

Nurses at the Helm: Transforming Parental Perception and Symptom Management in Childhood Leukemia

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ABSTRACT

Leukemia is a cancer of WBC, which is the second leading cause of mortality among children. Childhood Leukemia accounts for 33% of all cancers in 2024. Early detection and identification of symptoms may reduce the death rate among children with leukemia. Nurse-led interventions have the potential to improve symptom management strategies and reduce parental uncertainty regarding the disease. The main objective of the study is to evaluate the nurse-led intervention on symptom management and parental perception among mothers of children with leukemia. A Quantitative Pre-experimental approach, one-group pretest and post-test design was employed in the Institute of Child Health and Hospital for Children, Egmore, Chennai, based on the Health Belief Model. A total of 60 mothers of leukemic children were selected through a Nonrandomized convenience sampling technique. The nurse-led interventions were given to participants as Structured Educational sessions and informational pamphlets. Quantitative data were obtained through a validated tool before and after nurse-led interventions. Statistical analysis was conducted. After the nurse-led intervention, most mothers (80.0%) reported minimal symptom burden, while 20.0% reported mild burden. Parental uncertainty was reduced, with 78.33% experiencing moderate and 21.67% low uncertainty. A significant positive correlation was observed between symptom burden and parental perception ($r = 0.72$, $p = 0.001$).

Background

Mothers are essential in providing routine care, emotional support, and symptom monitoring for children with leukemia. However, mothers may experience more stress, anxiety, and uncertainty as a result of treating complex symptoms. How they manage care and engage with the healthcare system is strongly impacted by their view of their child's sickness, side effects from therapy, and symptom burden. Parental perceptions of the severity of disease and symptom distress have been found to have an impact on children's psychosocial outcomes, treatment compliance, and health-seeking behavior.

Methodology

A Pre-experimental research design was employed in this study. The study was conducted at the department of Haematology, Institute of Child Health and Hospital for Children (ICH&HC), Chennai. The study population comprises 60 mothers of children with leukemia selected through a convenience sampling technique, and those who met the inclusion criteria. Quantitative data Were Collected Using a Demographic variables questionnaire,

Memorial Symptom Assessment Scale (MSAS), Parental Uncertainty About Child Health scale (PUCHS), and the ethical principles were followed accordingly. The data was tabulated and analyzed using both descriptive and inferential statistics.

RESULTS:

Demographic Characteristics:

The majority of mothers (41.7%) were above 35 years of age. Most mothers (41.7%) were graduates, followed by 38.3% who completed high school. A large proportion (73.3%) belonged to the Hindu religion. About 38.3% of mothers had two children, making it the most common family size. More than half (55%) of the mothers were homemakers. A majority (46.7%) had a monthly family income between ₹10,001 and ₹20,000. Urban residents constituted 41.7%, forming the largest group by location. Half of the participants (50%) belonged to nuclear families. Most of the marriages (73.3%) were non-consanguineous. The majority (71.7%) reported no family history of cancer.

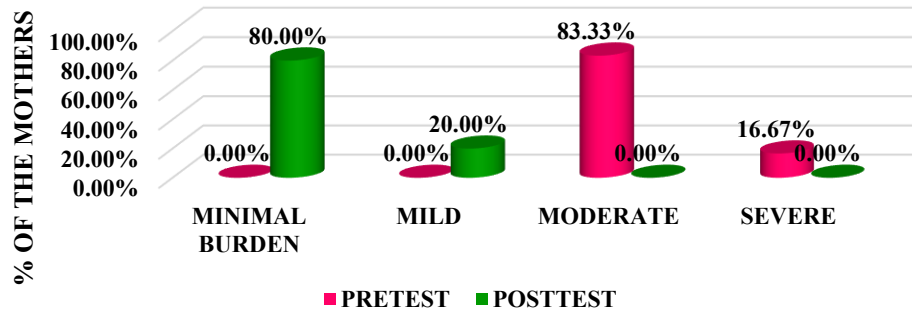
COMPARISON OF PRE-TEST AND POST-TEST LEVELS OF SYMPTOM MANAGEMENT (MEMORIAL SYMPTOM ASSESSMENT SCALE) SCORE

LEVEL OF SYMPTOM MANAGEMENT	ASSESSMENTS				McNemar's Brooker test (Marginal Homogeneity)
	PRETEST		POSTTEST		
	N	%	N	%	
MINIMAL BURDEN	0	0.00%	48	80.00%	x ² = 26.67, p = 0.001 S***
MILD	0	0.00%	12	20.00%	
MODERATE	50	83.33%	0	0.00%	
SEVERE	10	16.67%	0	0.00%	
TOTAL	60	100.0%	60	100.00%	

$p = 0.001$ S*** is <0.05 . Very Highly Significant.

