



PSYCHOLOGICAL MORBIDITY AND COPING STRATEGY IN PARENTS OF NEONATES ADMITTED IN NEONATAL INTENSIVE CARE UNIT

Ms. Himani Suyal	Senior Pediatric Nurse, Army Hospital (Research & Referral), Delhi.
Dr. Achinta KR Mallick*	Assistant Professor, Military Hospital Kirkee, Pune, Maharashtra. *Corresponding Author
Ms. Rajkumari Sylvia	Associate Professor, Himalayan College of Nursing, Dehradun, Uttarakhand.
Ms. Vandana Chauhan	Assistant Professor, Himalayan College of Nursing, Dehradun, Uttarakhand.

ABSTRACT

Neonatal admission to NICU has negative impact on psychological health of parents. Although they try to adapt, presence of stress, anxiety and depression may interfere their coping skills. An attempt was made to evaluate the level of stress, anxiety, depression, coping strategies of parents of babies admitted in NICU and to determine the association of psychological health & coping with socio-demographic variables, at a teaching hospital in Dehradun in a Cross-sectional hospital based study. Psychological health was assessed by depression, anxiety & stress scale (DASS) tool among 64 parents. Psychological morbidity was high among parents. 23.4% had moderate to severe stress, 98.4% had moderate to severe anxiety and 81.2% had moderate to severe depression. 90.6% parents had good coping. There was a strong association of higher income parents with good psychological health ($P=0.032$), male child with good coping skill ($P=0.003$), and strong negative correlation of psychological health with coping ($P=0.01$).

KEYWORDS : Depression, Anxiety, Stress, Coping

INTRODUCTION

Admission of a neonate in neonatal intensive care unit (NICU) is often stressful for the parents. Emotional distress sleep deprivation in parents are very well addressed in studies from many western countries.¹⁻⁵ But very few studies have been conducted in India.^{6,7} Parents of babies admitted in NICU experience huge psychological morbidity related to prematurity, hemodynamic instability of the neonate, strange NICU environment, separation from baby and many other factors.³⁻⁵ In order to overcome from this uncomfortable situation, parents often resort to various coping behaviors which can be either adaptive or maladaptive to the prevailing hospital environment. Folkman and Lazarus did tremendous work on coping methods adapted by such parents through their well acknowledged questionnaire based study.⁸ However, there are limited data in literature regarding the coping behavior of parents of NICU admitted babies. The studies conducted in western countries may not be generalized in our Indian scenario owing to our vast cultural, geographical and socio-demographic diversity. Based on this knowledge, we conducted this study to evaluate the depression, anxiety and stress and various coping strategies adopted by parents of babies admitted in NICU, at a teaching hospital in Dehradun.

Material & Methods

This cross-sectional question based survey was conducted in the NICU of a teaching hospital in Dehradun, Uttarakhand. Written informed consent was taken from all the parents prior to inclusion in the study. All parents whose babies were admitted in NICU from June 2015 to December 2015 for a duration more than seven days, and were willing to participate in the study were included. Parents refusing consent and those having physical and mental disability were excluded from the study. The study was approved by the Institutional ethical committee. Antenatal history and other socio-demographic details like parent's age, baby's gender, mode of delivery, order of birth, parent's educational status, fathers occupation, family income, daily hospital expenditure and other relevant details were meticulously entered in a predefined proforma. Parent's depression, anxiety and stress

level was evaluated using depression, anxiety and stress scale (DASS), a validated questionnaire based survey tool, designed to measure the negative emotional states of depression, anxiety and stress with 42 questions. Parent's response was recorded on a four point severity/frequency Likert scale to rate the extent to which they have experienced each state over the past week. Response score was from zero to three, zero (not at all affected) to three (severely affected). Scores for Depression, Anxiety and Stress were calculated by summing the scores for the relevant items as mild/moderate/severe/extremely severe scores. Similarly, parental adaptive capability was assessed by 12 questions with four point Likert scale response from zero to three where zero (never) to three (always). Reliability of co-efficient of correlation was determined by Karl Pearson's formula. The calculated reliability of structured questionnaire on factors affecting the psychological health was 0.90, Depression Anxiety Stress Scale (DASS) was 0.95 & on coping strategy was 0.98. A pilot study was conducted among six parents to determine any flaws in questionnaire and statistical analysis. Once found feasible, the study was commenced thereafter. All data was entered in excel sheet and results were analyzed by descriptive statistics (frequency, percentage, mean & standard deviation) and inferential statistics (chi-square test, fisher-exact test, correlation).

