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EFFECTIVENESS OF MODIFIED COPE (CREATING OPPORTUNITIES FOR PARENT EMPOWERMENT) PROGRAMME ON THE STRESS, ANXIETY AND COPING ABILITY OF MOTHERS OF PREMATURE BABIES ADMITTED IN NICU: A PILOT STUDY

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ABSTRACT

Background of the study

Stress is the body's reaction to any change that wants an adjustment. The body reacts to the changes i.e physical, mental, and emotional responses. Stress is a part of life. One can experience stress from the environment, body, and thoughts. Even positive life changes such as promotion, mortgage, or the birth of a child produce stress. ***Materials and methods: The re****searcher used a Quasi-experimental research approach, a non-randomized control group design. Settings of the study was selected Hospital, a total of 54 mothers were selected by non-probability convenient sampling techniques. The Modified COPE Program was used as an intervention in this study The data obtained were analyzed and interpreted in the light of objectives and hypothesis using both descriptive and inferential statistical in terms of frequency, percentage, and chi-square.* ***Results: The r****esult revealed that the calculated t value of stress (15.010, P=0.05), anxiety (17.779, P=0.05) and coping ability (14.687, P=0.05) is found significant. The results shows that there is a significant relationship between the effect of modified COPE Program with stress, anxiety and Coping ability score of mothers. Hence research hypothesis H_2 is accepted.* ***Conclusion:*** *The main focus of the study was to assess the effectiveness of the modified COPE Program on stress, Anxiety, and Coping ability of mothers of premature babies. Mothers are experiencing stress, anxiety, and low coping ability due to a premature baby admitted in NICU. After the implementation of the modified COPE Program mother's stress and anxiety level decreased gradually and improved coping ability.*

KEYWORDS: *Stress, Anxiety, Coping ability, NICU, Effectiveness, Mothers, Premature babies.*

INTRODUCTION

A neonate is also called a newborn. The neonatal period is the first four weeks of a child's life. It is a time when changes are taking very fast. Many critical things can occur in this period of time, Feeding patterns are established, Bonding between parents and infant begins, The risk for infections that may become more serious is higher, and many birth or congenital defects are first noted.[1]According to WHO, Worldwide 10% of pregnant women&13% of women who had given birth had a mental health problem, primarily stress. Many research study has shown that the problem is higher in developing countries i.e. 15.6% during pregnancy and 19.8% after childbirth. Research gives an impact on a mother's activity of daily living. As a result, the children's growth and development may be negatively affected as well.[2]

Most premature babies (>80%) are born between 32nd to 37th weeks of gestation (moderate/late preterm) and die needlessly because of a lack of simple, essential care such as warmth and feeding support. About 10% of preterm babies are born at 28th to < 32nd weeks of gestation and in low-income countries more than half of those will die but many could be saved with feasible care, not including intensive care such as ventilation. For babies born before 28 weeks gestation, intensive care would be needed to save most of them.[3]

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Most babies admitted to NICU is preterm born before 37 weeks of pregnancy, have low birth weight (LBW) of less than 5.5 pounds, or have a health condition that needs care. In U.S. half a million babies were born preterm. Many of these babies have low birth weights (LBW). Twins, triplets, and multiples often are admitted to the NICU. This is because they tend to be born earlier and smaller than single birth babies. Babies with health conditions such as breathing difficulty, heart defect, infections, or birth defects have also cared for in the NICU. [4] WHO estimates of global rates of preterm births indicate that of the 135 million live births worldwide, about 15 million babies were born too early, representing a preterm birth rate of 11.1%. Over 60 % of preterm births occurred in sub-Saharan Africa and South Asia where 9.1 million births (12.8%) annually are estimated to be preterm.15 Rates are highest on average for low-income countries (11.8%) followed by lower-middle-income countries (11.3 %) and lowest for upper-middle and high-income countries (9.4% and 9.3%).[3]

In India out of 26 million live births annually, 3.5 million are preterm and out of these 3.03 lakh, babies die due to complications of preterm birth. According to Born Too Soon: The Global Action Report on Preterm Birth India tops the list of 10 nations contributing 60% of the world's premature deliveries with the maximum number of preterm births with 3,519,100 of them, almost 24% of the total number[3] According to NHM (2016-17) Neonatal Mortality Rate (per 1000 live births) in India (26%), Odisha has the highest (36%) NMR and Kerala has the lowest (6%) NMR. In India Infant Mortality Rate (IMR) (per 1000 live births) was (39%), Madhya Pradesh has the highest (52%) IMR ,and Goa has the lowest IMR (10%).[5]

