

## Impact of Counselling on Parental Stress Levels in the Paediatric Intensive Care Unit

Borsaniya Hardik Rameshchandra<sup>1</sup>, Bhavesh Parmar<sup>2</sup>, Surani Jaydeep Babulal<sup>3</sup>, Hiral Parejiya<sup>4</sup>

<sup>1,3</sup>Junior Resident, Department of Pediatrics, GMERS Medical College, Morbi, Gujarat

<sup>2</sup>Tutor, Department of Microbiology, GMERS Medical College, Morbi, Gujarat

<sup>4</sup>MBBS, GMERS Medical College, Dharpur, Patan, Gujarat

Received: 25-08-2024 / Revised: 23-09-2024 / Accepted: 26-10-2024

Corresponding Author: Dr. Hiral Parejiya

Conflict of interest: Nil

### Abstract:

**Introduction:** The Pediatric Intensive Care Unit (PICU) serves as a critical setting where parents face immense emotional challenges as their children undergo life-threatening medical care. The stress experienced by parents stems from various factors, including the severity of their child's condition, emotional strain, financial burdens, and disruptions to family dynamics. This cumulative stress significantly impacts parental well-being, making it essential to explore factors contributing to stress and assess interventions like counselling to mitigate its effects.

**Material and Methods:** This observational study, conducted over one year in a tertiary care center in Gujarat, included 170 parents of children aged 1 month to 13 years admitted to the PICU for at least 48 hours. Parental stress levels were assessed using the validated PSS: PICU scale, with pre- and post-counseling evaluations. Structured counselling, delivered using an IEC-based model, included one-on-one and group sessions to address misconceptions and provide peer support. Data analysis, performed using descriptive and inferential statistics, highlighted the effectiveness of counselling in reducing parental stress, ensuring participant confidentiality and ethical compliance.

**Results:** In our study, most patients (50.6%) were under 1 year, with a higher proportion of males (55.8%). Ventilatory support was required by 47.1% of patients, and 53.5% received ionotropes. The majority (62.9%) stayed in the PICU for 4-7 days, with 35.3% having hospital stays of more than 10 days. Parental demographics revealed fathers predominantly aged 30-39 years (43.2%) and mothers aged 20-29 years (76.0%). Socioeconomic status showed 53.5% of parents in the upper-lower SES. Counselling sessions averaged  $2.36 \pm 1.08$ , with stress levels highest for "Sight and Sound" ( $9.68 \pm 2.984$ ) and lowest for "Behavior of Professional Staff" ( $1.77 \pm 1.817$ ). Significant stress reduction was observed post-counseling in discharged patients ( $p = 0.001$ ), but not in those who died ( $p = 0.468$ ) or others ( $p = 0.562$ ).

**Conclusion:** Counselling significantly reduces parental stress in the PICU, particularly among discharged patients, highlighting its role in supporting families during critical care. Tailored psychological support is essential for improving parental well-being and resilience.

**Keywords:** Parental stress, PICU, counselling, psychological support.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

### Introduction

The Pediatric Intensive Care Unit (PICU) represents a critical juncture in the lives of parents with children facing life-threatening medical conditions. [1] The PICU, with its state-of-the-art medical technologies and highly specialized staff, is a beacon of hope for families in their most challenging moments. However, it is also a place where parents navigate a daunting labyrinth of fear, uncertainty, and emotional turmoil. [2] The admission of a child to a PICU triggers a cascade of stressors that are often overwhelming, profoundly affecting the well-being of parents. [3] The stress experienced by parents in the PICU setting is an intricate interplay of factors. At the forefront is the

gravity of the child's medical condition, which often looms over parents like an ominous shadow. [4] The emotional strain of witnessing a child's suffering, coupled with the fear of potential loss, places parents in a state of profound distress. [5] Additionally, parents may be grappling with financial burdens related to healthcare costs and the potential impact of the child's illness on their livelihoods. [6] Furthermore, family dynamics can undergo significant changes as parents devote their attention to the hospitalized child, potentially causing stress within the family unit. The cumulative effect of these stressors on the mental and physical health of parents is a subject of utmost

concern. [7] The present study aims to investigate the factors that contribute to parental stress when their child is admitted to a PICU.

