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Maternal Satisfaction With Care Provided To The Neonates In NICU: A Cross-Sectional Study At Public Tertiary Care Hospital Baluchistan

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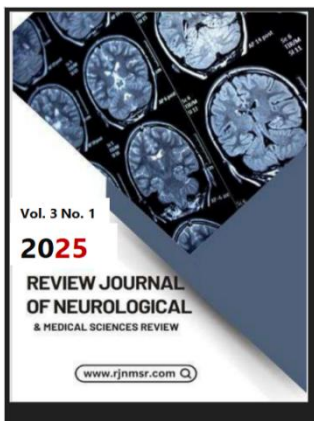
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Abstract

Introduction: An important determinant of the standard of care is patient satisfaction. This relies on the mother's perspective in the case of newborns. Studies have indicated that when mothers participate in care and get prompt and ongoing communication, they are more satisfied with the neonatal care they receive. **Objectives:** The basic aim of the study was to assess Maternal Satisfaction with Care provided to the neonates in NICU and to measure the association among satisfaction level of mothers from care and their socio-demographic profile. **Methodology:** This was a cross-sectional study carried out in Bolan Medical Complex, Sandeman Provisional Hospital and Zahid hospital. The study was completed in a very limited period of six months. A total of 285 participants were investigated using Consecutive sampling technique. All the Mothers whose patient was admitted in the NICU for at least 48 hours and mothers who stay with the patient for more than 48 hours were included in the study. Data was collected after initial approval from ethical review board KMU and hospital administrations. Data was collected using Neonatal Satisfaction Survey (NSS-13) questionnaire. Data were analyzed using SPSS version 24. **Results:** Overall, satisfaction of the mothers of child



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admitted in NICU was assessed. Half (50%) of the mothers were not satisfied from with the Care provided to the neonates in NICU followed by partially satisfied (39%) and satisfied (11%). There was no significant association among the level of satisfaction with age ($P=.749$) and length of hospital stay ($P=.113$) of the participants while a significant association ($P=.026$) was reported among level of satisfaction and education status. **Conclusion:** The findings of this study concluded that majority of the Mother were not satisfied from the care provided to their Neonate in NICU while less proportion of participants are partially or completely satisfied from the care. The role of nurses and other health care providers are very important to address the issues and enhance the level of maternal satisfaction.

Keywords: Maternal Satisfaction, Neonatal Intensive care Unit, Neonatal Care, Neonates, Nurses.

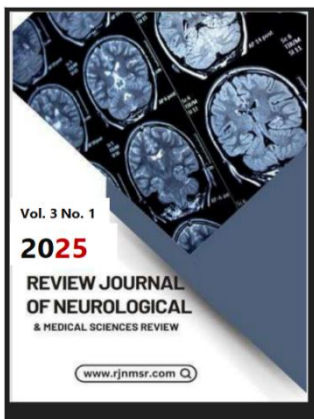
Introduction

Globally, the birth rate is 18.5 births per 1000 population. Developing countries especially Pakistan reported literally high birth rate of 27.034 per 1000 people (1,2). On one side if there is reported hi gh numbers of birth rate, the high mortality and morbidity rate among the neonates are also reported. Worldwide, approximately 2.5 million newborn babies die every day which is accounts for 46% among children age less than five years (3).

Neonatal intensive care units, also known as NICUs, are places that require rigorous risk management and offer a wide variety of services for neonatal care (4,5). It is necessary to provide critical care that is both high in cost and efficient to do so using a multidisciplinary team approach that places an emphasis on preventive efforts for improved results (6,7).

The majority of diseases are associated with admission of neonates in NICUs. Prematurity, Respiratory Distress Syndrome (RDS), infection, anatomical abnormalities, Transient Tachypnea of Newborn (TTN), Neonatal Pneumonia and Meconium Aspiration Syndrome (MAS) are some of the problems in Neonates needed Intensive care Units care (8,9). Good care of neonates assure the speedy recovery. Similarly, in the last decade, the concept of Neonatal Intensive Care Unit (NICU) has been emerged. Intensive care helped in reducing the mortality rate of neonates to a very good extent (10,11).

When an infant is admitted to in a neonatal intensive care unit (NICU) owing to acute illness, the anxiety and emotions of the child's parents are high all the time (12).The birth of the newborn is a challenging situation for the parents. This situation is usually full of pleasure and happiness. It may also lead to intense emotions, tension, depression and other psychological complication if the baby is premature or having some other health related problems if a baby is admitted in NICU (13). All these psychological consequences among the parents are associated with the newborn health, outcome of newborn, alteration in the role of the patents and fear of loss of a healthy baby (14).