Results

A total of 64 parents participated in the study period, out of which 47 were mothers and 17 were fathers. Their baseline socio-demographic profile is illustrated in Table I. Most of the parents were of younger age (98% mothers & 88% fathers were less than 32 years). 98.4% neonates were first order baby. Factors affecting the psychological health of the parents is illustrated in Table 2. Presence of other sick children, lack of information about child progress, noise of machines, inability to give care to the child and less time to interact with the child were the commonest factors affecting the psychological health of the parents. Grading of psychological health of parents is illustrated in Table 3. Severity of psychological health being graded as mild, moderate, severe and extremely severe were; stress: mild 22(34.3%), moderate 11(17.1%),

severe four (6.2%); anxiety: mild one (1.5%), moderate 37(57.8%), severe 23(35.9%), extremely severe three (4.7%); depression: mild 11(17.2%) moderate 41(64.1%), severe ten (15.6%) extremely severe one (1.5%) respectively. Taking a cumulative account of moderate to severe to extremely severe stress, anxiety or depression, we found that stress among parents was less (23.4% parents had moderate to severe stress, 98.4% had moderate to extremely severe anxiety and 81.2% had moderate to extremely severe depression. The coping strategies adopted by parents is illustrated in Table 4. Praying to God 61(95.3%), imagining about wellbeing of child 46(71.8%), sharing feelings with spouse 46(71.8%), doing special offerings to God 41(64%) and reading religious books 35(54.6%) were the various coping strategies adopted by the parents. 90.6% parents had good coping & 9.4% had average coping. On analyzing the association of socio-demographic variables with psychological health and coping ability (Table 5 & 6), it was observed that parents of higher income had better psychological health and parents of male baby had better coping ability (p<0.05). We also observed a strong negative correlation between psychological health and coping ability of parents.

Table 1: Socio-demographic baseline variables of parents (n = 64)

Baseline characteristics	n (%)
History of abortion	
Yes	32 (50)
No	32 (50)
Relationship with child	
Mother	47 (73.4)
Father	17 (26.6)
Mother's age (n=47)	
22-32 years	46 (98)
33-43 years	01 (2)
Father's age (n=17)	
22-32 years	15 (88)
33-43 years	02 (12)
Educational status of parent	
No education	3 (4.7)
Below intermediate	7 (10.9)
Above intermediate	54 (84.4)
Type of family	
Joint	40 (62.5)
Nuclear	24 (37.5)
Daily NICU expenditure (INR)	
1000-3000	54 (84.3)
>4000	10 (15.6)
Family income	
1000-15000	26 (40.7)
16000-30000	38 (59.3)
Occupation	
Unemployed	42 (65.6)
Private	20 (31.6)
Government	02 (3.12)
Baby's age (days)	
0 -15	60 (93.7)
16-30	04 (6.3)
Gender	
Male	41 (64.1)
Female	23 (35.9)
Birth order	
One	63 (98.5)
More than one	1 (1.5)
Mode of delivery	
Normal	34 (53.1)
LSCS	30 (46.8)

Table 2: Factors affecting psychological health of parents (n=64)

Factors	n (%)	
	Yes	No
Presence of other sick children around the baby	62 (96.9)	2 (3.1)
Lack information about Child's progress	62 (96.9)	2 (3.1)
Noise of machines	60 (93.7)	4 (6.3)
Inability to give direct care to the child	60 (93.7)	4 (6.3)
Less time to interact with child	58 (90.6)	6 (9.4)
Crying of child	58 (90.6)	6 (9.4)
Afraid of side effects of drugs	57 (89.1)	7 (10.9)
Inadequate facilities of lodging in the hospital	54 (84.4)	10 (15.6)
Unfamiliar members	54 (84.4)	10 (15.6)
Many tubing attached on child's body	53 (82.8)	11 (17.2)
Improper communication by health team members	49 (76.6)	15 (23.4)
High treatment cost	48 (75.0)	16 (25.0)
Inability to feed baby (Mothers)	47 (73.4)	17 (26.6)
Inadequate support from family members	17 (26.6)	47 (73.4)
Inadequate support of partner	1 (1.6)	63 (98.4)

Table 3: Frequency and percentage of level of psychological health among parents (n=64)

DASS score range	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	1 (1.5)	0 (0)	27 (42.2)
Mild	11 (17.2)	1 (1.5)	22 (34.3)
Moderate	41 (64.1)	37 (57.8)	11 (17.2)
Severe	10 (15.6)	23 (35.9)	4 (6.2)
Extremely Severe	1 (1.5)	3 (4.7)	0 (0)

