

Silent Stress of NICU Mothers A Descriptive Study on: Anxiety levels Among Mothers of Preterm Babies in NICU

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Abstract

The admission of preterm babies to the Neonatal Intensive Care Unit (NICU) is a stressful experience for mothers. Separation from the newborn, uncertainty regarding the baby's health condition, unfamiliar NICU environment, and complex medical procedures may contribute to increased maternal anxiety. Early identification of anxiety among mothers is essential to provide psychological support and improve maternal and neonatal outcomes.

The study aimed to assess the level of anxiety among mothers of preterm babies admitted to NICU and to determine the association between anxiety levels and selected demographic variables. A quantitative research approach with a descriptive research design was adopted for the study. The study was conducted among 60 mothers of preterm babies admitted to the NICU. Participants were selected using a non-probability convenience sampling technique. Data were collected using a structured demographic questionnaire and a Modified Hamilton Anxiety Rating Scale. The collected data were analyzed using descriptive and inferential statistics. The Chi-square test was used to determine the association between anxiety levels and selected demographic variables.

The findings revealed that 38 (63.3%) mothers experienced severe anxiety, 15 (25%) mothers had moderate anxiety, and 7 (11.7%) mothers had mild anxiety. The association between anxiety levels and selected demographic variables such as age, religion, number of children, age of baby, educational status, occupation, monthly income, previous hospitalization, and mode of delivery was not statistically significant ($p > 0.05$). The study concluded that mothers of preterm babies admitted to NICU experience considerable levels of anxiety, with the majority experiencing severe anxiety. Maternal anxiety was observed irrespective of demographic characteristics. Therefore, routine assessment of maternal anxiety, psychological counselling, emotional support, and involvement of mothers in newborn care should be incorporated into NICU services to promote maternal well-being and improve mother-infant bonding.

Keywords: Preterm infants, NICU, Neonates, Assessment, levels of anxiety, mothers of preterm babies, Emotional distress.

Introduction

Preterm birth is a major health concern worldwide and often requires admission of newborns to the Neo-

natal Intensive Care Unit (NICU). The hospitalization of preterm babies in NICU creates emotional, psychological, and social stress for mothers. Separation from the baby, uncertainty about survival, complex medical procedures, and prolonged hospitalization can increase maternal anxiety.

Worldwide, approximately 13% of new mothers suffer from mental illness, mainly depression. This percentage is significantly greater in developing countries, where it is 19.8% after childbirth.¹ Giving birth may turn into a traumatic experience when the mother experiences pain, fear, loss of control, and helplessness during labor, and the postpartum period may represent a time of greater psychological vulnerability. One in five new mothers might experience postpartum depressive and anxiety symptoms on the basis of relevant stressors and social circumstances. These factors are most commonly found in the case of preterm births^{2,3} Preterm birth is defined as “neonates delivered alive before completion of 37 weeks of gestation”⁴ Every year, over 15 million babies are born preterm. Mothers of very preterm infants reported much greater levels of anxiety, stress, and depressive symptoms than mothers with full-term infants did, with up to 40% of mothers reporting depression⁵ Unanticipated preterm pregnancies and subsequent neonatal intensive care unit (NICU) admissions can be highly traumatic for parents⁶ In the NICU, stressors such as the newborn’s unstable health, tubes, monitors, wires, and noise from different monitoring devices significantly impact parental psychological well-being⁷

A study was conducted to assess stress and anxiety among mothers of premature infants admitted to the Neonatal Intensive Care Unit (NICU). The study aimed to determine maternal stress and anxiety levels and identify their relationship with maternal and infant characteristics. The study used a non-probability convenience sampling technique and included 180 mothers from a public hospital. Data were collected using the 26-item Perceived Stress Scale (PSS) and the 40-item State-Trait Anxiety Inventory (STAI). The findings revealed that 56.5% of mothers had high stress levels, 85.5% had high state anxiety, and 67.8% had high trait anxiety. A significant relationship was found between maternal stress and anxiety levels. However, no significant association was observed between stress and maternal or infant characteristics. The study concluded that mothers of premature infants admitted to NICU experience high levels of stress and anxiety. The researchers recommended early intervention and psychological support to reduce maternal stress and anxiety^{8,9}

In developing countries, most of the parents are having more anxiety about their children showing negative behaviour towards their hospitalization and also the lack of knowledge about the hospitalization. Every year about 2 millions of the operations are performed for NICU babies. In that 87% of mothers are having anxiety have their children or babies undergoes hospitalization or may be surgeries¹⁴

