioning, medical care, and role functioning. PIP utilized a 5-point Likert scale (1 = not at all to 5= extremely) for difficulty and a 5-point Likert scale (1 = never to 5 = very often) for frequency. The items on the PIP were summed separately to yield



difficulty and frequency scores and were added together to form an overall score. Higher scores on the PIP represented higher levels of parenting stress.

**LEVELS OF STRESS AS PER SCORE:**

Minimum Score: 32  
Maximum Score: 160

Levels of Stress	Score range	Percentage (%)
Mild Stress	< 54	< 34 %
Moderate Stress	54-109	34-68 %
Severe Stress	> 109	> 68 %

**Part C: Parent’s Coping Scale (Modified Version of Brief Copie)**

Brief cope is a 28-item rating scale developed by Carver which asks the respondents to rate the strategies used to cope to the situation. The tool selected for present study is the modified form of brief cope. The tool contained 14 areas such as planning (item- 4), self-distraction (item- 1,8), religion (item- 11,14), using emotional support, acceptance (item- 9,12), venting (item- 2,10), denial (item- 5) ,self-blame (item- 6,13), active coping, use of informational support (item- 3), humor and behavioral disengagement (item- 7).

**Scoring of the tool**

A four-point scale will be used for all items with the scoring given for each response, graded as: 1=Never, 2=Sometime, 3=Often, 4=Always.

The total score ranges from 14-56. The total score is arbitrarily classified as low coping (< 19) medium coping (19-37) and high coping (> 37). Item number 1, 2,3, 4,8,9,11

,12,14) are positive and will be scored as always=4, often=3, sometime=2 and never=1. Item number (5, 6, 7,10, 13) are negative and was scored reversely.

Levels of coping patterns as per score:

Minimum Score: 14, Maximum Score: 56

Levels of Coping	Score range	Percentage (%)
Low coping	< 19	< 39 %
Medium coping	19-37	34-68 %
High Coping	> 37	> 66 %

Translation of the tool: The tool was translated to Gujarati and Hindi by language experts. The language validity was determined by giving the tool to another language expert to retranslate the tool to English.

Content Validity: The prepared tool along with objectives was given to Professor, Associate Professor, Assistant Professor, Clinical Instructor in the area of the Child Health Nursing, Obstetrical and Gynecological Nursing, Medical Surgical Nursing, Community Health Nursing, Mental Health Nursing, Neonatologist, HOD of Pediatric Department and Psychiatrists.

Pretesting and reliability of the tool: The tool was given to mothers each in Hindi and Gujarati language for pretesting whose neonates

were admitted in NICU of Shri Vinoba Bhave Civil Hospital, Silvassa, some items of the tool were modified. Average time taken by mothers to complete the tool was 30-45 minutes.

The reliability of tool was established by giving it to mothers whose neonates were admitted in inborn or outborn NICU of SVBCH, Silvassa, DNH. Reliability was established by test-retest method and it was found to be 0.704 which means the tool is highly reliable.

Pilot Study: The Pilot study was conducted in Shri Vinod Bhave Civil Hospital, Silvassa on 10% of the sample size same as the final study.

Data Analysis: Data obtained was analyzed by using descriptive and inferential statistics on the



basis of objective of the study.

III. RESULTS:

The analysis and interpretation were done according to the objectives of the study.

The study findings are organized under following headings:

Section -1:Description of sample characteristics

Section-2:Description of mothers' level of stress whose neonate admitted in NICU

Section-3:Description of mothers' level of coping patterns whose neonate admitted in NICU

Section 4: Correlation between stress and coping patterns of mothers whose neonate admitted in NICU.

SECTION I: SAMPLE CHARACTERISTICS:

The sample characteristics revealed that out of 50 sample in case of ill neonate 32 (64%) were in the age (in days) 0-3, 26 (52%) were male, 34 (68%) were first in birth order, 20 (40%) were

diagnosed as preterm baby, 41 (82%) had 0-3 days of duration of illness, 34 (68%) had no siblings, 25 (50%) were in 33-37 weeks of gestational age, 42 (84%) had cardiac monitor as assistive device, 24 (48%) had fair general condition. According to mother's data out of 50 26 (52%) were in the age group of 18-22, 24 (48%) had spouse age in the age group of 21-25 years, 32 (64%) were multipara, (84%) belong to Hindu religion, 33 (66%) had no previous experience, 18(36%) were educated up to high school certificate, 26 (52%) had spouse education up to high school certificate, 24 (48%) mothers were unemployed, 12 (24%) had spouse occupation as skilled worker and shop and market sales worker, 13 (26%) had monthly family income of Rs. 3908-11707/-, 29 (58%) belong to joint family, 2 (54%) were residing in rural area.