Parent stress in NICU is often a neglected area. Much of the caregiving is centered on infants. Quantifying the stress levels of parents and identifying the greatest environmental stressor by understanding the aspects of infants, parents, and the environment that can cause stress may be useful in assisting the health personnel in targeting complete family-centered care and thus improving quality of life.[6] NICU mothers experience multiple stressors related to preterm birth, medical conditions of the baby, the complexity of the NICU environment, and the perceived vulnerability of the infant. Although a lot of studies have been carried out to assess the stress of mothers of neonates admitted to NICU there were few such studies that focus on stress and coping mechanisms, thus the researcher felt the need to conduct a study on stress and coping mechanisms of mothers of neonate admitted in NICU.[7] Mothers' coping may depend on the condition of their neonates, and how they are attached to their babies while being admitted. Again the mothers' relationship with healthcare professionals as well as with significant others such as family members, husbands, and their in-laws may affect their ability to cope.[7]

Effective communication and providing appropriate anticipatory guidance about what to expect when their baby is admitted to the NICU are essential aspects of nursing care provided to parents in the NICU. Knowing what to expect enables parents to more effectively cope with the stress of having a premature baby and the fear of uncertainty associated with the health and well-being of their infant. Parental knowledge of the ICU has been attributed to an enhanced understanding of the situation, a sense of predictability of the NICU experience, and confidence to deal with the overall stress of having a premature baby. One strategy aimed at enhancing parental knowledge employed by nurses caring for high-risk pregnant women was the opportunity for parents to tour the NICU before labor and birth. Parents who participated in the tour of the NICU reported it to be beneficial for several reasons: the tour decreased fear of the NICU, inspired a sense of hope for the outcome of the baby, and provided emotional preparation for the actual care provided in the NICU environment.[8]

OBJECTIVES OF THE STUDY

1. To assess the level of Stress, Anxiety, and Coping ability of mothers of premature babies.
2. To evaluate the effectiveness of a modified COPE program on the level of Stress, Anxiety, and Coping ability of mothers of premature babies.
3. To correlate between the level of Stress, Anxiety, and Coping ability of mothers of premature babies.
3. To find an association between the level of Stress, Anxiety, and Coping ability of mothers of Premature Babies with selected demographic variables.

HYPOTHESIS

- **H_1:** There is a significant difference in stress, Anxiety and Coping ability of mothers of premature babies admitted in NICU.
- **H_2:** There is a significant relationship between effect of modified COPE Programme & stress, Anxiety and Coping ability score of mothers of premature babies admitted in NICU.

METHODS

Research approach: The research approach adopted for the present study was Quantitative Experimental Research Approach, **Research design:** A Quasi experimental, non-randomized control group design was used in this study. **Sampling technique:** Non Probability Convenient Sampling Technique is used for the present study. **Research Settings**: The study was conducted in the

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neonatal intensive care unit (NICU) selected hospital, Udaipur, Rajasthan. **Sample Size: 54** mothers (Experimental group: 27 samples and Control group: 27 samples) were selected by using power analysis (solvin's formula), **Population:** The target Accessible population comprised of all mothers of premature babies admitted in NICU.

VARIABLES

- **Independent Variable:** COPE Programme.
- **Dependent Variable:** Stress, Anxiety & coping strategies of Mothers of preterm babies admitted in NICU.
- **Demographic Variables:** Age in years, religion, education, occupation, monthly income, type of family, residence, no. of children, birth order, mode of delivery, gravida, gestational age, birth weight of the baby, gender of neonate, length of stay in NICU.

SAMPLE SELECTION CRITERIA

Inclusion Criteria: Mothers of preterm babies

- ✓ Born before 37 weeks of gestation.
- ✓ Admitted in NICU during the time of data collection.
- ✓ Who could understand and speak Hindi & English.
- ✓ Who stayed in NICU for more than 14 days.

Exclusion criteria: Mothers of preterm babies

- ✓ With significant neurological disorders such as intra ventricular hemorrhage.
- ✓ Who were not co-operative in the study.
- ✓ Who were not available at the time of data collection.
- ✓ With postpartum discomforts/ diseases that restrict their involvement in care of their newborn.

Instruments

The study used 4 different tools to collect data. The first tool was socio-demographic variables such as Age in Years, Religion, education, Occupation, monthly family Income, type of family, residence, No. of children, Birth order, Mode of delivery, Gravida, Gestational week, Baby weight, Baby Gender, Length of stay in NICU. This section consists of 15 items. The second tool was Modified Parental Stress Scale (PSS:NICU) to assess the level of stress of mothers of premature babies who are admitted to NICU. This section consists of 33 items on selected aspects of a mother's stress. The third tool was Modified State-Trait Anxiety Inventory Form I & II scale (STAI I & II) to assess the Anxiety level of mothers of preterm babies who are admitted to NICU. This section consists of 40 items on selected aspects of a mother's Anxiety. The fourth tool was the Modified Coping Health Inventory for Parents scale(CHIP) to assess the coping ability of mothers of preterm babies who are admitted to NICU. This section consists of 42 items on selected aspects of mothers coping ability.