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According to one definition, patient satisfaction is achieved when a patient's expectations of the care they will receive are in line with the patient's perceptions of the actual care they are given(15). A belief and an attitude regarding a particular service provided by an institution is what are meant by the term "satisfaction." Parental and patient satisfaction has become a well-established outcome indicator and tool for measuring the quality of a healthcare system, as well as input for building strategies and providing accessible, sustainable, economical, and acceptable patient care (16,17).

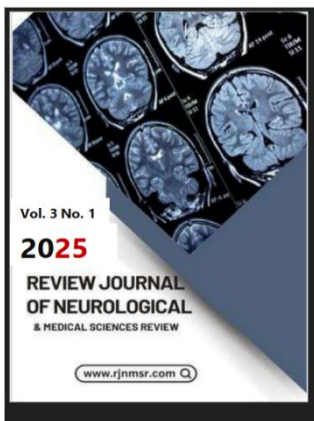
In addition, patient satisfaction has become a source of input for the development of strategies and the provision of acceptable patient care. The level of satisfaction felt by parents is a reflection of how well their expectations of ideal care are balanced with their perceptions of the care that is actually provided and available. It is also one of the goals and tasks of every health care center that provides services in a neonatal intensive care unit (18,19). Study has found a correlation between high levels of patient satisfaction and increased adherence to treatment regimens, which in turn leads to better health outcomes. The degree to which an individual feels satisfied can also be used as a predictor of subsequent health-related behavior (20).

Parents whose newborns were being treated in a neonatal intensive care unit identified the following aspects of treatment as being very significant to them: reassurance, caring, communication, consistent information, education, and environment, follow up care, pain control, participation, proximity, and support (21).

It has been found that when a mother's needs are met by a healthcare practitioner while her child is receiving treatment in the neonatal intensive care unit, she committed and reports high levels of satisfaction. This requires the staff to be emphatic, provide information in a timely manner, and be available to mothers whenever they desire to have a conversation with them(22). The ability to actively participate in the care process, have contact with their neonates, and be physically present in the unit has been shown to boost a mother's level of satisfaction with the services provided by a neonatal intensive care unit (23,24).

A variety of factors are associated with the parental satisfaction in NICU. Among these factors, some factors are related to the socio-demographic profile of the parents, some of the factors are regarding health care sector and some of the factors are related to the financial status of the parents (25). Maternal features such as their age, level of education, family size, income, occupational level, residence, and race have been known to affect levels of contentment. These are just some of the many elements that have been discovered as contributing to mothers' levels of happiness (26).

The level of satisfaction exhibited by the neonate's parents in response to the level of care offered in the Neonatal Intensive Care Unit is of critical significance. This is because the level of satisfaction exhibited by the parents reflects the quality of care offered to the infant (27). If parents aren't happy with the services provided by the newborn unit, they won't use them again and they won't encourage other people to use



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the services provided by the unit for newborns. Additionally, it results in the mothers' experiencing emotions of inadequacy and causes them to be unhappy with the staff; as a result, the efficiency of the health care system is reduced(28).

Usually, the parents with high level of psychological consequences are less satisfied with the treatment provided to their neonates in the critical care areas (29). Findings showed positive association among the good quality of care and parental satisfaction from the care provided in the critical care units (30). Similarly, the high levels of satisfaction among the parents are associated with the treatment compliance of the infant in nicu (31).

Most recently, there was a backlash over the new-born unit's location away from postnatal wards and mothers' safety when visiting the newborn unit to breastfeed their infants. The failure of treatment plans, an increase in neonatal readmissions, increased anxiety among mothers, and a lack of faith in healthcare institutions have all been caused by mothers' discontent with the care given to their newborns in the neonatal intensive care unit(32). Neonatal readmissions place a heavy cost on social services, healthcare, education, families, and careers. Mothers' increased anxiety has a detrimental impact on the mother-baby bond, which in turn has a negative impact on a neonates cognitive development and the mothers' capacity to care for the child. Therefore, it is crucial to provide high-quality care for newborns in the newborn unit in order to lower neonatal morbidity and death (33,34).

Objective of the Study

- To assess Maternal Satisfaction with Care provided to the neonates in NICU
- To measure the association among satisfaction level of mothers from care and their socio-demographic profile.