### Material and Methods

This observational study was conducted at the Department of Paediatrics in a tertiary care center in Gujarat over a duration of one year. Parents of children admitted to the Paediatric Intensive Care Unit (PICU) were recruited for the study based on predefined inclusion and exclusion criteria. Participants were selected through consecutive sampling, ensuring representation of diverse demographic profiles. The primary focus was to identify factors influencing parental stress and evaluate the impact of structured counselling sessions.

The study included parents of children aged 1 month to 13 years admitted to the PICU for at least 48 hours. Parents with a history of psychiatric illness or those whose children stayed less than 48 hours were excluded. Data regarding demographic variables, such as parental age, education level, occupation, and income, were recorded. A total of 170 participants were recruited, with the sample size calculated using a 95% confidence interval and a 7.5% margin of error.

Parental stress levels were measured using the Parental Stressor Scale for Paediatric Intensive Care Unit (PSS: PICU), a validated 37-item questionnaire available in both English and Hindi. The scale evaluated stressors across three broad domains—personal family, situational, and environmental stressors—using a 5-point Likert scale. Pre-counseling stress levels were assessed within 2 to 5 days of admission. Follow-up

assessments were conducted 48 hours post-counseling sessions.

Counselling interventions were delivered using an IEC-based model (Information, Education, and Counselling). The initial session was conducted one-on-one, focusing on providing clear information about the child's condition and addressing misconceptions. Subsequent group counselling sessions, lasting 20-30 minutes, were conducted every 48 hours depending on the child's PICU stay duration. The sessions aimed to alleviate stress through structured guidance and peer support.

Data were collected using structured questionnaires and entered into a master chart. Statistical analysis was performed using MS Excel and Epi Info software. Descriptive statistics were employed for demographic and baseline characteristics, while inferential tests, such as the Chi-square test, were applied to evaluate changes in stress levels pre- and post-counseling. Written informed consent was obtained from all participants. Confidentiality of participant data was maintained, and no additional cost or harm was incurred by participants due to their involvement in the study.

### Results

In our study, the age distribution of patients showed that 50.6% were less than 1 year old, with a higher proportion of males (55.8%) compared to females (42.4%). Patients aged 1-5 years constituted 35.3% of the total, with males (32.7%) slightly outnumbering females (39.4%). Those over 5 years made up the smallest group at 14.1%, with an equal distribution between males (11.5%) and females (18.2%).

**Table 1: Distribution of Patients by Age and Gender**

Age Group	Female n (%)	Male n (%)	Total n (%)
<1 year	28 (42.4%)	58 (55.8%)	86 (50.6%)
>5 years	12 (18.2%)	12 (11.5%)	24 (14.1%)
1-5 years	26 (39.4%)	34 (32.7%)	60 (35.3%)
Total	66 (100.0%)	104 (100.0%)	170 (100.0%)

Among the 170 participants, 47.1% required ventilatory support, while 52.9% did not. Ionotropes were administered to 53.5% of patients. Most patients (62.9%) stayed in the PICU for 4-7 days, with 28.2% staying 1-3 days and 8.8% staying over 7 days. Overall hospital stay durations were distributed as follows: 31.8% stayed 3-5 days, 32.9% for 5-10 days, and 35.3% for more than 10 days.

Parental demographics revealed that fathers were predominantly aged 30-39 years (43.2%), followed by 20-29 years (41.1%), and over 40 years (15.8%). Mothers were mostly aged 20-29 years (76.0%), with fewer in the 30-39 years group (22.7%) and a

minimal percentage over 40 years (1.3%). Regarding education, 42.9% of parents had schooling up to class 1-4, 35.3% up to class 5-8, and 15.9% up to class 9-10, while 2.4% were illiterate and 3.5% had education up to class 11-12. About socioeconomic status (SES) distribution showed that 16.5% of parents were in the lower SES, 30.0% in the lower-middle SES, and 53.5% in the upper-lower SES. Counselling sessions were distributed as follows: 25.3% received 1 session, 34.1% had 2 sessions, 19.4% attended 3 sessions, and 21.2% completed 4 sessions, with a mean of  $2.36 \pm 1.08$  sessions.

Table 12 summarizes parental stress levels based on the Parental Stressor Score before counselling, with the highest stress observed for "Sight and

Sound" ( $9.68 \pm 2.984$ ) and the lowest for "Behavior of Professional Staff" ( $1.77 \pm 1.817$ ).