Intervention: The Modified COPE Program is an educational, behavioral and relaxation intervention program for mothers who have just experienced the premature birth of an infant. It is designed to begin very early in the course of the NICU admission and extends through the first week after discharge. The program consists of progressive muscle relaxation, Breathing Exercise & Information booklet. The initial draft was PMR (progressive muscle relaxation). The final tool was tested for reliability. The reliability of the tool was established by testing the stability using Cornbach's alpha formula. The internal consistency of the tool was as follows.
Modified Parental Stress Scale (PSS:NICU): 0.88, Modified State-Trait Anxiety Inventory Form I & II scale (STAI I & II): 0.91 & 0.90 and Modified Coping Health Inventory for Parents scale(CHIP): 0.79

Data Collection Procedure: A written permission was obtained from the hospital authority prior to the onset of the study. The researcher selected **54** mothers based on eligibility criteria. The purpose of the study and the method of data collection was explained to the participants. The researcher obtained informed written consent from the study participants. A direct interview was conducted with each individual and confidentiality of the study subject was assured. The pre test questionnaire was administered on day 1st Structured interview schedule was used to assess the level of Stress, Anxiety and Coping ability of Mothers of Preterm Babies admitted in NICU. Data collection tools were given to the participants by the researchers during face-to-face interview. The tool consist of socio demographic Performa, PSS:NICU, STAI-I&II, CHIP which was translated into vernacular language. The average time taken by each participants was 50 minutes & scoring time was 10 minutes. The language was found to be clear and items where easy comprehended by participants. After the pre-test on day 2nd Modified COPE Programme includes Progressive Muscle Relaxation Technique (PMRT), breathing exercises were conducted in a calm and quite environment and Information booklet regarding Care of premature babies was given to all participants after relaxation therapy. Post-test was on done after 15th day of pretest and follow-up

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was done after 7 days of posttest. Data was collected and analyzed by using descriptive and inferential statistics. Researcher did not found any problem to conduct pilot study, hence researcher carried same tool to conduct main study as per the expert suggestion.

A study was conducted in 4 phases:
Phase-I (Pre-Test): Assess the Stress, Anxiety, and coping ability of Mothers of Preterm Babies admitted to NICU. **Phase-II (Intervention):** Modified COPE Programme was administered to Mothers of Preterm babies admitted to NICU. **Phase-III (Post-test):** Assess the effectiveness of the Modified COPE Programme on Mothers of Preterm Babies admitted to NICU. **Phase-IV (Follow Up):** Follow-Up to conduct after post-test.

Statistical analysis: The obtained data were analyzed in terms of the objectives of the study using descriptive and inferential statistics. The plan for data analysis was as follows Organization of data in the master sheet. Obtained data were analyzed in terms of frequencies and percentages. Description Statistics: Description of demographic characteristics mean, median, SD, and mean percentage was used to describe the area-wise pre-test, post-test & follow-up in an experimental and control group of the participant regarding stress. Inferential Statistics: paired 't'- test was used to find out the effectiveness of COPE Program on the mothers of preterm babies admitted in NICU. Chi-square was used to find the association between the pre-test stress score of the experimental group & control group participants with socio-demographic variables.

RESULTS

The collected data was entered into a master sheet for tabulation and statistical processing. The data were analyzed and interpreted using descriptive and inferential statistics based on the objectives and hypothesis formulated for the present study. The findings are presented under the following headings:

- **Section A:** Description of Socio-Demographic Variables of Study Participants.
- **Section B:** Level of Stress, Anxiety, and Coping ability among Mothers of preterm babies in Experimental & Control Group.
- **Section C:** Effectiveness of Modified COPE Program on Level of Stress, Anxiety and Coping ability among Mothers of preterm babies in Experimental & Control Group.
- **Section D:** Association between Pre-Test Stress Anxiety and Coping ability scores among Mothers of preterm babies with selected Socio-Demographic Variables in Experimental & Control Group.

Section A: Description of Socio-Demographic Variables of Study Participants.

Table 1: Description of Socio-Demographic Variables.