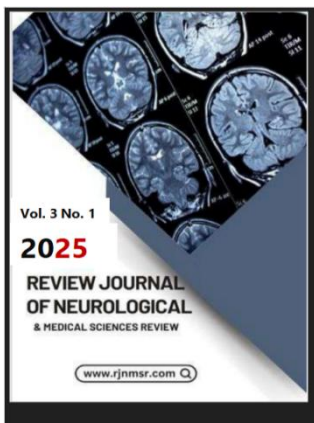
Hypothesis

- Ho: There will be no significant association among satisfaction level of mothers from care and their socio-demographic profile.
- Ha: There will be significant association among satisfaction level of mothers from care and their socio-demographic profile.

Methodology

This cross-sectional study assessed maternal satisfaction with neonatal care in the NICUs of three tertiary hospitals in Quetta (Bolan Medical Complex, Sandeman Provisional Hospital, Zahid hospital) over six months (December 2022 - May 2023). Using the Raosoft calculator (95% CI, 5% margin of error, 75% expected proportion), a sample size of 285 mothers was determined. Participants (286) were selected consecutively from mothers whose neonates had been admitted for at least 48 hours and who stayed with them, excluding those unwilling to participate or with serious mental/physical illness.

Data were collected using the standardized 65-item Neonatal Satisfaction Survey (NSS-13), which measures satisfaction across various NICU domains and categorizes overall



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satisfaction levels (Satisfied, Partially Satisfied, Not Satisfied) based on scores. After obtaining ethical approvals (KMU, ASRB) and hospital permissions, informed consent was secured, and surveys were administered confidentially in waiting areas. Data analysis using SPSS v24 involved calculating frequencies/percentages and applying Chi-square tests to explore associations between sociodemographic factors and satisfaction levels, with results presented in tables/figures

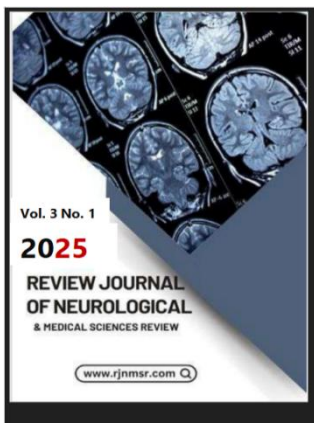
Results

Demographic Profile

The socio-demographic profile of the participants was assessed. The majority (54.4%) of the participants were in the age range of 25 to 35 years, followed by less than 25 years (26.7%), 36 to 45 years (18.6%). Nearly half (48.4%) of the participants were having 2 child while 33% of the participants reported one child. 39.3% of the participants were educated to primary level, followed by matric (31.2%) and bachelor (13.3%). The majority (55.8%) of the participants were reported less than five days stay in hospital, followed by 5 to 10 days (37.9%) and more than 10 days (6.3%) (Table 1).

Table 1: Socio-demographic profile of the participants, (n=285)

	Frequency	Percent	Valid Percent	Cumulative Percent
Age of the participants				
Less than 25 Years	76	26.7	26.7	26.7
25 to 35 Years	155	54.4	54.4	81.1
36 to 45 Years	53	18.6	18.6	99.6
More than 45 Years	1	0.4	0.4	100.0
Total	285	100.0	100.0	
Number of Babies				
1	94	33.0	33.0	33.0
2	138	48.4	48.4	81.4
3	38	13.3	13.3	94.7
4	11	3.9	3.9	98.6
5	4	1.4	1.4	100.0
Total	285	100.0	100.0	
Qualification of the participants				
Illiterate	42	14.7	14.7	14.7
Primary	112	39.3	39.3	54.0



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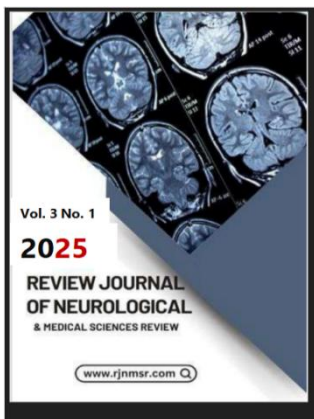
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Matric	89	31.2	31.2	85.3
Bachelor	38	13.3	13.3	98.6
Degree				
Master	4	1.4	1.4	100.0
Degree and				
Above				
Total	285	100.0	100.0	
Stay in hospital (Days)				
Less than 5	159	55.8	55.8	55.8
days				
5 to 10 days	108	37.9	37.9	93.7
More than 10	18	6.3	6.3	100.0
days				
Total	285	100.0	100.0	

Overall Satisfaction & Key Trends

Only 11% of the 285 mothers reported full satisfaction with NICU care, while 50% were dissatisfied and 39% partially satisfied. Dissatisfaction was prominent across multiple dimensions:

1. **Staff Interaction:** 29.8% dissatisfied with doctors' compassion for infants; 31.2% dissatisfied with nursing care for parents.
2. **Environment:** 34% dissatisfied with unit atmosphere; 29.8% dissatisfied with visiting areas.
3. **Information & Care:** 28.4% found information inadequate; 28.8% dissatisfied with pain relief for infants.