Table 4: Coping strategies used by parents (n=64)

Coping strategies	n (%)			
	Always 3	Often 2	Sometimes 1	Never 0
Meeting with parents of other babies with same problem	35 (54.6)	23 (35.9)	4 (6.3)	2 (3.2)
Sharing feeling with the spouse	46 (71.9)	17 (26.5)	1 (1.6)	0 (0)
Praying to God	61 (95.3)	5 (7.8)	0 (0)	0 (0)
Reading religious books	35 (54.7)	18 (28.1)	8 (12.5)	3 (4.7)
When engaged with other works	32 (50)	28 (43.7)	4 (6.3)	0 (0)
Communicating with health team	25 (39.1)	27 (42.2)	12(18.7)	0 (0)
Listening to music	12 (18.8)	11 (17.2)	36 (56.3)	5 (7.7)
Doing exercise and yoga	11 (17.2)	12 (18.8)	34 (53.1)	9 (14)
Imagining about child's well being	46 (71.8)	15 (23.4)	5 (7.8)	0 (0)
Doing special offering or prayer for child's wellbeing	41 (63.9)	18 (28.2)	4 (6.3)	1(1.6)
Taking break from the hospital	16 (25)	44 (68.7)	11 (17.2)	4 (6.3)

Drinking tea and others which ever preferred	4 (6.3)	33 (51.6)	12 (18.7)	15 (23.4)
--	---------	-----------	-----------	-----------

Table 5: Association between psychological health & socio-demographic variables (n=64)

Demographic variables	above median	below median	Calculated value	P value
Gender (baby) Male Female	22 12	19 11	$\chi^2=0.013$	0.90
Mode of delivery Normal LSCS	21 13	13 17	$\chi^2=2.174$	0.14
Abortion Yes No	14 20	18 12	$\chi^2=2.259$	0.13
Type of family Joint Nuclear	21 13	19 11	$\chi^2=0.017$	0.89
Relation Mother Father	28 06	19 11	$\chi^2=2.956$	0.08
Age of parent 26-33 34-39	31 3	28 2	1 (fisher-exact)	0.31
Expenditure 1000-3000 4000-6000	28 06	26 04	0.738 (fisher-exact)	0.39
Income 1000-15000 16000-30000	18 16	8 22	$\chi^2=4.56$	0.032
Parents education No-formal education Below intermediate Above intermediate	2 5 27	1 2 27	0.56 (fisher-exact)	0.75
Occupation Unemployed Private sector Government sector	23 10 01	18 11 01	0.79 (fisher-exact)	0.67

Table 6: Association between coping strategies & socio-demographic variables (n=64)

Demographic variables	above median	below median	Calculated value	P Value
Gender(baby) Male Female	35 12	6 11	$\chi^2=8.32$	0.003
Mode of delivery Normal LSCS	24 23	10 7	$\chi^2=0.30$	0.58
Abortion Yes No	24 23	8 9	$\chi^2=0.08$	0.77
Type of family Joint Nuclear	31 16	9 8	$\chi^2=0.90$	0.34
Age of baby(days) 0-15 16-30	44 3	16 1	1.0 (Fisher exact)	0.31
Relation Mother Father	34 13	13 04	1.0 (Fisher-exact)	0.31
Parents Age 22-32 33-43	38 01	21 4	0.07 Fisher-exact)	0.79

Expenditure 1000-3000 4000-6000	41 06	13 4	0.43 (Fisher-exact)	0.51
Parents Education No-formal education Below Intermediate Above intermediate	2 2 35	1 5 19	0.17 (Fisher-exact)	0.91
Income 1000-15000 16000-30000	13 27	13 11	$\chi^2=2.9$	0.08
Parents Occupation Unemployed Private Government	26 12 01	15 09 01	0.89 (Fisher-exact)	0.64

DISCUSSION

Emotional distress in parents of NICU admitted babies is addressed in many western countries.¹⁻⁵ But very few studies have been conducted in India.^{6,7} These results may not be generalized in India, owing to our vast cultural, geographical and socio-demographic diversity. Acute stress in parents if not identified and addressed in the beginning and if associated with dysfunctional coping may lead to later development of post-traumatic stress disorder (PTSD).^{8,10,11} Coping if not compatible to prevailing circumstances, can be changed by interventions. Hence, the nursing and paramedical staffs have a significant role in addressing this issue through repeated counselling. Coping strategies can be both adaptive (social support) and maladaptive (anger/violence towards hospital staff, alcohol or substance abuse). Few studies reported that escape-avoidant coping and increased maternal distress occurred more frequently if the neonate had developmental disability.^{12,13} We found most of our patients to have adaptive coping strategy, which may be attributed to most of our neonates having normal developmental outcome. Another explanation for good coping may be attributed to better educational status in our parents and the same has also been reported by other researchers.^{14,15} Few researchers have also observed that lack of education and parents with psychological disorder indulged into maladaptive coping.^{16,17} The same was not observed by us probably because we had excluded parents with psychiatric illness from our study.

