

## **Effect of self-structured coping module on the level of stress and coping ability among parents of preterm neonates admitted in selected hospitals of Odisha**

1. **Suchismita Giri**, Tutor, Dept. of Child Health Nursing, SUM Nursing College, Siksha 'O' Anusandhan(Deemed to be University), Bhubaneswar, Odisha
2. **Debajani Nayak**, Assistant Professor, Dept. of Obstetrics and Gynaecological Nursing, SUM Nursing College, Siksha 'O' Anusandhan(Deemed to be University), Bhubaneswar, Odisha
3. **Saswati Jena**, Assistant Professor, Dept. of Mental Health Nursing, SUM Nursing College, Siksha 'O' Anusandhan(Deemed to be University), Bhubaneswar, Odisha

**Corresponding Author:** Suchismita Giri, *MSC Tutor, Dept. of pediatric Nursing, SUM Nursing College, Siksha 'O' Anusandhan Deemed to be University, Bhubaneswar-751003, Odisha, India;*  
*Email Id: switboby@gmail.com*

### **Abstract**

#### **Introduction:**

**Aim:** *To evaluate the efficacy of self-structured coping module on the intensity of stress and coping ability within parents of preterm neonates admitted in selected hospitals of Odisha.*

**Methods and material:** *A quasi-experimental study with pre-test and post-test control group design was carried out among 110 patients which were chosen by purposive sampling method. self-structured parental stressor scale was applied to measure the level of parental stress among parents of preterm neonates. Modified coping health inventory was used to measure the parental coping strategy. the self-structured coping module was given to the study group. The post-test was conducted after 4 days.*

**Result:** *The findings showed a value of 12.58 at  $p < 0.05$  level suggests that a self-structured coping module had a significant effect on the level of stress.  $t$  value of -20.084 at  $p < 0.05$  level proposed that self-structured coping module had a considerable effect on improving coping strategy among parents of preterm neonates.*

**Conclusion:** *The study concluded that a self-structured coping module is one of the contemporary therapies that are proved effective in reducing stress levels and improving coping ability among parents of preterm neonates.*

**Keywords-** *Self-Structured Coping Module, Level Of Stress, Coping Ability, Parents, Preterm Neonate*

### **INTRODUCTION**

Mother-infant bonding is a dynamic and continuous process. therefore a mutual love and attachment are quiet unachievable when early contact is slow down due to prematurely born infants, or any illness and admitted to NICU. In medical science, stress can be caused by a physical or emotional factor that creates changes in the routine lifestyle of a person and produces lots of anxiety. stresses can be from an external source (death of a loved one, divorce, retirement from the job, conflict in the family) or an internal source (acute or chronic illness, any diagnostic procedure).<sup>1,2</sup> If parental affection is broken up, the child's psychological development is pessimistically influenced. Neonatal Intensive Care Unit

(NICU) setting has prospective to intensify strain for parents having infant confessed to the unit. NICU annoyance, independently or in integration, may hinder the parent-infant connection and create additional problems for the parents (Carter et al., 2007).<sup>3</sup>The parent-child relationship is a god gifted magical and unique bond. it can be successful within a good family environment, support from peers, friends, a community that have some impact on the intensity of parental stress and behavior. The high amount of stress can spoil good parenting and produces a negative impact on the social, emotional, cognitive outcomes for the child.<sup>4</sup>Significant improvement in equipment plus concern for the high-risk newborn has conveyed together stress and opportunities to families. Improvement in the emergency obstetric care and neonatal resuscitation pattern has decreased the neonatal mortality rate.<sup>5</sup>ability of parents to cope with stress has a preterm neonate and to give quality care is the important factor to assess the maternal-neonate outcomes. The infant-maternal bonding has a great impact on the quality of nursing care.<sup>6</sup>During the experience in the NICU, the investigator goes through many parents who under stress were inquisitive about their newborn. The investigator therefore, felt the need to conduct this study on a larger scale.