**Table 2: Stress among Parents Based on Parental Stressor Score before Counselling**

Parental Stressor	Pre-Counseling (Mean $\pm$ SD)
Child's Appearance	$4.21 \pm 2.549$
Sight and Sound	$9.68 \pm 2.984$
Procedures	$8.67 \pm 3.400$
Professional Staff Communication	$4.34 \pm 2.608$
Behavior and Emotional	$8.87 \pm 4.441$
Behavior of Professional Staff	$1.77 \pm 1.817$
Parental Role	$8.21 \pm 3.011$

Table 3 shows the comparison of pre- and post-counseling PSS scores by outcome, with significant stress reduction observed in discharged patients ( $p = 0.001$ ), while no significant change was noted for those who died ( $p = 0.468$ ) or others ( $p = 0.562$ ).

**Table 3: Comparing Pre and Post Counselling PSS Scores with Outcome:**

Outcome	Pre-Counseling (Mean $\pm$ SD)	After First Counselling (Mean $\pm$ SD)	P-value
Died	$46.23 \pm 10.468$	$41.08 \pm 9.867$	0.468
Discharged	$39.61 \pm 12.484$	$29.20 \pm 12.612$	0.001
Others	$46.92 \pm 12.045$	$38.31 \pm 15.058$	0.562

Table 4 compares pre- and post-counseling PSS scores based on outcomes, showing significant stress reduction in discharged patients ( $p = 0.001$ ) but no significant change in those who died ( $p = 0.468$ ) or others ( $p = 0.562$ ).

**Table 4: Comparing Pre and Post Counselling PSS Scores with Duration of Hospital Stay:**

Duration of Hospital Stay	Died (Pre)	Died (After First)	Discharged (Pre)	Discharged (After First)	Others (Pre)	Others (After First)
3-5 days	$45.08 \pm 10.8$	$40.84 \pm 10.09$	$45.2 \pm 5.54$	$36.60 \pm 6.5$	$46.82 \pm 13.0$	$38.36 \pm 16.1$
5-10 days	$51.44 \pm 7.90$	$42.67 \pm 9.72$	$32.93 \pm 11.94$	$22.93 \pm 12.6$	$47.50 \pm 6.36$	$38.0 \pm 9.8$
>10 days	43.0	36.0	$44.24 \pm 10.9$	$33.36 \pm 10.9$	-	-
P-value	0.023		<0.001		<0.001	

## Discussion

In our study, the total number of patients was 170, with a higher admission rate in males (61%) and infants under 1 year (50.6%). Other studies have shown similar trends. For instance, Aamir et al. [9] reported that in a study of 49 parents, boys constituted 49% of the children admitted to the PICU, while girls constituted 51%, indicating a near-even gender distribution but with a slight predominance of female children. Stremmer et al. [10] found that over half of the participating children were under the age of one (59%) and there was a relatively even gender distribution, with a slight predominance of male children. This consistent observation across different studies suggests that younger children, particularly infants, and males are more frequently admitted to intensive care units, possibly due to higher vulnerability to severe health conditions in these demographics.

In our study, out of 170 patients, 64.1% were discharged and 28.2% died, highlighting the critical nature of conditions treated in the PICU. This high mortality rate underscores the severe and often life-

threatening conditions managed in the PICU. Similar findings were observed by Stremmer et al. [10] (2017), where a significant portion of the patients required intensive interventions, leading to varied outcomes. The study noted that the PICU environment and the severity of conditions significantly impacted patient outcomes, often resulting in high mortality rates despite advanced medical care.

A study by Shudy et al. [11] also reported comparable outcomes, with a substantial number of patients experiencing severe complications necessitating prolonged PICU stays and leading to high discharge and mortality rates. This study emphasized the importance of early and aggressive interventions to improve survival rates. Another study by Diaz-Caneja et al. [12] observed that the critical nature of conditions, particularly among those requiring mechanical ventilation or suffering from severe infections, contributed significantly to the high mortality rates in the PICU.

In our study, the majority of patients (62.9%) stayed in the PICU for 4-7 days, reflecting the intensive nature of care required for stabilization. Similar findings were observed by Diaz-Caneja et

al. [12], where children admitted to the PICU had a mean duration of stay of 4 days, after which they were transferred to general pediatric wards for further care. This transition period indicates the critical nature of the initial stabilization phase in the PICU before moving to less intensive care environments.

