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# Perceived social support, psychological capital and sleep quality among the mothers of leukemic Children

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**Abstract:**

Mothers of children with leukemia face significant emotional and physical challenges, impacting their psychological well-being and sleep quality. A quantitative descriptive study of 60 mothers revealed that social support positively influences psychological capital but may be associated with poor sleep quality. Age, family structure and education also play important roles in these variables. Understanding these relationships provides valuable insights for developing interventions to enhance maternal Psychological capital (Hope, Self Efficacy, Resilience and Optimism (HERO)) and caregiving capacity. Thus, data shows the complex interplay between social support, psychological strength and sleep in this vulnerable population.

**Keywords:** Psychological capital, social support, sleep quality, mothers of leukemia children

**Background:**

Leukemia is the most common juvenile malignancy, poses a significant emotional and psychological burden on families, particularly mothers, who are often the primary caretakers. The responsibilities of caregiving, frequent hospital visits and the uncertainty of treatment outcomes deeply affect their well-being [1]. Mothers of children with leukemia commonly experience poor mental health, including higher anxiety, depressive symptoms and poor sleep quality, regardless of their physical activity levels. Studies have found that 50% of parents of children with acute lymphoblastic leukemia (ALL) report clinically relevant sleep problems, a stark contrast to 16% in the general population [2]. Half of these parents face severe issues, with predictors including clinical distress, insufficient social support, fragmented child sleep and parental chronic illness [3]. Social support plays a critical role in alleviating the emotional burden on these mothers. It provides them with the energy and motivation necessary to manage the challenges of caregiving [4]. The immediate shock of a child's cancer diagnosis triggers a range of emotions in mothers and they seek help at various stages of their child's treatment to cope with the stresses of cancer therapy [5]. Strengthening the social support system for mothers can significantly improve their well-being, reduce their caregiving burden and facilitate post-traumatic growth [6]. The emotional stress that mothers endure also has a direct impact on their children's quality of life. Nearly 94% of parents experience varying degrees of anxiety upon their child's leukemia diagnosis, affecting both their mental health and the child's well-being [7]. As a key component of this emotional burden, Psychological Capital (PsyCap) is essential for fostering resilience, flexibility and improved health outcomes. PsyCap, a positive psychological resource that includes hope, self-efficacy, resilience and optimism, has been shown to enhance physical and mental health across various life domains. Studies confirm

that PsyCap can produce favorable outcomes in personal life, health, relationships and overall well-being [8]. Mothers of children with leukemia often face significant challenges related to their psychological well-being due to the demands of the disease and caregiving. The quality of life for these parents is strongly linked to their social support, which affects their ability to manage stress and adapt to the situation [9]. Furthermore, the emotional and psychological impact on mothers requires timely recognition and intervention, especially in non-clinical factors such as social support, psychological capital and sleep quality, which are often overlooked in clinical settings. Despite the growing recognition of these factors, their evaluation remains limited in Indian tertiary care settings [10]. Therefore, it is of interest to report on how the interplay between social support, psychological capital and sleep quality influences the emotional and physical challenges faced by mothers of children with leukemia.

**Methodology:**

This study employed a quantitative research approach with a descriptive research design to investigate perceived social support, psychological capital and sleep quality among mothers of children diagnosed with leukemia. The research was conducted at the Pediatric Hematology Department of the Institute of Child Health and Hospital for Children, Chennai. The target population included all mothers of children with leukemia attending the pediatric hematology department, while the accessible population comprised those who met the inclusion criteria and were available during data collection. A total sample size of 60 mothers was determined using a convenience sampling technique. Inclusion criteria encompassed mothers of children undergoing leukemia treatment for at least one year, who were willing to participate and provide informed consent. Data collection instruments included a socio-demographic

questionnaire, the Multidimensional Scale of Perceived Social Support (MSPSS), the Psychological Capital Questionnaire (PCQ) Self Rater Version and the Pittsburgh Sleep Quality Index (PSQI). The MSPSS assessed perceived support from family, friends and significant others, with higher scores indicating greater support. The PCQ measured four components of psychological capital—efficacies, hope resilience and optimism—with reverse scoring for specific items. The PSQI evaluated sleep quality over a one-month period, where higher scores indicated poorer sleep quality. Ethical approval was obtained from the Institutional Ethics Committee of Madras Medical College, Chennai and permission to conduct the study was granted by the director of the Institute of Child Health. A pilot study involving 10% of the sample was conducted to test the feasibility and clarity of the instruments, leading to minor modifications based on feedback. Data collection involved administering the MSPSS, PCQ and PSQI to participants, requiring approximately 20 to 30 minutes. The collected data were coded and analyzed using SPSS software. Descriptive statistics summarized demographic and study variables, while inferential statistics, including correlation and chi-square tests, assessed relationships among perceived social support, psychological capital and sleep quality. All statistical analyses were conducted at a significance level of 0.05 and findings were presented in tables and graphs for clarity.