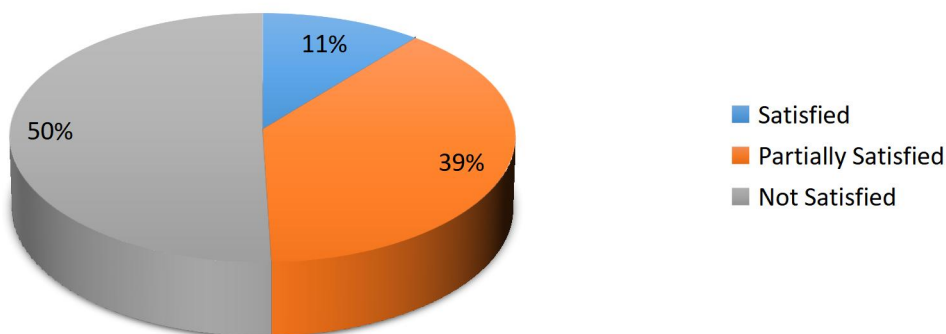


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Satisfaction level



Critical Areas of Concern

- **Communication:** 26% dissatisfied with medication side-effect explanations; 32.3% lacked milk substitute information.
- **Psychological Support:** 28.4% experienced significant stress/anxiety; 29.1% felt health personnel lacked empathy.
- **Facilities:** Dissatisfaction with sibling recreation areas (27.7%) and privacy (27.4%).
- **Nutrition:** 29.1% were excluded from nutrition decisions.

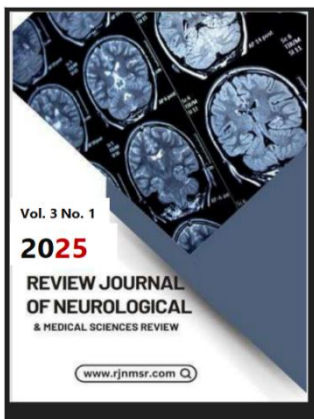
Demographic Associations

Factor	Association with Satisfaction	Significance (p-value)
Education	Significant link	0.026
- Illiterate	Highest dissatisfaction (66.7%)	-
- Matric	Highest satisfaction (19.1%)	-
Age	No significant link	0.749
Hospital Stay	No significant link	0.113

Conclusion: Maternal satisfaction in this NICU is critically low, driven by communication gaps, inadequate emotional support, environmental issues, and exclusion from decision-making. Education level significantly influences satisfaction perceptions, suggesting tailored interventions are needed.

Discussion

This study was carried out to investigate the maternal satisfaction from care of child in NICU. In this study the majority (54.4%) of the participants were from the age group of 25 to 35 years. This age corresponds with the findings of the Kenya Demographic and Health Survey, which found that between the ages of 20 and 24; around 35% of Kenyan



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women begin their reproductive years (17). Similarly, another study also provided similar findings and reported participants with the mean age of 25.58 and 28.7% of the participants were from the age group of 21 to 25 years (55).

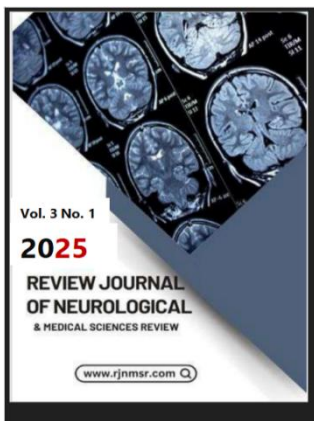
On education level, in this study majority (39.3%) of the mothers were reported primary level of education. A study carried out by Alemuet al, provided relatively similar findings and reported no formal education (35.5%) and primary education (25.5%) (18). Supporting the current findings, another study also reported primary education among majority (52.5%) mothers of children admitted in NICU (56).

Regarding the amount of time spent in the new-born unit, it was observed in this study that a higher number of patients, 55.8%, had spent between 5 and 10 days in the unit. Dynamic findings regarding length of stay of neonates in the NICU has been reported. The averageslength of stay of 7 days has been reported by the study(57) but the length care be vary on the basis of the patient's condition, illness, gestation and quality of care provided in the NICU (58,59).