## **MATERIAL AND METHOD**

A quantitative research approach and a quasi-experimental research design were chosen for this study. This study was conducted among 110 parents of preterm neonates admitted to the NICU of Sardar Vallabh Bhai Patel Post Graduate Institute Of Paediatrics Cuttack. The nonprobability purposive sampling technique was used for this study. parental stressor scale is a 22 item multidimensional self-report scale deliberate to examine the cause of parental stress in the NICU. Modified coping health inventory has 3 subscales with 30 items used to measure parental coping ability. The reliability of the tool was tested by using Cronbach co-efficient formula and it is found to be reliable at 0.82 & 0.90. The socio-demographic data was collected by a self-structured questionnaire. This tool has two parts. Part 1 and Part 2. part 1 deals with a total of 10 items regarding parent information. Those are age, gender, religion, education, occupation, income, the total number of children, maternal complication, mode of delivery and gestational week. Part 2 of Tool I deals with infants information. It has a total of 2 items. Those are birth order of the child and birth weight. The tool was validated by various experts. The tool was tested with 10 participants to check the reliability test. Then by purposive sampling method, one govt hospital was selected from Cuttack. Prior permission was taken from Medical superintendent Sardar Vallabh Bhai Patel postgraduate institute of pediatrics Cuttack. The researcher introduced herself to the students and said the purpose of the study. The pre-test was conducted on the 2nd day of NICU admission by administering a self-structured parental stressor scale and modified coping health inventory in both experiments as well as the control group. The total duration of the assessment was 60 min. After completion of a pre-test, Intervention was given on the same day. Information was given to the parents in the experimental group regarding the behavior and characteristics of preterm infants, their growth and development, their parental role, and methods used to overcome stress whichever is mentioned in the module. For further reference module was given to the parents. no intervention was given to the control groups. The total duration of teaching was 30 min. The post-test was conducted after 4 days of intervention among the experimental group and control group to assess the level of stress and coping mechanism. The collected data were analyzed using MS Excel. The baseline data (demographic data) were analyzed by frequency and percentage. Analysis of the effectiveness of the self-structured coping module was calculated by paired and unpaired t-test. To identify the association between socio-demographic variables with the level of stress and coping strategy chi-square test was used.

## RESULTS

The outcome of this research paper found 28.57% of parents were under the age group of 31-35 yr in experimental and 32.5% in the control group. More than half 71.42% of parents were a mother in the study group and 75% in the control group. maximum percentage of parents were Hindu in the experiment as well as in the control group i.e. 65.71% and 50% respectively. Most of the parents had qualifications up to graduation, 32.85% in the experiment group, and 25% of parents had qualifications up to higher secondary in the control group. Most of the parents 47.14% were unemployed in the study group and 40% of parents were unemployed in the control group. The majority of parents income was between 10,001-20,000 in the experimental group i.e. 34.28% and in the control group it was 42.5%.

Most of the mothers had no maternal complication in antenatal and natal period in experimental 62.85% and control group 60% respectively. More than half of the mother 71.42% had undergone LSCS in the experiment group and 57.5% in the control group. Further, 35.71% had gestational week between 33-36 wk in the experimental group and 42.5% mothers had gestational week between 24-28 wk in the control group. The topmost percentage of parents had 1<sup>st</sup> child, 64.28% in the experiment group, and 55% in the control group respectively. As regards birth weight, almost half the percentage of the baby's birth weight was less than 1.5 kg having 51.42% in the experiment group and 45% in the control group. pre-test score of parental stress level in the experiment group was very stressful that is 44.28% whereas it was found to be 45.71% of parents were mostly a little stressed. In the control group pre-test and post-test scores of parental stress levels were mostly very stressful that is 52.50% & 60%. In the experimental group, maximum parents coping ability was moderately helpful, 72.85% in pre-test .post test score of parental coping ability was 62.85% for moderately helpful and 37.14% for extremely helpful. In the control group, most of the parental coping strategy score was moderately helpful, 62.5% in the pre-test, and 58% in the post-test.

As regards the efficacy of the intervention on stress level it was found that the t-test value was -12.852 ( $p < .00001^*$ ) at 108 degrees of freedom which was more than tabulated value at 0.05 significant level & was highly significant. for comparing the post-test value of coping ability among the study group and control group it showed that the t-test value was 14.728 ( $p < .00001^*$ ) at 0.05 significant level & was statistically significant. thus it inferred that self-structured coping module was effective in reducing stress and improving coping ability. calculated chi-square values were 10.962, 22.471 correspondingly which implies there was an association between the level of parental stress with gender and education.

## DISCUSSION

These study findings displayed the usefulness of the intervention in reducing stress and developing coping ability among parents of preterm neonates admitted in the NICU. Similarly Soheila Jafari Mianaei<sup>1</sup> Fatemeh Alaei Karahroudy<sup>2</sup>, et al 2014 showed the amount of anxiety and level of stress were decreased in experiment group after receiving the intervention in two phases (where the p-value is  $< 0.001^*$ ) while the level of stress and anxiety were increased in comparison group.<sup>7</sup> Mojgan Mirghafourvand,<sup>1</sup> Elaheh Ouladsahebmadarek,<sup>2</sup> et al 2017 reported that COPE program helped improve the intensity of stress among mothers after another session of cope program and state anxiety after the first part of program.<sup>8</sup> The present study findings supported a similar study conducted by Azam Momenizadeh, Hossein Zeraati et al on coping with stress in mothers of preterm neonates admitted in the neonatal intensive care unit. 70 mothers with premature infants have participated in that study. The result showed that the highest score in the aspect related to problem-focused coping was the availability of support system and active coping, for emotion-focused coping were spiritual method and use of emotional support and dysfunctional coping strategy were feeling of guilty, unimaginable problem and denial. demographic characteristics were not significantly related to the

maternal coping pattern. <sup>9</sup>Per Ivar Kaaresen, MDa,b, John A. Rønning found that intervention program was effectual for both mother and father in lowering the amount of stress between the preterm experimental group as compared to the term control group after receiving the early intervention program.<sup>10</sup>

