

## Factors Influencing Family Resilience and Quality of Life in Pediatric Cancer Patients and Their Caregivers: A Cluster Analysis

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**Abstract :** Background: Cancer is one of the most severe diseases in childhood; long-term treatment and its side effects significantly impact the patient's physical, psychological, and social functioning and quality of life while also placing substantial physical and psychological burdens on caregivers and families. Family resilience is an important factor in the successful adaptation of families of children with cancer. As a family-level variable, family resilience requires information from multiple family members. However, there is currently no research investigating family resilience from both the perspectives of pediatric cancer patients and their caregivers. Therefore, this study aims to investigate the family resilience and quality of life of pediatric cancer patients from a patient-caregiver dyadic perspective. Methods: A total of 149 dyads of patients diagnosed with pediatric cancer patients and their principal caregivers were recruited from oncology departments of 4 tertiary hospitals in Wuhan and Taiyuan, China. All participants completed questionnaires that identified their demographic and clinical characteristics as well as assessed their family resilience and quality of life for both the patients and their caregivers. K-means cluster analysis was used to identify different clusters of family resilience based on the reports from patients and caregivers. Multivariate logistic regression and linear regression are used to analyze the factors influencing family resilience and quality of life, as well as the relationship between the two. Results: Three clusters of family resilience were identified: a cluster of high family resilience (HR), a cluster of low family resilience (LR) and a cluster of discrepant family resilience (DR). Most (67.1%) families fell into the cluster with low resilience. Characteristics such as the types of caregivers and perceived social support of the patient were different among the three clusters. Compared to the LR group, families where the mother is the caregiver and where the patient has high social support are more likely to be assigned to the HR. The quality of life for caregivers was consistently highest in the HR cluster and lowest in the LR cluster. The patient's quality of life is not related to family resilience. In the linear regression analysis of the patient's quality of life, patients who are the first-born have higher quality of life, while those living with their parents have lower quality of life. The participants' characteristics were not associated with the quality of life for caregivers. Conclusions: In most families, family resilience was low. Families with maternal caregivers and patients receiving high levels of social support are more inclined to have higher levels of family resilience. Family resilience was linked to the quality of life of caregivers of pediatric cancer patients. The clinical implications of these findings suggest that healthcare and social support organizations should prioritize and support the participation of mothers in caregiving responsibilities. Furthermore, they should assist families in accessing social support to enhance family resilience. This study also emphasizes the importance of promoting family resilience for enhancing family health and happiness, as well as improving the quality of life for caregivers.

**Keywords :** pediatric cancer, cluster analysis, family resilience, quality of life

**Conference Title :** ICPCCH 2025 : International Conference on Pediatrics and Child Health

**Conference Location :** Singapore, Singapore

**Conference Dates :** March 29-30, 2025