N=54

Sl. No	Demographic variables	Experimental Group N=27		Control Group N=27	
		Frequency	Percentage	Frequency	Percentage
1.	**Age in years**				
a)	19-23 years	4	14.8	7	26
b)	24-28 years	12	44.4	11	40.7
c)	29-33 years	7	26	6	22.2
d)	>33 years	4	14.8	3	11.1
2.	**Religion**				
a)	Hindu	18	66.7	19	70.4
b)	Muslim	5	18.5	4	14.8
c)	Christian	4	14.8	4	14.8
3.	**Education**				
a)	No Formal Education	14	51.9	13	48.1
b)	Primary Education	3	11.1	7	25.9
c)	Secondary Education	5	18.5	4	14.8
d)	Higher Secondary Education	3	11.1	1	3.7
e)	Graduation and above	2	7.4	2	7.4
4.	**Occupation**				

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a)	House Wife	12	44.5	14	51.9
b)	Government Employee	6	22.2	7	25.9
c)	Private Employee	1	3.7	1	3.7
d)	Business	6	22.2	3	11.1
e)	Others	2	7.4	2	7.4
5.	**Monthly family income**				
a)	less than Rs. 10000	14	51.9	11	40.7
b)	Rs. 10001-20000	7	25.9	10	37.0
c)	>Rs. 20000	6	22.2	6	22.2
6.	**Type of family**				
a)	Joint Family	10	37.0	9	33.3
b)	Nuclear Family	17	63.0	18	66.7
7.	**Residence**				
a)	Urban	8	29.6	9	33.3
b)	Semi Urban	12	44.4	14	51.9
c)	Rural	7	25.9	4	14.8
8.	**Number of Children**				
a)	One	21	77.8	19	70.4
b)	Two	4	14.8	7	25.9
c)	Three	2	7.4	1	3.7
9	**Birth Order**				
a)	First	21	77.8	19	70.4
b)	Second	4	14.8	7	25.9
	Third	2	7.4	1	3.7
10.	**Mode of Delivery**				
a)	Vaginal	19	70.4	19	70.4
b)	LSCS/Cesarean	8	29.6	8	29.6
11.	**Gravida**				
a)	Primi	21	77.8	19	70.4
b)	Multi	6	22.2	8	29.6
12.	**Gestational age**				
a)	<28 weeks	9	33.3	8	29.6
b)	28-32 wks	11	40.7	14	51.9
c)	33-37 wks	7	25.9	5	18.5
13.	**Weight of Baby**				
a)	<1000 Grams	3	11.1	7	25.9
b)	1001-1500 Grams	15	55.6	16	59.3
c)	1501-2000 Grams	9	33.3	4	14.8
14.	**Baby Gender**				
a)	Male	15	55.6	12	44.4
b)	Female	12	44.4	15	55.6
15.	**Length of Stay**				
a)	<7 days	16	59.3	13	48.1
b)	8-14 days	8	29.6	11	40.7
c)	15 days and above	3	11.1	3	11.1

The above table shows that maximum of the respondents in experimental group 12 (44.4%) were in the age group of 24-28 years, 18 (66.7%) were Hindu, 14 (51.9%) had formal education, 12 (44.5%) respondents were House wife, 14 (51.9%) of them had monthly family income is less than Rs 10,000/-, 17 (63%) were belongs to nuclear family, 12 (44.4%) were residence in semi urban, 21 (77.8%) had one children, 21 (77.8%) was first birth order, 19 (70.4%) mode of delivery was Vaginal, 21 (77.8%) were Primi gravida, 11(40.7%) had 28-32 weeks of gestation, 15 (55.6%) had 1001 to 1500 grams of birth weight, 15 (55.6%) were

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male and 16 (59.3%) were stayed less than 7 days in NICU. Whereas in control group most of respondents 11 (40.7%) were in the age group of 24- 28 years, 19 (70.4%) were Hindu, 13 (48.1%) had no formal education, 14 (51.9%) respondents were House wife, 11 (40.7%) of them had less than Rs 10,000/-, 18 (66.7%) were belongs to nuclear family, 14 (51.9%) were residence in semi urban, 19 (70.4%) had one children, 19 (70.4%) was first birth order, 19 (70.4%) mode of delivery was Vaginal, 19 (70.4%) were the Primi gravida, 14 (51.9%) had 28-32 weeks of gestation, 16 (59.3%) had 1001 to 1500 grams of birth weight, 15 (55.6%) were female and 13 (48.1%) were stayed less than 7 days in NICU.

SECTION B : Level of Stress among Mothers of premature babies In Both Experimental And Control Group.