Our study has some limitations. We relied upon self-report method of the parents to assess their coping and psychological illness, which may lead to a bias on part of parents in reporting their distress & coping methods. This is due to the fact that the tools used may not be generalized in NICU parent population. Similar limitation has also been stated by other researcher.¹¹

CONCLUSION

Parents of NICU admitted babies have significant psychological morbidity which is affected by their income and gender of the baby. Higher psychological morbidity parent's had poor coping ability.

REFERENCES

1. Ramezani T, Hadian Shirazi Z, Sabet Sarvestani R, Moattari M. Family-centered care in neonatal intensive care unit: a concept analysis. *Int J Community Based Nurs Midwifery*. 2014; 2: 268-278.
2. Miles MS, Funk SG, Kasper MA. The stress response of mothers and fathers preterm infants. *Res Nurs Health*. 1992; 15: 261-269.
3. Holditch-Davis D, Miles MS. Mothers' stories about their experiences in the neonatal intensive care unit. *Neonatal Netw*. 2000; 19: 13-21.
4. Miles MS, Funk SG, Carlson J. Parental stressor scale: neonatal intensive care unit. *Nurs Res*. 1993; 42: 148-152.
5. Miles MS, Funk SG, Kasper MA. The neonatal intensive care unit environment: sources of stress for parents. *AACN Clin Issues Crit Care Nurs*. 1991; 2: 346-354.
6. Chourasia N, Surianarayanan P, Adhisivam B, Vishnu Bhat B. Nicu admissions and maternal stress levels. *Indian J Pediatr*. 2013; 80: 380-384.
7. Dutta S, Mahajan R, Agrawal SK, Nehra R, Narang A. Stress in fathers of premature newborns admitted in a neonatal intensive care unit. *Indian Pediatr*. 2016; 53: 311-313.
8. Folkman S, Lazarus RS. *Manual for the Ways of Coping Questionnaire*.

- Research Ed. Palo Alto (California): Consulting Psychologists Press; 1988.
9. Lefkowitz DS, Baxt C, Evans JR. Prevalence and correlates of posttraumatic stress and postpartum depression in parents of infants in the Neonatal Intensive Care Unit (NICU). *J Clin Psychol Med Settings*. 2010; 17: 230-237.
 10. Shaw RJ, Bernard R, DeBlois T, Ikuta L, Ginzburg K, Koopman C. Posttraumatic stress disorder in the neonatal intensive care nursery. *Psychosomatics*. 2009; 50:131-137.
 11. Shaw, R.J., Bernard, R.S., Storfer-Isser, A. et al. Parental Coping in the Neonatal Intensive Care Unit. *J Clin Psychol Med Settings*. 2013; 20(2): 135-142.
 12. Bronner MB, Kayser AM, Knoester H, Bos AP, Last BF, Grootenhuis MA. A pilot study on peritraumatic dissociation and coping styles as risk factors for posttraumatic stress, anxiety and depression in parents after their child's unexpected admission to a Pediatric Intensive Care Unit. *Child Adolesc Psychiatry Ment Health*. 2009; 3: 33.
 13. Reichman SR, Feldman, Miller AC, Gordon RM, Hendricks-Munoz KD. Stress Appraisal and Coping in Mothers of NICU Infants. *Children's Health Care*. 2000; 29: 279-293.
 14. Dasch KB, Russell HF, Kelly EH, Gorzkowski JA, Mulcahey MJ, Betz RR, et al. Coping in caregivers of youth with spinal cord injury. *J Clin Psychol Med Settings*. 2011; 18: 361-371.
 15. Liu M, Lambert CE, Lambert VA. Caregiver burden and coping patterns of Chinese parents of a child with mental illness. *Int J Ment Health Nurs*. 2007; 16: 86-95
 16. Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *J Consult Clin Psychol*. 2000; 68: 748-766.
 17. Watson CG, Davenport E, Anderson PE, Mendez CM, Gearhart LP. The relationships between premilitary school record data and risk for posttraumatic stress disorder among Vietnam war veterans. *J Nerv Ment Dis*. 1998; 186: 338-344.