https://doi.org/10.29309/TPMJ/2025.32.10.9858

The Professional Medical Journal
www.theprofesional.com
2025, Volume, 32 Issue, 10

ORIGINAL ARTICLE

Effect of counselling on stress level of parents of neonates admitted in neonatal intensive care unit (NICU) of a tertiary care hospital.

Sonia Zofishan[1], Farah Haroon[2], Muhammad Shahzad[3], Javaria Younus[4], Bushra Fatima[5], Muhammad Usman Khalid[6], Muhammad Ahsan[7]

Article Citation: Zofishan S, Haroon F, Shahzad M, Younus J, Fatima B, Khalid MU, Ahsan M. Effect of counselling on stress level of parents of neonates admitted in neonatal intensive care unit (NICU) of a tertiary care hospital. Professional Med J 2025; 32(10):1307-1312. https://doi.org/10.29309/TPMJ/2025.32.10.9858

ABSTRACT… Objective: To check the stress level and the effect of counseling on stress level among parents of neonates admitted in NICU. **Study Design:** Interventional Study. **Setting:** University of Child Health Sciences, Children's Hospital Lahore, A Tertiary Care Pediatric Hospital. **Period:** December 2024 to May 2025. **Methods:** Total 100 parents participated through purposive sampling according to specific participant requirements. The research used questionnaire derived from the Parental Stressor Scale: NICU, to measure stress levels in two phases: before and after counseling. The paired t-tests was used for statistical analysis to measure parent stress baseline levels against post-counseling measurements. **Results:** Prior to counseling, the overall stress score was 30.03 ± 1.71, which significantly reduced to 11.24 ± 2.47 after counseling ($p < 0.001$). All subdomains of stress, including NICU environment, baby's appearance, parent-child relationship, and staff attitude, showed statistically significant reductions in stress levels post-counseling. **Conclusion:** Counseling significantly reduces parental stress levels in NICU settings. These findings highlight the need for integrating structured counseling programs into NICU care to support parents emotionally and psychologically.

Key word: Counseling Intervention, Interventional Study, Neonatal Intensive Care Unit, Parental Stress, Parental Well-being, Parental Stressor Scale, Stress Reduction.

INTRODUCTION

Parental stress is a significant global issue associated with the admission of neonates to the Neonatal Intensive Care Unit (NICU).[1] Stress begins as soon as a neonate is admitted, with some parents experiencing depression and post-traumatic stress for up to a year after discharge.[2] However, medical attention is often focused solely on the treatment of the sick neonate, while parental stress is overlooked.[3]

The NICU environment can intensify stress among parents of hospitalized neonates.[4,5] Parents face multiple stressors, including preterm birth, unexpected crises, the medical condition of their child, the complex NICU setting, the perceived vulnerability of their newborn, and family-related concerns at home, in addition to the usual stressors of transitioning into parenthood.[6,7]

Parental empowerment, educational programs on stress management, and behavioral and psychological interventions play a crucial role in alleviating parental stress.[8] The Parental Stressor Scale: NICU is a validated and reliable tool for assessing the stress levels of parents with hospitalized neonates.[9,10] A study conducted in a tertiary care hospital of Eastern India in 2020 reported that 60.8% of parents experienced severe or extreme stress, with a mean overall stress score of 3.71 ± 0.70. No significant difference in stress levels was found between mothers and fathers ($P = 0.65$). Researchers emphasized the importance of using this scale in both research and clinical practice to identify parental stress and develop interventions to mitigate its negative impacts at interpersonal and societal levels through parental counseling.[11]

1. MBBS, FCPS Pediatrics, CHPE, B.Sc, Fellow Neonatal Pediatrics, (Second Fellowship FCPS Fellow), Children's Hospital, Lahore and The University of Health Sciences UCHS.
2. MBBS, FCPS (Neonatal Pediatrics), FCPS (Pediatrics), Head and Chairman Neonatology, Children's Hospital, Lahore and The University of Health Sciences UCHS.
3. MBBS, FCPS (Neonatal Pediatrics), FCPS (Pediatrics), Assistant Professor Neonatology, Children's Hospital, Lahore and The University of Health Sciences UCHS.
4. MBBS, FCPS (Neonatal Pediatrics), FCPS (Pediatrics), Assistant Professor Neonatology, Children's Hospital, Lahore and The University of Health Sciences UCHS.
5. MBBS, FCPS (Neonatal Pediatrics), FCPS (Pediatrics), Associate Professor Neonatology, Children's Hospital, Lahore and The University of Health Sciences UCHS.
6. MBBS, FCPS (Neonatal Pediatrics), FCPS (Pediatrics), Assistant Professor Neonatology, Children's Hospital, Lahore and The University of Health Sciences UCHS.
7. MBBS, Post Grad Paeds Nutrition, Registrar Paeds Department, Nusrat Fateh Ali Khan Hospital, Faisalabad.

