



## COMPARISON OF PSYCHIATRIC MORBIDITIES BETWEEN MOTHERS AND FATHERS OF NEONATES ADMITTED IN NEONATAL INTENSIVE CARE UNIT

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### Abstract

**Background:** - The admission of the neonate to a neonatal intensive care unit (NICU) leads to significant parental distress. This stress may have adverse consequences not only on mother but also on father. Objectives of the current study were to assess and compare levels of anxiety and depression among such parents, and to study the associated parental and neonatal variables.

**Methodology:** -In the current comparative cross sectional study a total of 80 pairs of parents (80 mothers and 80 fathers) whose neonate was admitted at NICU for more than 2 weeks at a tertiary health care centre of western Rajasthan, India were included. Participants were those who consented to participate and met inclusion criteria. A semi structured proforma including socio-demographic profile of the parents and clinical parameters of the condition of the neonate was administered along with state-anxiety subscale of the state-trait anxiety inventory (STAI-S) and Beck's depression inventory (BDI II).

**Results:** -The majority of parents were Hindu, from urban background, living in an extended nuclear family. Majority of parents scored no or low anxiety and depression. Scores suggestive of anxiety and depression were found only in few parents. Mean STAI-S score was in mild anxiety for mothers whose neonates were admitted for observation whereas for the rest of the groups it showed nil or low range of anxiety. The Mean BDI II scores were in the range of minimal depression.

**Conclusion:** - Symptoms of both anxiety and depression in the parents need to be assessed after their neonate is admitted for a significant period in the ICU so that adequate interventions can be administered.

**Keywords:** - Parents, Neonates, NICU, Anxiety, Depression.

## INTRODUCTION

In a conventional scenario of Neonatal intensive care unit (NICU) generally focus lies on the neonate, and mother's psychological health is not recognized whereas father's psychological health is not even taken into account. Process of having a baby is widely regarded as a life crisis and it is much more so if the infants are requiring NICU care.<sup>(1)</sup> This transition to parenthood being a normative developmental crisis may affect psychological health of both parents particularly when their neonate is admitted to NICU. The hospitalization of a neonate in NICU is stressful for both mother and father of the neonate. In such vulnerable circumstance mothers in particular may experience higher stress than fathers as they are additionally going through other perinatal stressors too. Parents of neonate admitted in NICU are under significant stress and this is need of time to give family centered care.<sup>(2)</sup> They found that the NICU environment was moderately stressful for such parents. There is a significant communication gap between health care providers and parents requiring addressal of their concerns with their full participation in the newborn care because parents experience clinically significant anxiety.<sup>(3)</sup>

So current study was planned to assess the levels of anxiety and depression among parents of neonates admitted in the NICU. The findings of current study may help in formulating holistic care plan for such neonates as well as their parents particularly in our geographical area. Objectives of current study are to compare levels of anxiety and depression among such parents, and to study the associated parental and neonatal variables.

## MATERIAL AND METHODS:

**Study design and Site:** - This is a comparative cross sectional study conducted at Ummid Hospital Jodhpur (a tertiary health care centre attached to Dr. S.N. Medical College, Jodhpur).

**Instruments of the study:** - A semi structured proforma including socio-demographic profile of parents and clinical parameters of the neonate was administered along with State-Anxiety subscale of the state-trait anxiety inventory (STAI-S) and Beck's depression inventory (BDI-II). The **sociodemographic profile proforma** inquired about religion, locality, type of family, method of feeding to the baby, type of delivery, sex of neonate, whether the neonate needed NICU admission for observation or any medical or surgical intervention.

**State-Anxiety subscale of the State-Trait Anxiety Inventory** was used to measure state anxiety.<sup>(4)</sup> It was developed originally by Spielberger et al. (1970) to measure anxiety from the perspective of states vs. traits. The state measurement assesses how the individual feels "right now" or at this moment. Subjects are asked to rate the intensity of their anxious feelings on a four point scale as to their experience of feelings in terms of: not at all (1), somewhat (2), moderately so (3), or very much so (4). The subscale contains 20 items with two types of expressions. Direct expressions express negative emotions, and reversed expressions express positive emotions. The reversed items on the state anxiety scale are items 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20. Item scores are added to obtain subscale total scores. Range of scores for each subscale is 20–80, the higher score indicating greater anxiety. STAI scores are commonly classified as "no or low anxiety" (20–37), "moderate anxiety" (38–44), and "high anxiety" (45–80).<sup>(5)</sup> Knight et al found high estimates of reliability based on internal consistency for the scale.<sup>(6)</sup>

The **Beck Depression Inventory** (BDI II) is a 21-item; self-report rating inventory that measures characteristic attitudes and symptoms of depression.<sup>(7-8)</sup> It takes approximately 10 minutes to complete, although clients require a fifth – sixth grade reading level to adequately understand the questions. Internal consistency for the BDI II ranges from 0.73 to 0.92 with a mean of 0.86. The

BDI II demonstrates high internal consistency, with alpha coefficients of 0.86 and 0.81 for psychiatric and non-psychiatric populations respectively. Interpretation of BDI II score range 0-13 is as minimal depression, the score 14-19 is as mild depression, the score 20-28 is as moderate depression, and the score 29-63 is as severe depression.