Additionally, a study by Stremmer et al. [10] highlighted that the duration of PICU stay is significantly associated with increased psychological distress among parents, indicating the prolonged impact on families even after discharge. This study aligns with the findings of Baker et al. [13], which showed that longer PICU stays correlate with higher levels of parental stress and anxiety, emphasizing the need for psychological support interventions during and after the PICU stay. These studies collectively underscore the demanding nature of PICU stays and the extensive care required to stabilize critically ill children, as well as the broader impact on families.

The majority of parents in our study had basic education, with 42.9% educated up to class 1-4. Ramirez et al. [14] noted that parental education significantly influenced stress levels, with parents having only primary education experiencing higher stress. This could be attributed to a lack of understanding of medical procedures and communication barriers with healthcare professionals. Similarly, Stremmer et al. [10] found that a considerable number of parents had basic education, which may impact their ability to cope with the stress of having a child in the PICU.

In our study, parents aged 30-39 years had the highest mean pre-counseling stress score (44.83). This trend is consistent with the findings of Ramirez et al. [14] (2018), who noted that parental stress was significantly higher among parents aged 30-40 years. This age group often faces additional stressors such as career responsibilities and caring for other children, which can exacerbate their stress levels when dealing with a critically ill child. Similarly, Upadhyay and Parashar [15] (2022) observed that middle-aged parents, particularly those in the 30-39 age bracket, reported higher stress levels due to the combined pressures of work, family, and their child's medical condition.

The highest stressor before counseling was "Sight and Sound," with a mean score of 9.68. This finding aligns with the study by Diaz-Caneja et al. [12], which highlighted that the visual and auditory stimuli in the PICU, such as monitor alarms and the appearance of medical equipment, were significant stressors for parents.

Similarly, the study by Baker et al. [13] found that sights and sounds in the PICU environment were primary sources of stress, causing anxiety and dis-

tress among parents. Shudy et al. [11] also reported that sudden sounds from medical devices and the sight of their child attached to various monitors and tubes were highly stressful for parents. These consistent findings across studies underline the importance of addressing environmental factors in the PICU to mitigate parental stress.

Significant stress reduction was observed in parents with longer hospital stays, especially over 10 days. The study by Ramirez et al. [16] (2018) demonstrated that parents with children hospitalized for extended periods benefitted the most from consistent counseling sessions. This is likely due to the cumulative stress of prolonged hospital stays, which can be effectively mitigated through regular psychological support.

Additionally, Baker et al. [13] (2017) found that parents of children with longer hospitalizations experienced greater relief from stress through structured interventions, highlighting the critical need for sustained counseling to support families during lengthy hospital stays. These findings collectively underscore the necessity of continuous and tailored psychological support for parents throughout the PICU journey, particularly for those facing extended hospitalizations.

In our study, successive counseling sessions led to progressively lower stress levels, with the most significant improvements observed in the discharged group. Similar findings were reported by Yagiela et al. [17] (2019), who highlighted that continuous psychological support and structured interventions significantly reduced parental stress levels over time, particularly for those whose children had better outcomes. This suggests that the consistency and frequency of counseling sessions play a critical role in alleviating parental stress. Baker et al. [13] (2017) also found that parents who received ongoing counseling showed marked improvements in stress reduction, reinforcing the importance of sustained support throughout the hospitalization period.

Counseling significantly reduced stress levels in parents of discharged patients. This trend is consistent with the findings of Stremmer et al. [10] (2017), who noted that parents of children discharged from the PICU experienced substantial stress relief post-counseling. The effectiveness of counseling in these cases is attributed to the relief and reassurance provided by the anticipated discharge of their child. Additionally, Ramirez et al. [16] (2018) observed that the positive outcome of discharge, coupled with continuous counseling, significantly mitigated stress levels in parents. This emphasizes the importance of targeted psychological support to enhance parental coping mechanisms and improve overall family well-being during and after the child's PICU stay.

Our study faced several limitations, including the exclusion of parents whose children were discharged or passed away within 48 hours, potentially biasing results by omitting the most acute cases of parental stress. The observational design, while insightful, restricts the ability to establish causality between counseling and stress reduction. The reliance on self-reported stress measures introduced subjective bias, as perceptions may vary due to external influences.