Results:

This study examined social support, sleep quality and psychological capital among mothers of children with leukemia. Participants aged 31–35 years constituted the largest age group (33.33%). Rural mothers and those living in joint families demonstrated significantly higher social support scores compared with other groups ( $\chi^2$ ,  $p < 0.05$ ) (Table 3). Mothers younger than 30 years and those with children aged 2–5 years experienced poorer sleep quality ( $\chi^2$ ,  $p < 0.05$ ) (Table 3). Higher psychological capital scores were observed among mothers aged 36–40 years and those with higher educational attainment, with

education showing a statistically significant association ( $\chi^2 = 11.88$ ,  $p = 0.01$ ) (Table 3). The overall mean social support score was  $44.05 \pm 13.32$  (52.44% of the maximum score). Among individual items, the highest mean score was recorded for the statement "There is a special person who is around when I am in need" ( $4.32 \pm 1.80$ ), while the lowest mean score was observed for "I can talk about my problems with my friends" ( $3.09 \pm 1.40$ ) (Table 1). Regarding the distribution of social support levels, 30.00% of mothers had low social support, 63.33% had moderate social support and 6.67% had high social support (Figure 1). The overall mean sleep quality score was  $9.06 \pm 2.22$  (43.14% of the maximum score). The highest domain score was observed for confidence in representing the work area in meetings with management ( $2.03 \pm 0.52$ ), whereas the lowest score was for confidence in presenting information to a group of colleagues ( $0.96 \pm 0.86$ ) (Table 2). Based on sleep quality classification, 60.00% of mothers had poor sleep quality, 23.33% had moderate sleep quality and 16.67% had good sleep quality (Figure 2). The distribution of psychological capital showed that most mothers had moderate psychological capital, while a smaller proportion showed high psychological capital (Figure 3). Significant associations were observed between psychological capital and maternal age as well as educational status, whereas no statistically significant associations were found with age of the child, number of children, religion, family income, place of residence, child care provider, occupation, or family type (Table 3). Correlation analysis revealed a significant negative fair correlation between social support and sleep quality ( $r = -0.32$ ,  $p = 0.05$ ), indicating that greater social support was associated with fewer sleep disturbances. Social support also demonstrated a significant positive moderate correlation with psychological capital ( $r = 0.42$ ,  $p = 0.05$ ). Furthermore, sleep quality showed a significant negative fair correlation with psychological capital ( $r = -0.35$ ,  $p = 0.05$ ), suggesting that poorer sleep quality was associated with lower psychological capital (Table 4).

Table 1: Each statement wise social support score

| statements                                                           | Maximum score | Mean  | SD    | % of mean score |
|----------------------------------------------------------------------|---------------|-------|-------|-----------------|
| 1. There is a special person who is around when I am in need.        | 7             | 4.32  | 1.8   | 61.71%          |
| 2. There is a special person with whom I can share joys and sorrows. | 7             | 4.15  | 1.6   | 59.29%          |
| 3. My family really tries to help me.                                | 7             | 3.9   | 1.3   | 55.71%          |
| 4. I get the emotional help & support. I need from my family         | 7             | 3.73  | 1.3   | 53.29%          |
| 5. I have a special person who is a real source of comfort to me.    | 7             | 3.88  | 1.4   | 55.43%          |
| 6. My friends really try to help me.                                 | 7             | 3.47  | 1.5   | 49.57%          |
| 7. I can count on my friends when things go wrong.                   | 7             | 3.48  | 1.6   | 49.71%          |
| 8. I can talk about my problems with my family.                      | 7             | 3.57  | 1.4   | 51.00%          |
| 9. I have friends with whom I can share my joys and sorrows.         | 7             | 3.42  | 1.2   | 48.86%          |
| 10. There is a special person in my life who cares about my feelings | 7             | 3.38  | 1.4   | 48.29%          |
| 11. My family is willing to help me make decisions.                  | 7             | 3.67  | 1.4   | 52.43%          |
| 12. I can talk about my problems with My friends.                    | 7             | 3.09  | 1.4   | 44.14%          |
| Total                                                                | 84            | 44.05 | 13.32 | 52.44%          |