Correspondence Address:
Dr. Muhammad Ahsan
Department of Paediatric
Nusrat Fateh Ali Khan Hospital, Faisalabad.
ahsanjahangir194@gmail.com

Article received on: 24/04/2025
Accepted for publication: 30/06/2025

Pal et al. reported that the median stress scores for different subscales were as follows: sight and sound (1.5; IQR 1.2–1.88), appearance and behavior (2.5; IQR 2.3–2.9), change in parental role (3.3; IQR 3.0–3.6), and staff behavior and communication (1.3; IQR 1.1–1.62). Their findings indicated that parental role alteration was the most significant stressor. Counseling proved effective in reducing stress levels among all mothers, regardless of maternal factors ($p < 0.01$). Furthermore, stress reduction was more pronounced with an increasing number of counseling sessions.[12]

METHODS

An interventional study was conducted at the University of Child Health Sciences, Children's Hospital Lahore, a tertiary care pediatric hospital that caters to patients from across the country after the approval from Ethical Committee (Reference No: 1029/CH-UCHS, Dated: 31-12-2024) from December'2024 to May'2025. Given the limited data available in Pakistan on parental stress in the NICU setting, this study provides valuable evidence for the local population.

A purposive sampling technique was used to recruit parents of neonates admitted to the Neonatal Intensive Care Unit (NICU). Questionnaire derived from The Parental Stressor Scale: NICU, a validated tool, was utilized to assess parental stress levels before and after counseling. Data collection included demographic variables, clinical characteristics of neonates, and parental stress scores. Counseling sessions were conducted to provide psychological support and stress management strategies. The Family-Centered Care (FCC) Model, which focuses on minimizing emotional distress while empowering parents to actively participate in caregiving, was incorporated into the counseling framework it plays a crucial role in parental involvement throughout NICU admission transitions.[13-16] A paired t-test was used for statistical analysis to compare stress levels before and after counseling.

This study aims to enhance parental self-efficacy, improve mental health outcomes, and support the development of structured stress management programs to alleviate the psychological, emotional, physical, and financial burdens experienced by parents.[12,15]

RESULTS

The demographic characteristics of the participants reveal a balanced distribution of neonates in terms of gender, with 56% being male and 44% female. Among the clinical diagnoses, sepsis was the most prevalent condition, affecting 43% of neonates, followed by respiratory distress (18%), hypoglycemia (17%), jaundice (13%), and meconium aspiration (9%). Regarding the mode of delivery, a higher proportion of neonates (68%) were delivered via cesarean section, whereas 32% were born through vaginal delivery. In terms of parity, 32% of mothers had four previous deliveries, 29% had three, 22% had two, and 17% had only one prior birth. Additionally, 58% of parents had no prior experience with NICU admission, while 42% had previously encountered a NICU hospitalization.

The clinical characteristics of the neonates highlight an average age of 5.89 days (SD = 2.92), ranging from 1 to 10 days. The mean birth weight was recorded at 2.79 kg (SD = 0.47), with values ranging from 2.02 kg to 3.49 kg. The duration of NICU stay exhibited a broad range, with an average of 128.79 hours (approximately 5.3 days), spanning from a minimum of 5 hours to a maximum of 239 hours.