Table 2: Frequency and Percentage Distribution of Stress level of Mothers of premature babies in Both Experimental and Control Group

N=54

Sl. No	Stress	Experimental group						Control group					
		Pre Test		Post Test		Feedback		Pre Test		Post Test		Feedback	
		f	%	f	%	f	%	f	%	f	%	F	%
1.	Mild Stress (1-70)	0	0.0	24	88.9	27	100.0	0	0.0	0	0.0	0	0.0
2.	Moderate Stress (71-140)	19	70.4	3	11.1	0	0.0	22	81.5	20	74.1	22	81.5
3.	Severe Stress (141-210)	8	29.6	0	0.0	0	0.0	5	18.5	7	25.9	5	18.5
	Total	**27**	**100**	**27**	**100**	**27**	**100**	**27**	**100**	**27**	**100**	**27**	**100**

The above table shows that level of stress in experimental group in this pre-test stress score i.e 70.4% had moderate stress, post test stress score i.e. 88.9% had mild stress & 100% participant in follow-up had low stress respectively. Whereas in control group the pre-test stress score i.e 81.5% had moderate stress, post test stress score i.e. 74.1% had moderate stress & 81.5% participant in follow-up had moderate stress There is a significant difference in stress level of mothers whose child is admitted in NICU. Hence research hypothesis H_1 was accepted.

Table 3: Frequency and percentage distribution of level of Anxiety of Mothers of premature babies In both Experimental And Control Group

N=54

Sl. No	Anxiety	Experimental group						Control group					
		Pre Test		Post Test		Feedback		Pre Test		Post Test		Feedback	
		f	%	f	%	f	%	f	%	f	%	f	%
1.	Mild Anxiety (1-53)	0	0.0	18	66.7	25	92.6	0	0.0	0	0.0	0	0.0
2.	Moderate Anxiety (54-107)	17	63.0	9	33.3	2	7.4	19	70.4	21	77.8	22	81.48
3.	Severe Anxiety (108-160)	10	37.0	0	0.0	0	0.0	8	29.6	6	22.2	5	18.51
	Total	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**27.0**

The above table shows that level of Anxiety in experimental group in this pre-test stress score i.e 63% had moderate anxiety, post test stress score i.e. 66.7% had mild anxiety & 92.6% participant in follow-up had mild anxiety respectively. Whereas in control group the pre-test anxiety score i.e 70.4% had moderate anxiety, post test stress score i.e. 77.8% had moderate anxiety & 81.4% participant in follow-up had moderate anxiety. There is a significant difference in stress level of mothers. Hence research hypothesis H_1 was accepted.

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Table 4: Frequency and Percentage Distribution of coping ability of Mothers of premature babies In Both experimental and control Group

N=54

Sl. No	Coping Ability	Experimental group						Control group					
		Pre Test		Post Test		Feedback		Pre Test		Post Test		Feedback	
		f	%	f	%	f	%	f	%	f	%	f	%
1.	Poor Coping (1-45)	15	55.55	0	0.0	0	0.0	13	48.1	19	70.4	12	44.44
2.	Moderate Coping (46-90)	12	44.4	7	25.9	0	0.0	14	51.9	8	29.6	15	55.56
3.	Good Coping (91-135)	0	0.0	20	74.1	27	100.0	0	0.0	0	0.0	0	0.0
	Total	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**	**27**	**100.0**

The above table shows that level of coping ability in experimental group in this pre-test stress score i.e 55.5% had poor coping, post test stress score i.e. 74.1% had good coping & 100% participant in follow-up had good coping respectively. Whereas in control group the pre-test coping ability score i.e 51.9% had moderate anxiety, post test coping ability score i.e. 70.4% had poor coping & 55.5% participant in follow-up had moderate coping. There is a significant difference in coping level of mothers. Hence research hypothesis H_1 was accepted.

SECTION – C: Effectiveness of modified cope (creating opportunities for parent empowerment) programme on stress, anxiety and coping ability among mothers of premature babies in experimental and control group.

Table 5: Comparison of pre test and post test stress of Mothers IN experimental and control group

N=54

Stress of Mothers of premature babies	Pretest		Posttest			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	141.30	16.891	78.07	14.422	15.010	S
Control Group	146.0	13.734	146.74	15.324	0.375	NS

S= Significance **NS= Not Significance**

The above table shows that in experimental group, comparison of pre test and post test analysis shows that in pre-test the mean obtained by the respondents was 141.3 with SD of 16.89 & in post test the mean obtained by the respondents was 78.07 with the SD of 14.4, the obtained Paired 't' test is 15.01 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

In control group comparison of pre test and post test analysis shows that in pre-test the mean obtained by the respondents was 146 with SD of 13.73 & in post test the mean obtained by the respondents was 146.7 with the SD of 15.32, the obtained Paired 't' test is 0.37 at 0.05 level of significance. Hence research Hypothesis H_2 was rejected.