In this study, half (50%) of the mothers were not satisfied from the Care provided to the neonates in NICU followed by partially satisfied (39%) and satisfied (11%). Supporting the current findings, a study carried out by All et al, in Ethiopia reported 47.8% of maternal satisfaction from the care of children in NICU(42). Besides, another similar study carried out by Ali et al, also reported findings in line with the current study and reported 50% of maternal satisfaction from care in NICU (60).

In contrast to this conclusion, research carried out in Norway (76%) (61)and Greece (99%) (62)reported significantly greater levels of parental satisfaction with NICU care. In other health care units in comparable nations (63,64), as well as globally (65,66), high levels of patient satisfaction were recorded. In NICUs, FCC is the standard, and parents are strongly urged to spend more time with their infants and to take part in the care that they get for them. Research has demonstrated that Family Center Care (FCC) can help to enhance parental satisfaction and reducing parental distress (67,68). Different studies have reported the enhancement of maternal satisfaction. Improved support from other mothers and one's own family and friends, in addition to the crucial part played by medical professionals like nurses and doctors, can contribute to greater satisfaction for mothers(69,70). Hospital environment, lenient visiting policy and regular counseling of mothers also enhance the maternal satisfaction with care of child in NICU (71).

According to the results of our research, education level was found to have a strong relationship with how satisfied the mothers were. The research found a positive and significant correlation between the high level of education and a good degree of satisfaction, which suggested that individuals with higher levels of education were more content with the NICU. This conclusion is in line with the findings of Tsironi's study (72), which revealed that parents with greater levels of education reported a higher degree of overall satisfaction. This finding may be explained by the fact that these parents had



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fewer demands, good understanding of the NICU protocols, treatment/ labs understanding and expectations placed on the health care system.

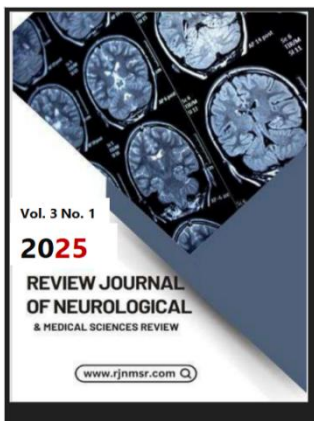
Moreover, no association among the length of stay in NICU and maternal satisfaction was found in this study. In contrast a research carried out in Ethiopia (60) and Iran (17) discovered that parents who only spent a brief amount of time in the NICU reported higher levels of contentment. It is conceivable that this is the case because parents who have neonates who were only hospitalized for a short period of time are less likely to notice their neonate's significant illnesses, which can lead to emotional and care mismanagement.

Conclusion

The findings of this study concluded that majority of the mother were not satisfied from the care provided to their neonate in NICU while less proportion of participants were partially or completely satisfied from the care. It is the responsibility of medical professionals to ensure that parents are satisfied with the health care of their children, with the mother being more so because hospital offer nursing care and information-oriented treatment. Consideration should be given to different components of the overall provision made for families who have been adversely affected in order to raise and maintain the level of parental satisfaction with NICU treatment. Moreover, medical staff and nursing staff could address the needs of all family members as these change throughout the phases of their hospital stays; be more attentive to parents of very preterm infants and parents with long admissions to the NICU; provide support to siblings; and pay more attention to the needs of parents for continuity of care, and information.

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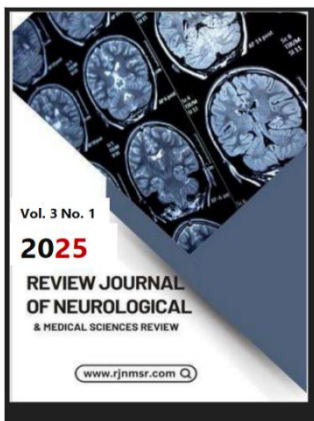


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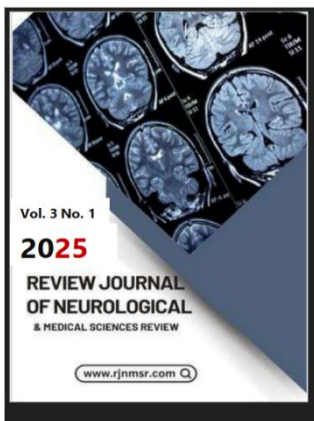


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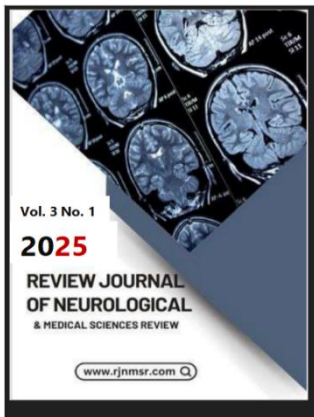


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