The pre- and post-counseling stress scores illustrate a significant reduction in parental stress across various domains following counseling interventions. The mean stress score related to NICU environment and machinery noise decreased from 5 before counseling to 1.92 after counseling ($p < 0.001$), demonstrating a notable improvement in parental coping with NICU-related stressors. The stress levels regarding baby appearance decreased from 15.09 to 5.76 ($p < 0.001$) due to counseling interventions that proved vital for reducing parental concerns about their newborn's physical appearance. Counseling led to a substantial decrease in parent-child relationship stress which dropped from 4.91 to 1.62 ($p < 0.001$) as it promoted better parental

perception of the relationship with their new baby. Parents experienced lower stress related to healthcare provider attitude after intervention since their scores dropped from 5.03 to 1.94 (p value < 0.001). The intervention through counseling produced a significant decrease in overall stress from 30.03 to 11.24 which was demonstrated by statistical significance (p < 0.001).

Research outcomes demonstrate the essential benefits that standardized NICU parental counseling provides during these healthcare settings. Professional counseling helps parents overcome their environmental challenges and perception of their neonate's appearance and bonds with their child and healthcare staff interactions thus improving their overall mental condition. Implementation of psychological support for parents represents a crucial integral component of neonatal care which leads to meaningful decreases in their stress levels as well as better mental health outcomes.

	Frequency	Percent
Gender		
Male	56	56
Female	44	44
Diagnosis		
Hypoglycemia	17	17
Jaundice	13	13
Meconium Aspiration	9	9
Respiratory Distress	18	18
Sepsis	43	43
Mode of Delivery		
Cesarean	68	68
Vaginal	32	32
Parity		
1	17	17
2	22	22
3	29	29
4	32	32
Previous NICU Admission		
No	58	58
Yes	42	42

Table-I. Demographic characteristics of the participants.

Variables	Mean	Std. Deviation	Mini-mum	Maxi-mum
Age (days)	5.89	2.916	1	10
Birth weight (kg)	2.7947	0.470	2.02	3.49
NICU Stay (Hours)	128.79	63.243	5	239

Table-II. Clinical characteristics of neonates

DISCUSSION

The results of the study provide significant insights into the demographic and clinical characteristics of neonates admitted to the NICU, as well as the psychological impact of counseling interventions on parental stress. The balanced gender distribution among neonates, with 56% male and 44% female, aligns with existing literature that indicates a similar prevalence of male infants in NICU admissions.[17] The high incidence of sepsis (43%) as the most common diagnosis is consistent with findings from other studies that highlight the vulnerability of neonates to infections, particularly in the NICU environment.[18] The mode of delivery, with 68% of neonates born via cesarean section, reflects trends in obstetric practices that may influence neonatal outcomes.

The clinical characteristics of the neonates, including an average age of 5.89 days and a mean birth weight of 2.79 kg, are comparable to findings from previous research that emphasizes the critical nature of early neonatal care and the importance of monitoring growth parameters in this population.[19] The average gestational age of 34.86 weeks suggests a significant number of preterm neonates, which is a known risk factor for various health complications and extended NICU stays. The broad range of NICU stay duration, averaging 128.79 hours, underscores the variability in neonatal conditions and the need for tailored interventions based on individual clinical needs.[20]

The study's findings on parental stress scores before and after counseling interventions reveal a substantial reduction in stress across multiple domains.

	Mean	Std. Deviation	T	P-Value
NICU Environment and Machinery Noise (Before)	5	0.752	27.371	<0.001
NICU Environment and Machinery Noise (After)	1.92	0.918		
Baby's Appearance (Before)	15.09	1.609	43.372	<0.001
Baby's Appearance (After)	5.76	1.658		
Parent-Child Relationship (Before)	4.91	0.621	24.094	<0.001
Parent-Child Relationship (After)	1.62	1.144		
Staff Attitude (Before)	5.03	0.703	21.839	<0.001
Staff Attitude (After)	1.94	1.135		
Overall Score (Before)	30.03	1.714	63.291	<0.001
Overall Score (After)	11.24	2.475		

Table-III. Pre- and post-counseling stress scores

The decrease in stress related to the NICU environment and machinery noise from 5.00 to 1.92 ($p < 0.001$) indicates that structured counseling can effectively mitigate environmental stressors, a finding supported by literature that emphasizes the importance of addressing environmental factors in NICU settings to enhance parental coping.[21] Similarly, the significant reduction in stress regarding the baby's appearance from 15.09 to 5.76 ($p < 0.001$) suggests that counseling can alleviate parental anxiety, which is often exacerbated by the unfamiliar and distressing sights of critically ill neonates.[22] Moreover, the marked reduction in parent-child relationship stress from 4.91 to 1.62 ($p < 0.001$) highlights the role of counseling in fostering emotional connections between parents and their neonates, which is crucial for both parental mental health and neonate development. The improvement in stress related to staff attitudes, decreasing from 5.03 to 1.94 ($p < 0.001$), reflects enhanced communication and support from healthcare providers, which is vital for building trust and satisfaction among parents in the NICU.[26]