SECTION-2

Objective 1: To assess the level of stress among mothers of neonates admitted in NICU.

Table 1

Frequency and Percentage distribution of level of stress among mothers of neonates admitted in NICU according to stress score

N=50

Stress Score			
Level of Stress	Score	Frequency (n)	Percentage (%)
Mild Stress	<54	0	0
Moderate Stress	54-109	7	14.0
Severe Stress	>109	43	86.0

Minimum Stress Score = 32

Maximum Stress Score = 160

Table 1.1

Mean and Mean Percentage distribution of level of stress as per stress areas among mothers of neonates admitted in NICU according to stress score

N=50

How Often Areas of Stress	How Difficult							Area wise priority
	No. of Items	Min. Score	Max. Score	Mean Mean	Mean %	Mean Mean %		
Communication	4	4	20	13.608	68.039	14.431	72.157	3

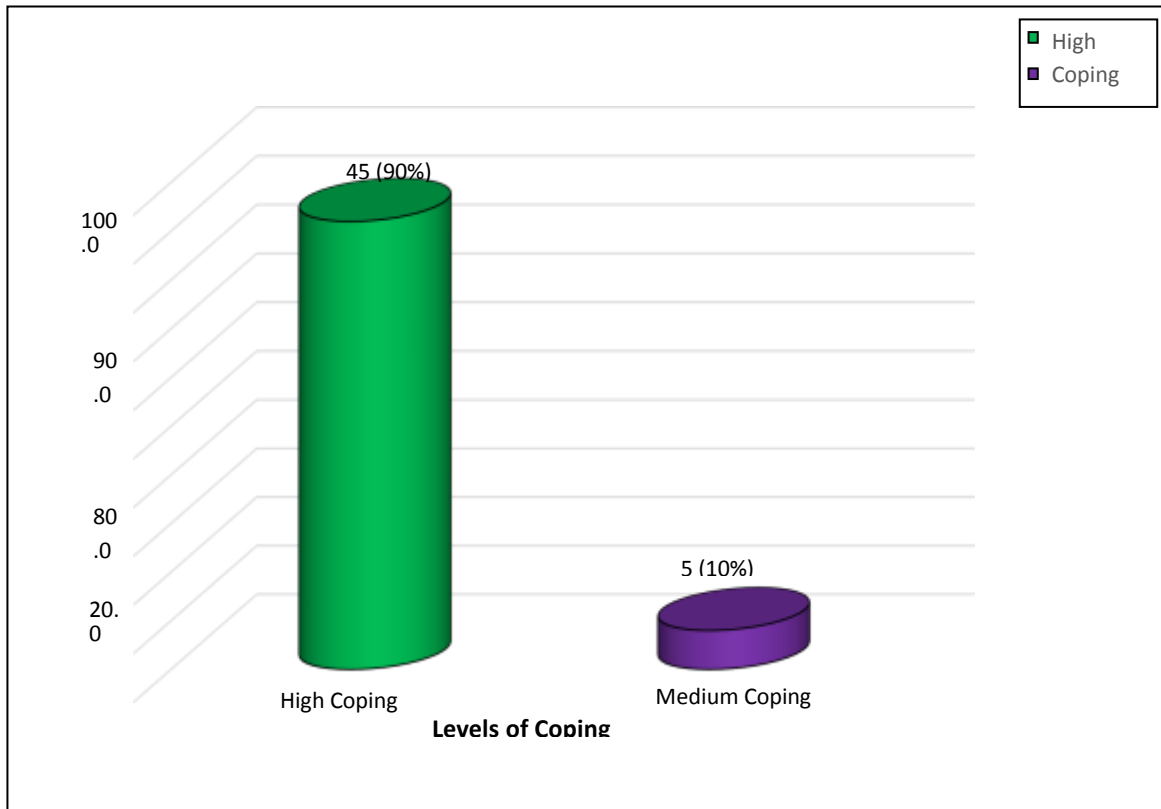




Emotional Functiong	8	8	40	32.667	81.668	31.961	79.903	1
Role Functioning	4	4	20	15.608	78.04	15.294	76.47	2