The Neonatal Intensive Care Unit (NICU) can be a difficult environment for parents because it is noisy, hot and crowded; in addition, advanced medical equipment and complex medical language serve as barriers between parents and their newborns¹⁰ Parents, especially mothers, whose newborns are in the NICU can have psychological problems due to having a sick baby, the thought of losing their baby and failure to fulfill traditional parenting roles^{11,12} The lack of a proper environment where mothers can meet their baby’s physiological needs (feeding, drinking, sleeping, etc.), as well as the sickness of their baby, the lack of information regarding treatment and medical operations, the lack of communication with health professionals, not participating in the care of their infants, and the lack of social support can lead to elevated anxiety levels¹³

Mothers of preterm babies commonly experience moderate to severe anxiety, which may affect their mental well-being, mother–infant bonding, breastfeeding practices, and care giving abilities. High anxiety levels can also negatively influence the recovery and development of the baby. Several studies

have reported increased anxiety among mothers of preterm babies admitted to NICU. Research shows that a large proportion of mothers experience significant stress and anxiety during hospitalization. However, maternal anxiety often remains under-recognized in clinical settings, and early screening is limited.

Therefore, assessing the anxiety levels among mothers of preterm babies admitted in NICU is essential to identify mothers at risk and provide timely psychological support. This study will help healthcare professionals, especially nurses, plan appropriate interventions to reduce maternal anxiety and improve both maternal and neonatal outcomes.

Problem statement

A Descriptive Study on Anxiety Levels Among Mothers of Preterm Babies admitted in NICU

Objectives

- To assess the level of anxiety among mothers of preterm babies admitted in NICU.
- To associate the level of anxiety among mothers of preterm babies admitted in NICU with their selected demographic variables.

Methodology

Research Approach: A **quantitative research approach** was adopted for the present study.

Research Design: A **descriptive research design** was adopted to assess the anxiety levels among mothers of preterm babies admitted in NICU.

Target population: Mothers of preterm babies.

Sample: Mothers of preterm babies admitted in NICU.

Sample Size: A total of **60 mothers of preterm babies** were selected for the study.

Sampling Technique: A **non-probability convenience sampling technique** was used to select the study participants.

Criteria for Sample Selection

Inclusion Criteria:

- Mothers of preterm babies admitted in NICU.
- Mothers who were willing to participate in the study.
- Mothers who could understand and respond to the questionnaire.

Exclusion Criteria:

- Mothers who were critically ill or unable to participate.
- Mothers with a history of psychiatric illness.

Variables

Research Variable:

Anxiety level among mothers of preterm babies admitted in NICU.

Demographic Variables:

Age, religion, number of children, age of baby, educational status, occupation, monthly income, number of previous hospitalizations, and mode of delivery.

Description of Tool

The tool consisted of two sections:

Section A: Structured demographic questionnaire consisting of selected demographic variables.

Section B: Modified Hamilton Anxiety Rating Scale consisting of **22 items** to assess anxiety levels among mothers of preterm babies.

Content Validity

The content validity of the tool was obtained from experts in nursing and medical specialties. Necessary modifications were incorporated based on expert suggestions.

Reliability

The reliability of the modified Hamilton Anxiety Rating Scale was established using an appropriate reliability method to ensure consistency of the tool.

Pilot Study

A pilot study was conducted among selected mothers of preterm babies to assess the feasibility of the study and applicability of the tool. The study procedure was found to be feasible for conducting the main study.

Data Collection Procedure

After obtaining ethical clearance and formal permission from the concerned authorities, informed consent was obtained from the participants. Data were collected from **60 mothers of preterm babies** using the demographic questionnaire and modified Hamilton Anxiety Rating Scale. Confidentiality of the information was maintained throughout the study.

Data Analysis

The collected data were analyzed using **descriptive and inferential statistics**. Frequency and percentage were used to describe demographic variables and anxiety levels. The **Chi-square test** was used to determine the association between anxiety levels and selected demographic variables.

Discussion

Table.1 Frequency and Percentage distribution of demographic variables among mothers of hospitalized babies
n=60

Sl.No	Demographic Variables	Frequency (f)	Percentage (%)
1	Age		
	a)18-25 years	28	46.7
	b)26-33 years	21	35
	c)Above 35 years	11	18.3
2	Religion		
	a)Hindu	35	58.3

	b)Christian c)Muslim	15 10	25 16.7
3	Number of Children a)One b)Two c)Three	25 27 8	41.7 45 13.3
4	Age of Children a)0-10 days b)11-20 days c)21-28 days	35 18 7	58.3 30 11.7
5	Education a)Literate b)Illiterate	30 30	50 50
6	Occupation a)Sedentary work b)Heavy work	26 34	43.3 56.7
7	Income a)Rs.5000 and above b)Rs.3000-5000 c)Rs.3000 and below	33 20 7	55 33.3 11.7
8	Number of previous hospitalization a)Once b)Twice c)More than Twice	29 20 11	48.4 33.3 18.3
9	Mode of Delivery a)Normal b)Instrumental LSCS	38 4 18	63.3 6.7 30