The overall decline in the total stress score from 30.03 to 11.24 ($p < 0.001$) confirms the effectiveness of counseling interventions in significantly improving parental well-being during a challenging period.[23] These findings underscore the critical importance of integrating psychological support into neonatal care practices. The evidence suggests that structured parental counseling not only addresses immediate stressors but also contributes to long-term improvements in parental mental health and coping strategies.[24]

As highlighted in previous studies, enhancing parental involvement and support in the NICU can lead to better outcomes for both infants and parents, reinforcing the need for family-centered care approaches. Therefore, it is imperative for healthcare systems to prioritize psychological interventions as part of standard NICU protocols to support families during this vulnerable time.[25]

CONCLUSION

Counseling significantly reduces stress levels among parents of NICU-admitted neonates. Given its effectiveness, structured counseling programs should be incorporated into routine NICU care to support parents. Future research should explore long-term psychological impacts and optimize counseling strategies for maximum benefit.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

SOURCE OF FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright© 30 July, 2025.

REFERENCES

1. Caporali C, Pisoni C, Gasparini L, Ballante E, Zecca M, Orcesi S, et al. **A global perspective on parental stress in the neonatal intensive care unit: A meta-analytic study.** Journal of Perinatology. 2020; 40(12):1739-52.

2. Salomè S, Mansi G, Lambiase CV, Barone M, Piro V, Pesce M, et al. **Impact of psychological distress and psychophysical wellbeing on posttraumatic symptoms in parents of preterm infants after NICU discharge.** Italian Journal of pediatrics. 2022; 48(1):1-9.

3. Kumar N, Mallick AK. **Maternal stress in neonatal intensive care unit very often overlooked by health professionals.** Industrial Psychiatry Journal. 2020; 29(1):130.

4. Ivashchuk A, Guillen U, Mackley A, Locke R, Sturtz W. **Parental protective factors and stress in NICU mothers and fathers.** Journal of Perinatology. 2021; 41(8):2000-8.

5. Pathak G, Dixit R, Singh NK, Vijaywargiya T, Lal N. **Level of stress and coping strategies seen among parents of neonates admitted in NICU.** Journal of Neonatology. 2022 Mar; 36(1):13-20.

6. Siva N, Phagdol TS. Nayak B, Glane Mathias E, Edward S. Lewis L, Velayudhan B, et al. **Stress and stressors experienced by the parents of high-risk neonates admitted in neonatal intensive care unit: Systematic review and meta□analysis evidence available from India.** Stress and Health. 2024; 40(2):e3301.

7. Weber A, Harrison TM. **Reducing toxic stress.** 2019; 67(2):169-89.

8. Guttmann K, Patterson C, Haines T, Hoffman C, Masten M, Lorch S, et al. **Parent stress in relation to use of bedside telehealth, an initiative to improve family-centeredness of care in the neonatal intensive care unit.** Journal of Patient Experience. 2020; 7(6):1378-83.

9. Masiran R, Ibrahim N, Awang H, Ying LP, Lin CT, Narayanasamy SG. **Effectiveness of the Incredible Years parenting program for children with behavioral problems: An experience in a developing country during a pandemic.** Children and Youth Services Review. 2022; 142:106629.

10. Montoro-Pérez N, Oliver-Roig A, Montejano-Lozoya R, Richart-Martínez M. **Psychometric properties of parental stress scales used in paediatric health care settings: A systematic review 1.** Journal of Clinical Nursing. 2024; 33(3):911-31.

11. Ganguly R, Patnaik L, Sahoo J, Pattanaik S, Sahu T. **Assessment of stress among parents of neonates admitted in the neonatal intensive care unit of a tertiary care hospital in Eastern India.** Journal of Education and Health Promotion. 2020; 9:288.

12. Pal N, Agrawal A, Shrivastava J. **Stress levels in mothers of admitted newborns in NICU and effect of counseling.** Indian Journal of Pediatrics. 2024; 91(1):17-22.