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Table 6: Comparison of pre test and Feedback level of stress, of Mothers of premature babies of experimental and control group
N=54

Stress of Mothers of premature babies	Pretest		Feedback			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	141.30	16.891	66.30	3.440	21.005	S
Control Group	146.0	13.734	142.22	11.040	2.584	S

S= Significance **NS= Not Significance**

The above table shows that in experimental group, comparison of pre test and feedback analysis shows that in pre-test the mean obtained by the respondents was 141.3 with SD of 16.89 & in feedback the mean obtained by the respondents was 66.3 with the SD of 3.4, the obtained Paired 't' test is 21.005 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

In control group comparison of pre test and feedback analysis shows that in pre-test the mean obtained by the respondents was 146 with SD of 13.73 & in feedback the mean obtained by the respondents was 142.2 with the SD of 11.04, the obtained Paired 't' test is 2.58 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

Table 7: Comparison of pre test and post test Anxiety of Mothers of premature babies of experimental and control group
N=54

Anxiety of Mothers of premature babies	Pretest		Posttest			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	100.22	14.434	52.37	7.545	17.779	S
Control Group	102.26	11.614	98.07	10.979	4.127	S

S= Significance **NS= Not Significance**

The above table shows that in experimental group, comparison of pre test and post test analysis of anxiety shows that in pre-test the mean obtained by the respondents was 100.2 with SD of 14.43 & in post test the mean obtained by the respondents was 52.37 with the SD of 7.54, the obtained Paired 't' test is 17.77 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

In control group comparison of pre test and post test analysis shows that in pre-test the mean obtained by the respondents was 102.2 with SD of 11.6 & in post test the mean obtained by the respondents was 98.07 with the SD of 10.97, the obtained Paired 't' test is 4.12 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

Table 8: Comparison of pre test and Feedback Anxiety of Mothers of premature babies of experimental and control group
N=54

Anxiety of Mothers of premature babies	Pretest		Feedback			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	100.22	14.434	47.15	4.461	20.870	S
Control Group	102.26	11.614	95.83	10.809	6.388	S

S= Significance **NS= Not Significance**

The above table shows that in experimental group, comparison of pre test and feedback analysis of anxiety shows that in pre-test the mean obtained by the respondents was 100.2 with SD of 14.43 & in feedback the mean obtained by the respondents was 47.15 with the SD of 4.46, the obtained Paired 't' test is 20.87 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

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In control group comparison of pre test and post test analysis shows that in pre-test the mean obtained by the respondents was 102.2 with SD of 11.6 & in feedback the mean obtained by the respondents was 95.83 with the SD of 10.80, the obtained Paired 't' test is 6.388 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

Table 9: Comparison of pre test and post test coping abilities of Mothers of premature babies of experimental and control group

N=54

Coping ability of Mothers of premature babies	Pretest		Posttest			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	42.56	7.713	91.93	14.992	14.687	S
Control Group	48.33	10.061	45.0	11.395	1.579	NS

S= Significance **NS= Not Significance**

The above table shows that in experimental group, comparison of pre test and post test analysis of coping ability shows that in pre-test the mean obtained by the respondents was 42.56 with SD of 7.7 & in post test the mean obtained by the respondents was 91.9 with the SD of 14.9, the obtained Paired 't' test is 14.6 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

In control group comparison of pre test and post test analysis shows that in pre-test the mean obtained by the respondents was 48.3 with SD of 10.06 & in post test the mean obtained by the respondents was 45 with the SD of 11.3, the obtained Paired 't' test is 1.57 at 0.05 level of significance. Hence research Hypothesis H_2 was rejected.

Table 10: Comparison of pre test and Feedback coping abilities of Mothers of premature babies of experimental and control group

N=54

Coping ability of Mothers of premature babies	Pretest		Feedback			Inference
	Mean	S D	Mean	S D	PAIRED 't' TEST	
Experimental group	42.56	7.713	108.15	5.39	39.76	S
Control Group	48.33	10.061	48.41	10.529	0.037	NS

S= Significance **NS= Not Significance**

The above tables show that in experimental group, comparison of pre test and feedback analysis of coping ability shows that in pre-test the mean obtained by the respondents was 42.56 with SD of 7.7 & in feedback the mean obtained by the respondents was 108.15 with the SD of 5.3, the obtained Paired 't' test is 39.76 at 0.05 level of significance. Hence research Hypothesis H_2 was accepted.

In control group comparison of pre test and feedback analysis shows that in pre-test the mean obtained by the respondents was 48.3 with SD of 10.06 & in feedback the mean obtained by the respondents was 48.4 with the SD of 10.5, the obtained Paired 't' test is 0.037 at 0.05 level of significance. Hence research Hypothesis H_2 was rejected.