**Section 3:**

**Objective 2:** To assess the level of coping patterns among mothers of neonates admitted in NICU.



**Table 2.1**

**Mean and Mean Percentage distribution of coping patterns as per coping areas among mothers of neonates admitted in NICU according to stress score**

N=50

Coping Patterns							
Area of patterns	CopingNo. of Items	ofMin. Score	Max. Score	Mean	Mean %	Area priority	wise
Self -distraction	2	2	8	5.843	73.04	2	
Venting	2	2	8	6.216	77.7	5	
Self-Blame	2	2	8	6.353	79.41	6	
Emotional support	2	2	8	6.608	75.85	4	
Religion	2	2	8	6.961	87.01	8	
Active coping, use of informational support	1	1	4	3.294	82.35	7	
Planning	1	1	4	3.706	92.65	9	
Denial	1	1	4	3	75	3	
Humor and Behavioral Management	1	1	4	2.69	67.25	1	

**SECTION-4**

**Objective 3:** To find out the relationship between stress and coping patterns among mothers of neonates admitted in NICU.

**Table 3**

**Correlation between Stress and Coping Patterns Score of Mothers' whose neonate is admitted in NICU N=50**

**Stress and Coping**

**Patterns Score**

<b>Relationship between</b>	<b>Mean</b>	<b>SD</b>	<b>r</b>	<b>'p' value</b>
Stress and	120.52	13.180	0.183	0.203
Coping Patterns	43.14	5.107		

Minimum Stress Score = 32

Maximum Stress Score = 160

Minimum Coping Patterns Score = 14

Maximum Coping Patterns Score = 56

Table 3 shows that the correlation calculated between stress and coping patterns score was (0.183). It revealed that there was a weak positive correlation between stress and coping patterns of mothers of neonates admitted in NICU. Hence, it can be concluded that as the stress increases the coping patterns lowers and vice versa which means that as the stress increased mothers used maladaptive coping patterns and vice versa.

**IV. DISCUSSION:**

The primary aim of the present study was to find correlation between stress and coping patterns among mothers of neonates admitted in NICU in selected hospital of Silvassa, DNH. The study findings have been discussed with reference to objectives in the light of other studies.

**Objective 1: Assess the level of stress among mothers of neonates admitted in NICU:**

The findings of the present study revealed that majority of mothers 43 (86%) had severe stress followed by 7 (14%) in moderate stress level. No mother had mild stress. As per areas of stress, the highest stress levels were in emotional functioning area.

Similar findings were supported in a study conducted by Heidari H., on enhancing the Stress management among Parents of Neonates Hospitalized in NICU<sup>14</sup>.

**Objective 2: To assess the level of coping patterns among mothers of neonates admitted in NICU.**

The findings of the study revealed that majority of the mothers 45 (90%) had high coping patterns and 5(10.0%) of mothers had Medium Coping patterns, no mother had low coping patterns. As per areas of coping patterns, humor and behavior management area was the lowest area.

The findings of the study were supported by the study conducted by Varghese M et al., on Parental Stress in the Neonatal ICU Using Parental Stressor. The study showed more stress levels among mothers than fathers. The study concluded that parents of neonates admitted to the NICU experience high levels of stress. Parents of neonates with lower birth weights and gestational age experience more stress.<sup>15</sup>

**Objective 3: To find out the correlation between stress and coping patterns among mothers of neonates admitted in NICU.**

The findings of the study show that the correlation calculated between stress and coping patterns score was (0.183). It revealed that there was a weak positive correlation between stress and coping patterns of mothers whose neonate is admitted in NICU.

The similar findings were found in a study conducted by Patil S., on stress and coping strategies seen among parents of neonates. Findings showed that, there was no any significant



relationship between stress and coping strategies seen by using correlation coefficient. But similar study by Padmaja A et al. found that there is significant relationship between the stress and coping strategies at  $p < 0.05$  level.<sup>16</sup>

The findings were also supported by a study conducted by Rajalakshami S. et al. on levels of stress and coping strategies among mothers of preterm infants admitted in NICU. The findings concluded that, 9.99% of mothers had mild coping, 20% of mothers had moderate coping, 23.33% of mothers had poor coping<sup>17</sup>.

### V. CONCLUSION:

The study findings conclude that majority of the mothers ( $n=43$ , 86%) had severe stress, majority of the mothers ( $n=45$ , 90%) had high coping patterns whose neonates were admitted in NICU. There was weak positive correlation between stress and coping patterns of mothers whose neonate admitted in NICU.

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