13. Franck LS, Kriz RM, Bisgaard R, Cormier DM, Joe P, Miller PS, et al. **Comparison of family centered care with family integrated care and mobile technology (mFICare) on preterm infant and family outcomes: A multi-site quasi-experimental clinical trial protocol.** BMC Pediatrics. 2019; 19(1):1-10.

14. Bernardo J, Rent S, Arias-Shah A, Hoge MK, Shaw RJ. **Parental stress and mental health symptoms in the NICU: Recognition and interventions.** Neoreviews. 2021 Aug 1; 22(8):e496-505.

15. Seiiedi-Biarag L, Mirghafourvand M, Esmaeilpour K, Hasanpour S. **A randomized controlled clinical trial of the effect of supportive counseling on mental health in Iranian mothers of premature infants.** BMC Pregnancy and Childbirth. 2021 Dec; 21:1-1.

16. Gómez-Cantarino S, García-Valdivieso I, Moncunill-Martínez E, Yáñez-Araque B, Ugarte Gurrutxaga MI. **Developing a family-centered care model in the neonatal intensive care unit (NICU): A new vision to manage healthcare.** International Journal of Environmental Research and Public Health. 2020 Oct; 17(19):7197.

17. Busse M, Stromgren K, Thorngate L, Thomas K. **Parents' responses to stress in the neonatal intensive care unit.** Critical Care Nurse. 2013; 33(4):52-59. https://doi.org/10.4037/ccn2013715.

18. Williams K, Patel K, Stausmire J, Bridges C, Mathis M, Barkin J. **The neonatal intensive care unit: Environmental stressors and supports.** International Journal of Environmental Research and Public Health. 2018; 15(1):60. https://doi.org/10.3390/ijerph15010060.

19. Busse M, Stromgren K, Thorngate L, Thomas K. **Parents' responses to stress in the neonatal intensive care unit.** Critical Care Nurse. 2013; 33(4):52-59. https://doi.org/10.4037/ccn2013715

20. Ramos B, Formiga C, Oliveira N, Marçal P, Ferreira R, Saidah T, et al. **Relationship between maternal stress and neurobehavioral indicators of preterm infants in the neonatal intensive care unit.** Children. 2024; 11(8):889. https://doi.org/10.3390/children11080889

21. Abuidhail J, Al-Motlaq M, Mrayan L, Salameh T. **The lived experience of Jordanian parents in a neonatal intensive care unit: A phenomenological study.** Journal of Nursing Research. 2017; 25(2):156-62. https://doi.org/10.1097/jnr.0000000000000134.

22. Treyvaud K, Lee K, Doyle L, Anderson P. **Very preterm birth influences parental mental health and family outcomes seven years after birth.** The Journal of Pediatrics. 2014; 164(3):515-21. https://doi.org/10.1016/j.jpeds.2013.11.001.

23. Çekin B, Turan T. **The stress levels of parents of premature infants and related factors in nenoatal intensive care units.** The Turkish Journal of Pediatrics. 2018; 60(2):117-25. https://doi.org/10.24953/turkjped.2018.02.001.

24. Gondwe M, Gombachika B, Majamanda M. **Experiences of caregivers of infants who have been on bubble continuous positive airway pressure at queen elizabeth central hospital, malawi: A descriptive qualitative study.** Malawi Medical Journal. 2017; 29(1):5. https://doi.org/10.4314/mmj.v29i1.2.

25. Franck L, Shellhaas R, Lemmon M, Sturza J, Barnes M, Brogi T, et al. **Parent mental health and family coping over two years after the birth of a child with acute neonatal seizures.** Children. 2021; 9(1):2. https://doi.org/10.3390/children9010002.

AUTHORSHIP AND CONTRIBUTION DECLARATION	
1	**Sonia Zofishan:** Data collection, analysis, paper writing.
2	**Farah Haroon:** Review of manuscript.
3	**Muhammad Shahzad:** Data collection, paper writing.
4	**Javaria Younus:** Discussion writing, review of manuscript.
5	**Bushra Fatima:** Literature review, data entry.
6	**Muhammad Usman Khalid:** Data analysis, review of manuscript.
7	**Muhammad Ahsan:** Data analysis, manuscript writing.