Table 2: Each statement wise sleep quality score

| Domain                                                                                                          | Maximum score | Mean | SD   | % of mean score |
|-----------------------------------------------------------------------------------------------------------------|---------------|------|------|-----------------|
| 1. I feel confident analyzing a long-term problem to find a solution.                                           | 3             | 1.26 | 0.54 | 42.00%          |
| 2. I feel confident in representing my work area in meetings with management.                                   | 3             | 2.03 | 0.52 | 67.66%          |
| 3. I feel confident contributing to discussions about the organization’s strategy.                              | 3             | 1.43 | 0.58 | 47.67%          |
| 4. I feel confident helping to set targets/goals in my work area.                                               | 3             | 1.38 | 0.61 | 46.00%          |
| 5. I feel confident contacting people outside the organization [e.g. Suppliers, customers] to discuss problems. | 3             | 1.02 | 0.62 | 34.00%          |
| 6. I feel confident presenting information to a group of colleagues                                             | 3             | 0.96 | 0.86 | 32.00%          |
| 7. If I should find myself in a jam at work, I could think of many ways to get out of it.                       | 3             | 0.98 | 0.67 | 32.67%          |
| Total                                                                                                           | 21            | 9.06 | 2.22 | 43.14%          |

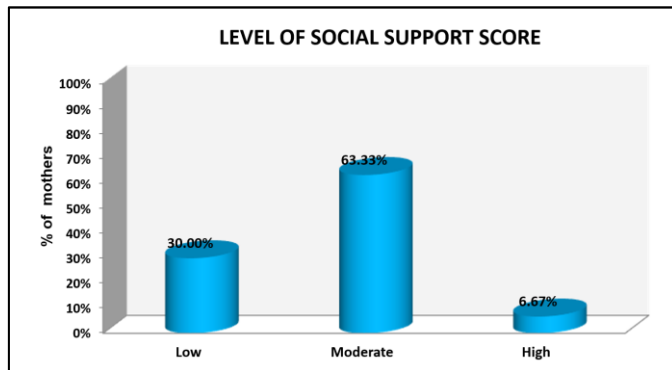
Table 3: Association between level of PCQ score and demographic variables