The comparison between pretest and post-test levels showed a highly significant improvement in symptom management after the intervention.

COMPARISON OF PRE TEST AND POST TEST LEVEL OF SYMPTOM MANAGEMENT SCORE



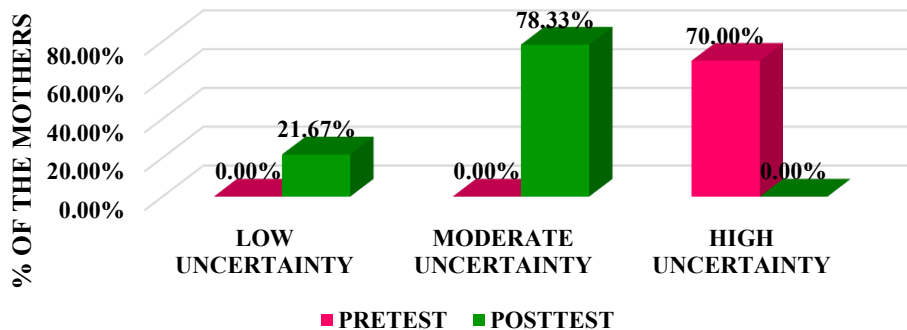
COMPARISON OF PRE-TEST AND POST-TEST LEVEL OF PARENTAL PERCEPTION (PUCHS-PARENTAL UNCERTAINTY CHILD HEALTH SCALE) SCORE.

LEVEL OF PARENTAL PERCEPTION	ASSESSMENTS				MCNEMAR'S BROKER (Marginal Homogeneity) test
	PRETEST		POSTTEST		
	N	%	N	%	
LOW UNCERTAINTY	0	0.00%	13	21.67%	$\chi^2= 21.33, p=0.001^{***} (S)$
MODERATE UNCERTAINTY	0	0.00%	47	78.33%	
HIGH UNCERTAINTY	42	70.00%	0	0.00%	
VERY HIGH UNCERTAINTY	18	30.00%	0	0.00%	
TOTAL	60	100.0%	60	100.00%	

$p = 0.001$ S^{***} is <0.05 . Very Highly Significant.

After the intervention, 78.33% of parents shifted to moderate uncertainty and 21.67% to low uncertainty, with none remaining in high or very high uncertainty categories

POST TEST LEVEL OF PARENTAL PERCEPTION SCORE



CORRELATION OF PRE-TEST AND POST-TEST LEVELS OF SYMPTOM MANAGEMENT AND PARENTAL PERCEPTION SCORE

Variables	Mean \pm SD (Pre-test)	Mean \pm SD (Post-test)	Correlation Coefficient (r)	p-value	Interpretation
Symptom Management Score	113.42 \pm 2.70	61.90 \pm 3.53			
Parental Perception Score	38.20 \pm 2.60	18.92 \pm 4.01			
Symptom Management vs Parental Perception (Pre-test)			0.84	0.001***	Strong Positive Correlation
Symptom Management vs Parental Perception (Post-test)			0.72	0.001***	Moderate Positive Correlation

DISCUSSION

In the pre-test assessment of symptom management, the majority of mothers of children with leukaemia, 83.33%, reported a moderate burden. About 16.67% of mothers experienced a severe burden while the parental perception showed that 70.00% of

mothers experienced high uncertainty, and 30.00% of mothers faced very high uncertainty. After the intervention post-test results showed that 80.00% of mothers experienced a minimal burden of symptom management, while 20.00% reported a mild burden. There were no cases of moderate or severe burden

whereas The post-test results of parental perception showed that 78.33% of mothers reported moderate uncertainty, while 21.67% experienced low uncertainty. A moderate positive correlation ($r = 0.72$, $p = 0.001$) was observed after the intervention session. This indicates that improvements in symptom management were associated with better parental perception levels.

These findings align with previous research highlighting the effectiveness of nurse-led interventions in pediatric oncology. For instance, studies by Rongrong Li et al. (2023) and Fatma Mohammed et al. (2024) have demonstrated similar improvements in symptom management and parental knowledge following structured nursing interventions.

CONCLUSION

This study highlights the significant positive impact of nurse-led interventions on symptom management and parental perception among mothers of children with leukemia. The findings emphasize the vital role of structured nursing programs in improving care quality and family support in paediatric oncology. Enhanced parental knowledge and reduced uncertainty contribute to better outcomes for both children and their families.

The study also reveals important associations between demographic factors and intervention outcomes, suggesting the need for tailored, family-centered approaches. These results reinforce the importance of integrating nurse-led interventions into routine paediatric oncology care and call for future research

to further refine and expand such strategies to address both physical and psychosocial needs in childhood cancer care.

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