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SECTION – D: Correlation between level of stress, anxiety and coping ability among mothers of premature babies in experimental and control group.

Table 11: Correlation between pre test stress and Anxiety scores of Mothers of premature babies of experimental and control group

N=54

Group	Stress		Anxiety		r value	P Value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	141.30	16.891	100.22	14.434	0.248	0.212	NS
Control Group	146.0	13.734	102.26	11.614	0.414	0.032	S

S= Significance **NS= Not Significance**

The above table shows correlation between pretest stress and anxiety scores of mothers of premature babies in experimental group is 0.248 which indicate negligible correlation and p value is 0.212 at 0.05 level of significance. Therefore, there is no significant relationship between pretest stress and anxiety in experimental group. Whereas in control group correlation between pretest stress and anxiety of mothers of premature babies is 0.414 which indicate low positive correlation and p value is 0.039 at 0.05 level of significance. therefore, there is a significant relationship between pretest stress and anxiety in control group.

Table 12: Correlation between Post test stress and Anxiety of Mothers of premature babies of experimental and control group

N=54

Group	Stress		Anxiety		r value	P value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	78.07	14.422	52.37	7.545	0.114	0.571	NS
Control Group	146.74	15.324	98.07	10.979	0.235	0.239	NS

S= Significance **NS= Not Significance**

The above table shows correlation between posttest stress and anxiety scores of mothers of premature babies in experimental group is 0.114 which indicate negligible correlation and p value is 0.571 at 0.05 level of significance. Therefor, there is no significant relationship between posttest stress and anxiety in experimental group. Whereas in control group correlation between post test stress and anxiety scores of mothers of premature babies is 0.23 which indicate negligible correlation and p value is 0.239 at 0.05 level of significance. Therefore, there is no significant relationship between posttest stress and anxiety in control group.

Table 13: Correlation between pre test stress and coping abilities of Mothers of premature babies of experimental and control group

N=54

Group	Stress		Coping		r value	P Value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	141.30	16.891	42.56	7.713	0.184	0.614	NS
Control Group	146.0	13.734	48.33	10.061	0.074	0.713	NS

S= Significance **NS= Not Significance**

The above table shows correlation between pretest stress and coping scores of mothers of premature babies in experimental group is 0.184 which indicate negligible correlation and p value is 0.614 at 0.05 level of significance. Therefore, there is no significant relationship between pretest stress and coping scores in experimental group. Whereas in control group correlation between pretest stress and coping scores of mothers of premature babies is 0.074 which indicate negligible correlation and p value is 0.713 at 0.05 level of significance. Therefore, there is no significant relationship between pretest stress and coping scores in control group.

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Table 14: Correlation between post test stress and coping abilities of Mothers of premature babies of experimental and control group

N=54

Group	Stress		Coping		r value	P value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	78.07	14.422	91.93	14.992	0.104	0.606	NS
Control Group	146.74	15.324	45.0	11.395	0.107	0.594	NS

S= Significance **NS= Not Significance**

The above table shows correlation between posttest stress and coping scores of mothers of premature babies in experimental group is 0.104 which indicate very high positive correlation and p value is 0.606 at 0.05 level of significance. Therefore, there is no significant relationship between posttest stress and coping in experimental group. Whereas in control group correlation between post test stress and coping scores of mothers of premature babies is 0.107 which indicate very high positive correlation and p value is 0.594 at 0.05 level of significance. Therefore, there is no significant relationship between posttest stress and anxiety in control group.

Table 15: Correlation between pre test Anxiety and coping abilities of Mothers of premature babies of experimental and control group

N=54

Group	Anxiety		Coping		r value	P value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	100.22	14.434	42.56	7.713	0.782	0.001	S
Control Group	102.26	11.614	48.33	10.061	0.459	0.016	S

S= Significance **NS= Not Significance**

The above table shows correlation between pretest anxiety and coping abilities scores of mothers of premature babies in experimental group is 0.78 which indicate high Positive correlation and p value is 0.001 at 0.05 level of significance. Therefore, there is a significant relationship between pretest anxiety and coping ability in experimental group. Whereas in control group correlation between pretest anxiety and coping abilities scores of mothers of premature babies of experimental group is 0.45 which indicate low positive correlation and p value is 0.016 at 0.05 level of significance. Therefore, there is a significant relationship between pretest anxiety and coping ability in control group.