| Demographic variables    |                              | Level of PCQ score |         |      |        | n  | Chi square test                        |
|--------------------------|------------------------------|--------------------|---------|------|--------|----|----------------------------------------|
|                          |                              | Moderate           |         | High |        |    |                                        |
|                          |                              | n                  | %       | n    | %      |    |                                        |
| Age of mother            | 21-25 years                  | 12                 | 100.00% | 0    | 0.00%  | 12 | $\chi^2=9.17$ $\pi=0.05^*[\Sigma]$     |
|                          | 26-30 years                  | 11                 | 84.62%  | 2    | 15.38% | 13 |                                        |
|                          | 31-35 years                  | 16                 | 80.00%  | 4    | 20.00% | 20 |                                        |
|                          | 36-40 years                  | 8                  | 53.33%  | 7    | 46.67% | 15 |                                        |
| Age of child             | 2-5 years                    | 17                 | 89.47%  | 2    | 10.53% | 19 | $\chi^2=5.57$ $\pi=0.10[N\Sigma]$      |
|                          | 6 -10 years                  | 17                 | 65.38%  | 9    | 34.62% | 26 |                                        |
|                          | 10-12 years                  | 13                 | 86.67%  | 2    | 13.33% | 15 |                                        |
|                          |                              |                    |         |      |        |    |                                        |
| Total number of children | One                          | 11                 | 64.71%  | 6    | 35.29% | 17 | $\chi^2=3.15$ $\pi=0.37[N\Sigma]$      |
|                          | Two                          | 25                 | 83.33%  | 5    | 16.67% | 30 |                                        |
|                          | Three                        | 8                  | 80.00%  | 2    | 20.00% | 10 |                                        |
|                          | > Three                      | 3                  | 100.00% | 0    | 0.00%  | 3  |                                        |
| Education of the mother  | Primary Education            | 9                  | 100.00% | 0    | 0.00%  | 9  | $\chi^2=11.88$ $\pi=0.01^{**}[\Sigma]$ |
|                          | Secondary education          | 6                  | 100.00% | 0    | 0.00%  | 6  |                                        |
|                          | Middle school Education      | 15                 | 83.33%  | 3    | 16.67% | 18 |                                        |
|                          | High school Education        | 7                  | 70.00%  | 3    | 30.00% | 10 |                                        |
|                          | Graduate and above Education | 10                 | 58.82%  | 7    | 41.18% | 17 |                                        |
|                          | In formal Education          | 0                  | 0.00%   | 0    | 0.00%  | 0  |                                        |
| Religion                 | Hindu                        | 41                 | 78.85%  | 11   | 21.15% | 52 | $\chi^2=4.97$ $\pi=0.08[N\Sigma]$      |
|                          | Christian                    | 5                  | 100.00% | 0    | 0.00%  | 5  |                                        |
|                          | Muslim                       | 1                  | 33.33%  | 2    | 66.67% | 3  |                                        |
| Family income            | < Rs.20000                   | 36                 | 78.26%  | 10   | 21.74% | 46 | $\chi^2=0.87$ $\pi=0.64[N\Sigma]$      |
|                          | Rs.20001-40000               | 7                  | 87.50%  | 1    | 12.50% | 8  |                                        |
|                          | Rs.40001-60000               | 4                  | 66.67%  | 2    | 33.33% | 6  |                                        |
|                          | Rs.60000                     | 0                  | 0.00%   | 0    | 0.00%  | 0  |                                        |
| Place of residence       | Urban                        | 13                 | 76.47%  | 4    | 23.53% | 17 | $\chi^2=0.05$ $\pi=0.98[N\Sigma]$      |
|                          | SemiUrban                    | 4                  | 80.00%  | 1    | 20.00% | 5  |                                        |
|                          | Rural                        | 30                 | 78.95%  | 8    | 21.05% | 38 |                                        |
| child care               | Parents                      | 36                 | 76.60%  | 11   | 23.40% | 47 | $\chi^2=0.49$ $\pi=0.78[N\Sigma]$      |
|                          | GrandParents                 | 7                  | 87.50%  | 1    | 12.50% | 8  |                                        |
|                          | Others                       | 4                  | 80.00%  | 1    | 20.00% | 5  |                                        |
| Occupation               | Unemployed                   | 9                  | 90.00%  | 1    | 10.00% | 10 | $\chi^2=2.06$ $\pi=0.36[N\Sigma]$      |
|                          | Daily wages                  | 28                 | 80.00%  | 7    | 20.00% | 35 |                                        |
|                          | Government employee          | 0                  | 0.00%   | 0    | 0.00%  | 0  |                                        |
|                          | Private employee             | 10                 | 66.67%  | 5    | 33.33% | 15 |                                        |
| Type of family           | Nuclear-family               | 32                 | 80.00%  | 8    | 20.00% | 40 | $\chi^2=0.20$ $\pi=0.66[N\Sigma]$      |
|                          | Joint family                 | 15                 | 75.00%  | 5    | 25.00% | 20 |                                        |
|                          | Extended family              | 0                  | 0.00%   | 0    | 0.00%  | 0  |                                        |

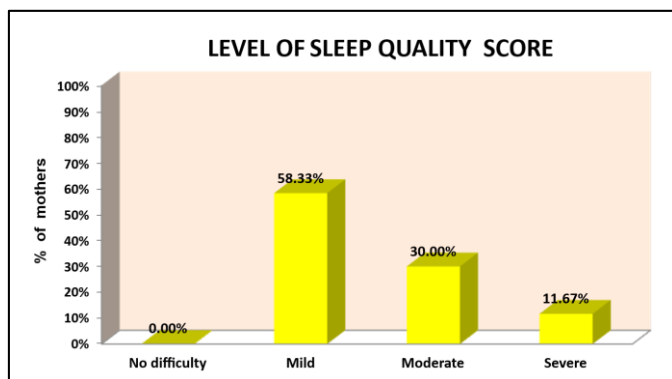
Table 4: Correlation between mean social support, sleep quality and psychological capital

| Correlation between                                       | Mean score<br>Mean±SD     | Karl Pearson Correlation<br>coefficients | Interpretation                                                                                                    |
|-----------------------------------------------------------|---------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Social support score<br>vs<br>Sleep Quality score         | 44.05±13.32<br>9.06±2.22  | r=-0.32<br>P=0.05*                       | There is a significant negative fair correlation between social support score and sleep quality score             |
| Social support score<br>Vs<br>psychological capital score | 44.05±13.32<br>99.03±9.94 | r= 0.42 P=0.05*                          | There is a significant positive moderate correlation between social support score and psychological capital score |
| Sleep Quality score<br>vs<br>psychological capital score  | 9.06±2.22<br>99.03±9.94   | r=- 0.35 P=0.05*                         | There is a significant negative fair correlation between Sleep Quality score and psychological capital score.     |