**Study population:** -The population for the study was from a tertiary health care centre of Western Rajasthan. Total of 160 parents of neonates were admitted at Neonatal Intensive Care Unit (NICU) for at least two weeks were recruited for the study. Parents with any diagnosed psychiatric illness, mental retardation, using substance except nicotine, suffering from any severe physical illness affecting psychological health, illiterate or not able to read and understand the scales were excluded from the study.

**Study period:** - The study was conducted from July 2022 to December 2022.

**Study Procedure:** - Participants were enrolled in the study after obtaining approval from the Institutional Ethics Committee of the institute. A total of 80 consecutive cases were enrolled from the attached hospital fulfilling inclusion and exclusion criteria. Informed written consent from the participants was taken. Each participant was clinically interviewed under the guidance of the psychiatrist. A semi structured Performa containing socio-demographic profile of parents and clinical profile of the neonate was administered. Parents were assessed for anxiety using State-Anxiety subscale of State-Trait Anxiety Inventory, and for depression using the Beck Depression Inventory Second Edition.

**Statistical analysis:** -Statistical analysis was done with the help of the software SPSS version 24.

## RESULTS

Table 1 shows socio-demographic profile of the parents and clinical parameters of the neonate.

**Table 1:** Socio-demographic Profile of Parents and clinical parameters of the neonate

Variable	Number (N=160)	Percentage (%)
Religion		
Hindu	134	83.75
Muslim	22	13.75
Christian	4	2.50
Locality		
Rural	78	48.75
Urban	82	51.25
Type of family (N=80)		
Joint	19	23.75
Extended nuclear	46	57.50
Nuclear	15	18.75
Method of feeding to the baby		
Breastfeeding	71	88.75
Tube feeding	9	11.25
Type of delivery		
Vaginal delivery	44	45
Caesarian section	36	55
Sex of neonate		
Male	39	48.75
Female	41	51.25
Need of NICU admission		
For observation	23	28.75
For Medical intervention	52	65
For surgical intervention	5	6.25

Table 1 shows that majority of samples were Hindu by religion, from urban background, living in extended nuclear family. Majority of the neonates were female, delivered vaginally, breastfed, admitted to NICU for medical intervention.

**Table 2** Distribution of STAI-S scores among Parents

STAI-S score range	Mother		Father	
	N	%	N	%
20-37	60	75.00	75	93.75
38-44	11	13.75	2	2.50
45-80	9	11.25	3	3.75

Table 2 shows 75% of mothers and 93.75% of fathers reported no or low anxiety, 13.75% of mothers and 2.5% of fathers reported moderate anxiety while 11.25% of mothers and 3.75% of fathers reported high anxiety.

**Table 3** Distribution of BDI II scores among Parents

BDI Score range	Mother		Father	
	N	%	N	%
0-13	65	81.25	79	98.75
14-19	12	15.00	1	1.25
20-28	3	3.75	0	0.00
>29	0	0.00	0	0.00

Table 3 shows 81.25% mothers and 98.75% fathers scored for minimal depression, 15% mothers and 1.25% fathers scored for mild depression while 3.75% mothers scored for moderate depression. No parent scored for severe depression.

**Table 4:** Mean score of STAI-S and BDI II among the parents

Need of NICU admission	STAI-S		BDI II	
	Mother (Mean±SD)	Father (Mean±SD)	Mother (Mean±SD)	Father (Mean±SD)
Medical	33.32±7.82	31.86±4.95	6.42±3.93	5.76±0.94
Observation	39.78±11.36	31.56±6.40	9.52±5.14	5.69±2.58
Surgical	30.00±0.00	32.00±0.00	4.4±0.54	5.6±0.54

Table 4 shows mean scores of STAI-S and BDI II among the parents. Mean STAI score was in mild anxiety for mothers whose babies were admitted for observation whereas for the rest of the groups, it showed nil or low range of anxiety. The Mean BDI II score for all three groups were in the range of minimal depression.