Conducting the study in a single institution limits its applicability to other settings with different demographics and healthcare practices.

### Conclusion

Our study underscores the significant impact of structured counselling in the PICU, demonstrating its effectiveness in reducing parental stress across various demographics and stressor categories. Counselling proved especially beneficial for parents from lower socioeconomic backgrounds and those with higher educational levels, highlighting the importance of tailored psychological support.

These findings emphasize the need for healthcare providers to integrate ongoing, comprehensive counselling programs within the PICU to address parents' unique challenges during their child's critical illness. Such interventions not only alleviate immediate stress but also foster long-term resilience, leading to improved family well-being and outcomes.

### Bibliography

- Mitchell S, Spry JL, Hill E, Coad J, Dale J, Plunkett A. Parental experiences of end of life care decision-making for children with life-limiting conditions in the paediatric intensive care unit: a qualitative interview study. *BMJ Open*. 2019; 9(5):e028548.
- Bennett RA, LeBaron VT. Parental perspectives on roles in end-of-life decision making in the pediatric intensive care unit: an integrative review. *J Pediatr Nurs*. 2019; 46:18–25.
- Henderson CM, Williams EP, Shapiro MC, Hahn E, Wright-Sexton L, and Hutton N, et al. “Stuck in the ICU”: caring for children with chronic critical illness. *Pediatr Crit Care Med*. 2017; 18(11):e561–8.
- Seideman RY, Watson MA, Corff KE, Odle P, Haase J, Bowerman JL. Parent stress and coping in NICU and PICU. *J Pediatr Nurs*. 1997; 12(3):169–77.
- Board R, Ryan-Wenger N. Stressors and stress symptoms of mothers with children in the PICU. *J Pediatr Nurs*. 2003; 18(3):195–202.
- McBride-Henry K, Miller C, Trenholm A, and Officer TN. Occupying ‘in-hospitable’ spaces: Parental/primary-caregiver perceptions of the impact of repeated hospitalisation in children under two years of age. *Plos One*. 2020; 15(1):e0228354.
- Adu-Assiamah S. Exploring Psychosocial Experiences of Parents with Children Undergoing Cancer Treatment at Korle-Bu Teaching Hospital. *Open Access Libr J*. 2022; 9(2):1–17.
- Jones CW. Parental stress and coping during the hospitalization of a child. 2015;
- Aamir M, Mittal K, Kaushik JS, Kashyap H, Kaur G. Predictors of stress among parents in pediatric intensive care unit: a prospective observational study. *Indian J Pediatr*. 2014; 81:1167–70.
- Stremmer R, Haddad S, Pullenayegum E, Parshuram C. Psychological outcomes in parents of critically ill hospitalized children. *J Pediatr Nurs*. 2017; 34:36–43.
- Shudy M, De Almeida ML, Ly S, Landon C, Groft S, Jenkins TL, et al. Impact of pediatric critical illness and injury on families: a systematic literature review. *Pediatrics*. 2006; 118(Supplement\_3):S203–18.
- Diaz-Caneja A, Gledhill J, Weaver T, Nadel S, Garralda E. A child's admission to hospital: a qualitative study examining the experiences of parents. *Intensive Care Med*. 2005; 31:1248–54.
- Baker SC, Gledhill JA. Systematic review of interventions to reduce psychiatric morbidity in parents and children after PICU admissions. *Pediatr Crit Care Med*. 2017; 18(4):343–8.
- Ramirez GA, Manfredi AA, Maugeri N. Misunderstandings between platelets and neutrophils build in chronic inflammation. *Front Immunol*. 2019; 10:489488.
- Upadhyay V, Parashar Y. A study of parental stressors, financial issues as stress factor, and the coping strategies in the PICU. *Indian J Pediatr*. 2022; 89(6):563–9.
- Ramirez M, Gonzales L, Martinez P. The impact of parental education on stress management in the PICU. *J Pediatr Care*. 2018; 8:101–10.
- Yagiela LM, Carlton EF, Meert KL, Odetola FO, Cousino MK. Parent medical traumatic stress and associated family outcomes after pediatric critical illness: A systematic review. *Pediatr Crit Care Med*. 2019; 20(8):759–68.