Table 16: Correlation between post test Anxiety and coping abilities of Mothers of premature babies of experimental and control group

N=54

Group	Anxiety		Coping		r value	P value (0.05)	Inference
	Mean	S D	Mean	S D			
Experimental group	52.37	7.545	91.93	14.992	0.131	0.516	NS
Control Group	98.07	10.979	45.0	11.395	0.259	0.191	NS

S= Significance **NS= Not Significance**

The above table shows correlation between posttest anxiety and coping abilities scores of mothers of premature babies in experimental group is 0.131 which indicate negligible correlation and p value is 0.516 at 0.05 level of significance. Therefore, there is no significant relationship between posttest anxiety and coping ability in experimental group. Whereas in control group correlation between posttest anxiety and coping abilities scores of mothers of premature babies of experimental group is 0.25 which indicate negligible correlation and p value is 0.191 at 0.05 level of significance. Therefore, there is no significant relationship between posttest anxiety and coping ability in control group.

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DISCUSSION

The main purpose of the study to evaluate the effectiveness of Modified COPE program on level of stress, anxiety, and coping ability of mothers of premature babies admitted in NICU. The findings of this study provide additional support to the previous studies on COPE program and other behavioral Intervention studies.

After participation in the study, results revealed that in comparison of pre and post-test stress in the experimental group the mean score was 141.30 and 78.07 with the 't' value of 15.010 which was significant, whereas, in the control group, the pre and post-test the mean score was 146.0 and 146.74 with the 't' value 0.375 which was not significant and pretest and follow up stress score in the experimental group the mean score was 141.30 and 66.30 with the 't' value of 21.005 which was significant, whereas in the control group, the pre and follow up the mean score was 146.0 and 142.22 with the 't' value 2.584 which was significant.

The Comparison of pre and post-test Anxiety in the experimental group the mean score was 100.22 and 52.37 with the 't' value of 17.779 which was significant, whereas, in the control group, the pre and post-test the mean score was 102.26 and 98.07 with the 't' value 4.127 which was significant and pre and follow up Anxiety score in the experimental group the mean score was 100.22 and 47.15 with the 't' value 20.870 which was significant, whereas in the control group, the pre and follow up the mean score was 102.26 and 95.83 with the 't' value of 6.388 which was significant.

The Comparison of pre and post-test Coping ability in the experimental group the mean score was 42.56 and 91.93 with the 't' value of 14.687 which was significant, whereas, in the control group, the pre and post-test the mean score was 48.33 and 45.0 with the 't' value 1.579 which was not significant and pre and follow up coping ability score in the experimental group the mean score was 42.56 and 108.15 with the 't' value 39.76 which was significant, whereas in the control group, the pre and follow up the mean score was 48.33 and 48.41 with the 't' value of 0.037 which was not significant.

This clearly indicates that there was a significant reduction in the level of stress, anxiety and improve in coping ability among mothers of premature babies after the administration of the modified COPE program to the mothers in the experimental group.

Similarly, In the study of Melnyk et al [10], all four phases of the COPE program were conducted in the USA shows that the maternal stress in the COPE program had significantly less than mothers in the control group and the mother's participation in taking care of the preterm did not have statistical significance between the two groups and also reduction in the traumatic symptoms, Richard J. Shaw et al[15], KaaresenPI[11]**.** Focussing on early individualized family-based interventions during neonatal hospitalization and transition to home has been shown to reduce maternal stress and depression and increase maternal self-esteem, Margarita Forcada-Guex et al [17], the length of hospital stay was reduced in the experimental group when compared to control group, Gonya et al [12]

This study also reveals that there was no association between demographic variables with the level of stress among mothers of neonates in the experimental group. Hence it shows that the COPE program can be applicable to all the mothers invariably according to their age, weeks of gestation, education, income, etc, **Melnyk et al**[14] to reduce the level of stress among mothers of neonates admitted to NICU.

This clearly indicates that there was a significant reduction in the level of stress among mothers of neonates after the administration of the COPE program to the mothers of neonates in the experimental group. Thus the COPE program was found to be effective in reducing the level of stress among mothers of neonates.

CONCLUSION

Analyzing the results of the present study specified the level of stress, anxiety, and coping ability of mothers of premature babies admitted to NICU. The implementation of the Modified COPE program accompanied by the empowerment of mothers can reduce such outcomes to a great extent. During this program, mothers learned about the differences between the physical and behavioral features of mature and immature neonates, growth and development, and behavioral and state cues and they also learned how to interact with the neonates by meeting their needs. Therefore, the results of this study confirm the findings of previous studies regarding COPE intervention with mothers of neonates that begins early in the NICU stay and results in less parental stress, anxiety and improves coping ability in the NICU.

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Conflict of Interest:
There are no conflicts of interest.

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