## DISCUSSION:-

The current study was conducted to assess and compare anxiety and depression along with the associated variables in parents of neonates admitted in the Neonatal Intensive Care Unit. The majority of samples were Hindu by religion, from urban background, living in extended nuclear family. The sociodemographic characteristics of the parents in current study are comparable to the study conducted by Ganguly et al on assessment of stress among parents of neonates admitted in the NICU of a tertiary care hospital in Eastern India.<sup>(9)</sup> Majority of neonates in our study were female, delivered vaginally, breastfed, admitted to NICU for medical intervention. Similarly in the study by Ganguly et al also found that around three fourth infants were male, around one fourth were delivered vaginally, admitted to NICU for medical cause.<sup>(9)</sup> In a study by Agarwal et al 55.5% infants were born by normal vaginal delivery in their study on parental stress in NICU.<sup>(2)</sup> Majority of diagnostic distribution was medical in the study by Niranjana et al on psychological distress in Mothers of infants admitted in NICU.<sup>(10)</sup>

For any parent most troublesome conflicting situation would be seeing their child in agony or being hospitalized, and in such scenario when they are not able to provide help or support the neonate further aggravates their concerns making them prone to psychological distress. In the current study only 11.25% of mothers and 3.75% of fathers reported high anxiety while 13.75% of mothers and 2.5% of fathers reported moderate anxiety. This difference may be attributed to the facts that both parents have different roles and expectation for their neonate in NICU and simultaneous postpartum

phase of the mother. Carter et al conducted a study on parental response in parents whose neonate was admitted in NICU and found that 11% of the fathers and 18% of the mothers were suffering from probable anxiety.<sup>(11)</sup> The mean scores of anxiety symptoms in the NICU and control groups were low. Agarwal et al also in their study on parental stress in NICU reported that mothers experienced more stress than fathers.<sup>(2)</sup> Stremler et al in their study on psychological outcome in parents of critically ill PICU hospitalized children found that mean STAI score in around one fourth of parents indicated severe anxiety.<sup>(12)</sup> In current study the mean STAI score was in mild anxiety for mothers whose babies were admitted for observation whereas for the rest of two groups (admission for medical or surgical intervention), it showed nil or low range of anxiety. In contrast to our study the mean STAI score for fathers was 49.8 while in the study by Stremler et al it was 48.5 for mothers i.e., falling in moderate anxiety as per their interpretation.<sup>(12)</sup> Making mandatory provision of interventional strategies for early identification and evaluation of parental stress to help them cope with the distress so that they can maintain an overall positive mental health which is needed for a smooth parenting.

In the current study only 3.75% mothers scored for moderate depression while 15% mothers and 1.25% fathers scored for mild depression. No parent scored for severe depression. The Mean BDI II score for all three groups as per need for NICU admission (for medical or surgical intervention, or for observation) were in the range of minimal depression. Carter et al also found in their study that four percent of the fathers and six percent of the mothers were probable cases of depression on applying the Hospital anxiety and depression scale (HADS) while six percent of the fathers and twenty two percent of the mothers were probable cases of depression on applying the (Edinburg Postnatal Depression Scale) EPDS.<sup>(11)</sup> Overall in their study, the average level of anxiety and depressive symptoms in both the NICU and control parents was low, suggesting that for most parents the hospital experience was not associated with obvious depression or anxiety, even if their infant was admitted to an NICU. In contrast to our study Stremler et al found that slightly over half of the sample had scores suggesting the possibility of major depression.<sup>(12)</sup> In their study, Ganguly et al found that 60.8% parents experienced severe and extreme stress level for overall stress, and there was no significant difference in overall stress between father and mother.<sup>(9)</sup> Contrary to our study Suyal et al found that 98.4% of the parents had moderate to severe anxiety and 81.2% had moderate to severe depression.<sup>(13)</sup> In their descriptive study on parental stress in parents of infants admitted to NICU Heidarzadeh M et al also found that the mean stress score of mothers was higher than fathers, and the mean score of all dimensions of physical symptoms, anxiety, social functioning, depression, and total mental health score in mothers was higher than fathers.<sup>(14)</sup> Similarly Hagen et al also found that the mothers were more distressed and had more anxiety and depression than the fathers.<sup>(15)</sup> Niranjana HS et al also concluded that the mothers are at immense stress when separated from their infants hence measures to reduce the same must be considered.<sup>(10)</sup>

#### **SUMMARY AND IMPLICATIONS: -**

Parental stress, particularly anxiety and depression in NICU setting is often a neglected area. It is very crucial to identify specific stressors among such parents so that health care providers can develop appropriate intervention protocols to address the psychological health of the parents better. There is need to provide special psychological interventions beyond what is already being offered.

**CONFLICT OF INTEREST: -** None declared.

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