### **Conclusion**

This study was done among the parents and analyzing which sort(class) of stress and coping parents report more. the outcomes demonstrate that there was severe stress among the parents. The study has critical ramifications to discover diverse adapting systems on the premise of which parents can help themselves scholastically during the NICU experience.

**Funding:** None

**Ethical Statement:** This study was approved by the institutional ethical committee and prior consent was taken from participants.

**Conflict Of Interest:** The authors declare that there is no conflict of interest.

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**Table 1:** Frequency and percentage distribution of subjects according to age, type of parent, religion, education, occupation, income, and presence of other children as per self-structured interview schedule in the experimental and control group.

N= n1+ n2=70+40=110

sl no	Parameter	experimental group		control group	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	AGE IN YR				
	1) 20-25	20	28.57	8	20
	2) 26- 30	19	27.14	12	30
	3) 31-35	20	28.57	13	32.50
	4) 36-40	11	15.71	7	17.50
2	PARENT				
	1)Mother	50	71.42	30	75
	2) Father	20	29	10	25
3	RELIGION				
	1)Hindu	46	65.71	20	50
	2) Muslim	15	21.42	7	17.5
	3) Christian	5	7.14	10	25
	4) Sikhism	4	5.71	3	7.50
4	EDUCATION				
	1) Primary	6	8.57	8	20
	2) Secondary	14	20	8	20
	3) Higher secondary	18	25.71	10	25
	4) Graduation	23	32.85	7	17.5
	5) Post-graduation	9	12.85	7	17.5
5	OCCUPATION				
	1) govt employee	13	18.57	6	15
	2) Private employee	14	20	10	25
	3) Self-employed	10	14.28	8	20
	4) Unemployed	33	47.14	16	40
6	INCOME				
	1) 5000-10000	14	20	8	20
	2) 10001-20000	24	34.28	17	42.5
	3) 20001-30000	22	31.42	10	25
	4) 30001 or more	10	14.28	5	12.5
7	PRESENCE OF OTHER CHILDREN				
	1) Yes	24	34.28	16	40
	2) No	46	65.71	24	60

**Table 2:**Mean, mean difference, standard deviation, standard error and t value of unpaired t-test to compare the post-test score of parental stress among experimental group and control group.

N=n1+n2=70+40=110

Sl no	Research group	Mean $\pm$ SD	MD	SEM	Df	t-value	p-value
1	Experimental group(n1)	44.64 $\pm$ 12.991		1.553	108		
			-32.09			-12.852	<.00001*
2	Control group(n2)	76.73 $\pm$ 11.860		1.875			

P<0.05= statistically significant

**Table 3:**Mean, mean difference, standard deviation, standard error and t value of unpaired t-test to compare the post-test score of parental coping ability among experimental group and control group.  
N=n1+n2=70+40=110

Sl no	Research group	Mean $\pm$ SD	MD	SEM	Df	t-value	p-value
1	Experimental group(n1)	58.06 $\pm$ 8.250		.986	108		
			23.66			14.728	<.00001*
2	Control group(n2)	34.40 $\pm$ 7.841		1.240			

P<0.05= statistically significant

**Table 4:**Chi-Square analysis to discover the association between level of stress with particular socio-demographic variables.  
n=70

Sl no	Demographic variables	Chi-square	df	P-value
1	Age	8.082	9	0.525
2	Gender	10.962	3	0.0119*
3	Religion	13.465	12	0.336
4	Education	22.471	12	0.0326*
5	Occupation	5.294	9	0.808
6	Income	6.631	9	0.676
7	Presence of other siblings	2.243	3	0.523
8	Maternal complication	.805	3	0.848
9	Mode of delivery	3.631	3	0.304
10	Gestational week	2.538	6	0.864
11	Birth order of child	13.956	9	0.123
12	Birth weight	2.249	6	0.895