The demographic profile of the 60 mothers of preterm babies admitted to the NICU showed that most mothers were aged 18–25 years (46.7%), followed by 26–33 years (35.0%). The majority were Hindus (58.3%), had two children (45.0%), and their babies were 0–10 days old (58.3%). Equal proportions of mothers were literate (50.0%) and illiterate (50.0%). More than half were engaged in heavy work (56.7%) and had a monthly family income of Rs. 5000 and above (55.0%). Nearly half (48.3%) had experienced one previous hospitalization, and the majority (63.3%) had a normal vaginal delivery.

Table 2: To assess the level of anxiety among mothers of hospitalized babies

Sl.No	Criteria	Level of Anxiety					
		Mild (1-50%)		Moderate (51-75%)		Severe $\geq$ 70%	
		f	%	f	%	f	%
1	Level of Anxiety	7	11.7%	15	25%	38	63.3%

Table.2 reveals that, the assessment of anxiety levels among the 60 mothers of preterm babies admitted to the NICU revealed that the majority 38 (63.3%) experienced severe anxiety, while 15 (25.0%) had moderate anxiety, and only 7 (11.7%) had mild anxiety. These findings indicate that most mothers of preterm babies in the NICU experienced a high level of anxiety during their infant's hospitalization.

A descriptive study was conducted on anxiety levels among mothers of preterm newborns admitted in NICU. The study included 50 mothers and used the Hamilton Anxiety Rating Scale to assess anxiety. The findings revealed that 58% of mothers had very severe anxiety, 22% had severe anxiety, 10% had moderate anxiety, and 10% had mild anxiety. A significant association was found between anxiety levels and demographic variables such as maternal age and birth weight of newborns. Recent literature suggests that demographic variables such as maternal age, education, occupation, socioeconomic status, type of family, parity, and place of residence significantly influence anxiety levels among mothers of preterm babies during NICU hospitalization. Mothers with poor social support, low income, and first-time motherhood are more vulnerable to high anxiety¹⁵

Table 3 : To find the association between demographic variables with level of anxiety among mothers of preterm babies admitted in NICU

n=60

Sl No	Demographic variables	f	%	Mild-7		Moderate-15		Severe-38		Chi-square
				f	%	f	%	f	%	
1	Age									
	18-25 years	28	46.7	5	8.3	8	13.3	15	25	CV-4.25 df-4 NS
	26-33 years	21	35	1	1.7	6	10.0	14	23.3	
	above 35 years	11	18.3	1	1.7	1	1.7	9	15	
2	Religion									
	Hindu	35	58.3	4	6.7	9	15.0	22	36.6	CV-2.42 df-4 NS
	Christian	15	25	3	5	3	5.0	9	15.0	
	Muslim	10	16.7	0	0	3	5.0	7	11.7	
3	No of children's									
	One	25	41.7	3	5	5	8.3	17	28.4	CV-2.16 df-4 NS
	Two	27	45	4	6.7	8	13.3	15	25	
	Three	8	13.3	0	0	2	3.3	6	10	
4	Age of children									
	0-10 days	35	58.3	6	10	11	18.3	18	30	CV-5.62 df-4 NS
	11-20 days	18	30	1	1.7	3	5.0	14	23.3	
	21-28 days	7	11.7	0	0	1	1.7	6	10	
5	Educational status									
	literate	30	50	7	11.7	10	16.7	13	21.7	CV-12.46 df-2 NS
	Illiterate	30	50	0	0	5	8.3	25	41.6	
6	Occupation									
	Sedentary work	26	43.3	5	8.3	7	11.7	14	23.4	CV-2.97 df-2 NS
	Heavy work	34	56.7	2	3.3	8	13.3	24	40	

7	Income									
	Rs 5000 and above	33	55	4	6.7	7	11.7	22	36.6	CV-0.65
	3000-5000	20	33.3	2	3.3	6	10	12	20	df-4
	3000 and below	7	11.7	1	1.7	2	3.3	4	6.7	NS
8	NO of previous hospitalization									
	Once	29	48.3	3	5	7	11.7	19	31.7	CV-0.848
	Twice	20	33.3	2	3.3	6	10.0	12	20	df-4
	More than twice	11	18.3	2	3.3	2	3.3	7	11.7	NS
9	Mode of delivery									
	Normal	38	63.3	1	1.7	8	13.3	29	48.3	CV 9.67
	Instrumental	4	6.7	2	3.3	1	1.7	1	1.7	df-4
	LSCS	18	30	4	6.7	6	10	8	13.3	NS