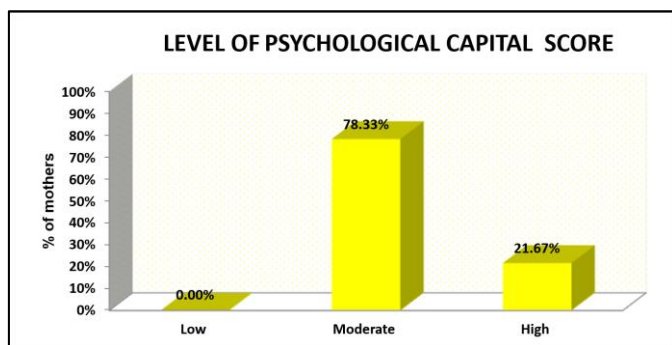
Karl Pearson correlation coefficient is denoted by “r”  
“r” always lies between -1 to +1  
0.0 – 0.2 poor correlation  
0.2 - 0.4 fair correlation



**Figure 1:** Level of Social support among the mothers of leukemic children



**Figure 2:** Level of sleep quality among the mother's leukemia children



**Figure 3:** Level of psychological capital among the mothers of leukemia children

#### Discussion:

A similar study by Özsoy (2026) [11] indicated that the majority of respondents (76.7%) reported a high level of social support, while 13.3% experienced a medium level of support and only 10% indicated a low level of support. The study found that psychological support can significantly reduce parents' psychological distress, provide health education and offer systematic knowledge on disease care. This support helps establish a positive attitude toward treatment, thereby creating favorable conditions that stabilize the child's emotions during

disease treatment and recovery. Additionally, parental distress demonstrated moderate to large negative correlations with all quality of life (QoL) domains ( $r = -0.34$  to  $-0.56$ ,  $p < 0.05$ ). Trauma-related stress symptoms showed small to moderate negative associations with physical and environmental QoL ( $r = -0.37$  and  $-0.29$ , respectively,  $p < 0.05$ ). Child externalizing and internalizing behaviors also showed moderate to large negative associations with parents' physical, psychological and environmental QoL ( $r = -0.50$  to  $-0.33$ ,  $p < 0.01$ ). Parents of children treated for acute lymphoblastic leukemia (ALL) experience persistent QoL difficulties during the early survivorship period after treatment completion. Elevated parental distress and child internalizing behaviors at the end of treatment are risk factors for poorer outcomes, underscoring the bidirectional nature of the parent-child relationship [12]. Caregiver burden is another challenge faced by primary caregivers, most often mothers. In one study, the mean pre-intervention caregiver burden score in the intervention and control groups was  $19.97 \pm 5.25$  and  $18.97 \pm 10.03$ , respectively. Moreover, parents reported sleep problems in 38.0% of children with leukemia compared to 15.2% in healthy children ( $P < .001$ ), although patients themselves reported fewer sleep problems: 12.1% compared to 15.8% in healthy children ( $P = .33$ ). Systematic monitoring of both child and parental sleep, coupled with effective interventions, may enhance the quality of life and survival in pediatric acute lymphoblastic leukemia [13]. This study provides insights into the psychological and social well-being of mothers caring for children with leukemia. Findings reveal that 63.33% of mothers experience moderate levels of social support, while 30% report low support and only 6.67% benefit from high support, indicating a need for improved community and familial networks. Sleep quality is significantly impacted, with 60% of mothers reporting poor sleep, reflecting the emotional and physical toll of caregiving. In contrast, psychological capital presents a more positive outlook: none of the mothers scored low, with over 78.33% showing moderate levels of hope, resilience, optimism and confidence and 21.67% achieving high levels. Overall, while psychological strength remains relatively intact, the data highlights the need for enhanced social support and interventions to improve sleep health among these mothers [14, 15].

#### Conclusion:

We show the importance of social support in enhancing psychological capital among mothers of children with leukemia, though it may negatively affect sleep quality. It emphasizes the need for targeted interventions to improve both emotional support and sleep health. Therefore, it is crucial to develop comprehensive strategies that address these interconnected challenges.

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#### Ethical approval:

Approval was obtained from the Institutional Ethics Committee and written informed consent was obtained from all participants.

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