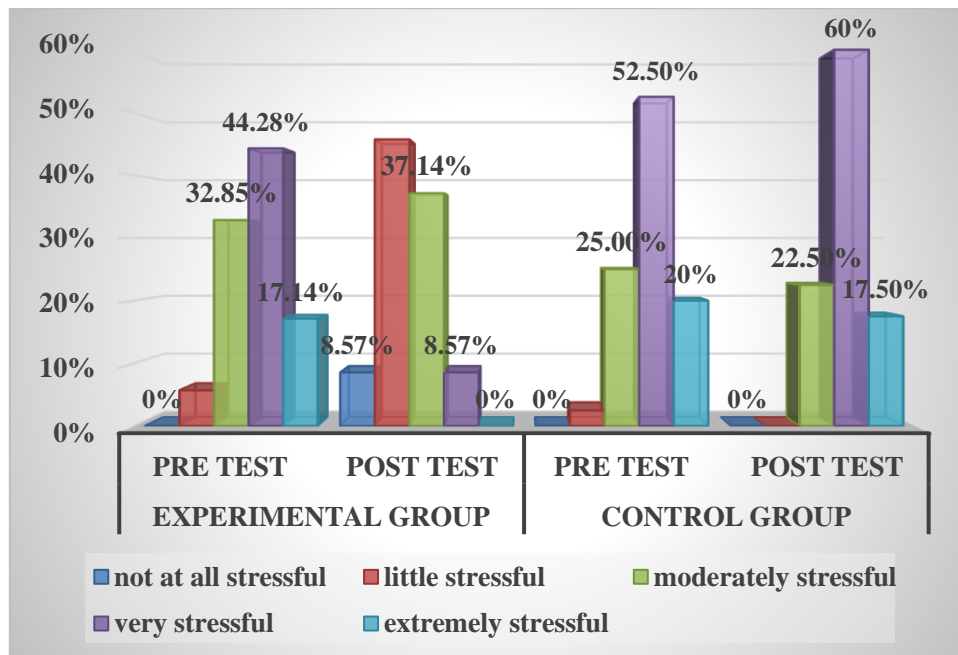


Fig 1: Bar diagram showing the distribution of pre-test and post-test scoring of parental stress among experimental group and control group.

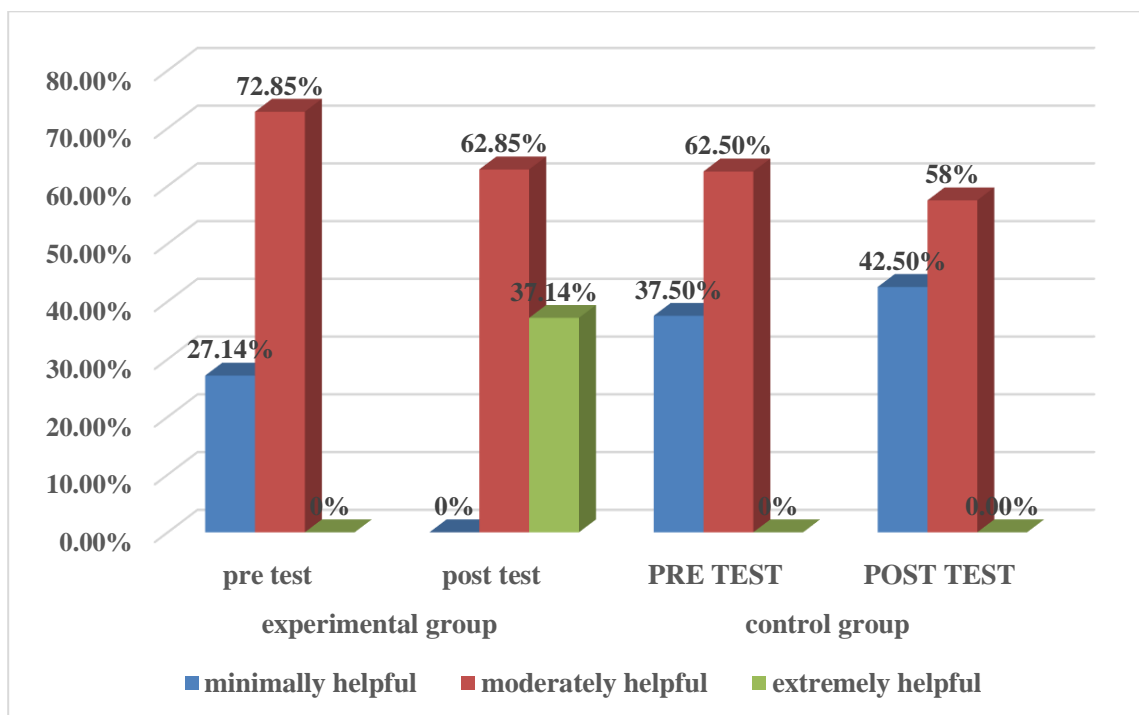


Figure 2: Bar diagram showing pretest and post-test scoring of parental coping ability among the experimental and control group.