The association between selected demographic variables and the level of anxiety among mothers of preterm babies admitted to the NICU was analyzed using the chi-square test. The demographic variables studied included age, religion, number of children, age of the baby, educational status, occupation, monthly family income, number of previous hospitalizations, and mode of delivery. The analysis revealed that none of the selected demographic variables showed a statistically significant association with the level of anxiety ($p > 0.05$). Although severe anxiety was more prevalent across most demographic categories, the differences observed were not statistically significant. These findings indicate that maternal anxiety among mothers of preterm babies in the NICU was independent of the selected demographic characteristics.

A descriptive cross-sectional study was conducted at Level-III Neonatal Unit, Fatima Memorial Hospital, to determine the prevalence of maternal anxiety and its risk factors among mothers of premature neonates admitted to the intensive care unit. The study was carried out over 30 months and included 430 mothers. Maternal anxiety was assessed using the Perinatal Anxiety Screening Scale (PASS). The findings revealed that 28.1% of mothers experienced anxiety. Significant risk factors associated with maternal anxiety included young maternal age, urban residence, higher education, smoking, diabetes, previous depression or anxiety, primiparity, delivery complications, fear of handling preterm infants at home, and concerns related to prematurity. The study further identified that extreme prematurity, first-time motherhood, and small-for-gestational-age neonates significantly increased maternal anxiety, while living in an extended family system acted as a protective factor. The study concluded that nearly one-third of mothers of premature neonates experienced anxiety. Early screening and supportive interventions are essential to identify and reduce maternal anxiety during NICU admission¹⁶

A systematic review and meta-analysis was conducted among parents of neonates admitted to NICU. The review included 6,822 parents and showed that mothers had higher prevalence of anxiety compared to fathers. Maternal stress and anxiety were strongly influenced by hospitalization, NICU environment, and infant health condition¹⁷

Recommendation for future studies

- A Comparative Study on Anxiety Levels Among Mothers of Preterm and Full-Term Babies.
- A Longitudinal Study on Anxiety Levels Among Mothers of Preterm Babies During NICU Admission and After Hospital Discharge.

- A Study to Evaluate the Effectiveness of Mindfulness-Based Stress Reduction on Anxiety Levels Among Mothers of Preterm Babies in the NICU.
- A Correlational Study on Anxiety Levels and Coping Strategies Among Mothers of Preterm Babies in the NICU.
- A Study to Assess the Relationship Between Social Support and Anxiety Levels Among Mothers of Preterm Babies in the NICU.
- A Study to Assess the Association Between Maternal Anxiety and Mother–Infant Bonding Among Mothers of Preterm Babies After NICU Discharge.
- A Mixed-Methods Study on the Lived Experiences and Anxiety Levels Among Mothers of Preterm Babies in the NICU.
- A Comparative Study on Anxiety Levels Among Mothers of Preterm Babies in Government and Private Hospital NICUs.
- A Study to Assess the Relationship Between Length of NICU Stay and Anxiety Levels Among Mothers of Preterm Babies.
- A Study to Assess the Relationship Between Neonatal Clinical Condition and Anxiety Levels Among Mothers of Preterm Babies in the NICU.
- A Study to Assess Depression, Stress, and Anxiety Among Mothers of Preterm Babies Admitted to the NICU.
- A Study to Assess Anxiety Levels Among Fathers of Preterm Babies Admitted to the NICU.
- A Multi center Study on Anxiety Levels Among Mothers of Preterm Babies Admitted to NICUs Across Different Hospitals.

Conclusion

The present study assessed the anxiety levels among mothers of preterm babies admitted to the Neonatal Intensive Care Unit. The findings revealed that a majority of mothers experienced severe anxiety, followed by moderate and mild anxiety levels. The hospitalization of preterm infants in the NICU creates significant emotional challenges for mothers due to fear regarding the baby's health condition, separation from the newborn, uncertainty about recovery, and unfamiliarity with the NICU environment. The findings highlight the importance of regular psychological assessment and early identification of anxiety among mothers of NICU-admitted preterm babies. Nurses and healthcare professionals play a vital role in providing emotional support, health education, effective communication, and opportunities for parental participation in newborn care. Appropriate counselling and supportive interventions can help reduce maternal anxiety, strengthen mother–infant bonding, and improve overall neonatal care outcomes.

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