



Resilience and quality of life among family pediatric cancer caregivers in selected hospitals in Ho Chi Minh City Vietnam

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ABSTRACT

Objective: This study examined the relationship between resilience, and quality of life (QoL) among family caregivers of children with cancer in selected hospitals in Ho Chi Minh City, Vietnam. **Method:** This descriptive-correlational study was conducted between September and October 2024, involving 304 family caregivers, mostly parents (fathers and mothers), who were the primary caregivers of children with cancer. **Results:** These caregivers were currently providing care for their children at two hospitals in Ho Chi Minh City, Vietnam. Caregivers reported a neutral level of Resilience (2.82 ± 0.85). QoL was at an undecided level (2.62 ± 0.82), with social health rated the highest (2.79 ± 0.76) and environment the lowest (2.51 ± 0.78). A strong positive correlation was found between resilience and QoL (Pearson's $r = 0.655$, $p < 0.001$). **Conclusion:** The findings suggest that enhancing resilience can improve caregivers' QoL. This study contributes to understanding the psychological and emotional challenges faced by caregivers, providing insights into potential interventions for improving caregiver support. The result of the study provides a valuable contribution to inspire the beneficiaries of this study like pediatric oncology nurses to plan, develop, and implement appropriate interventions to improve the QoL of family caregivers of children with cancer.

Keywords: Resilience, quality of life, pediatric cancer, family caregiver.

INTRODUCTION

Nowadays, cancer is one of the most important community health concerns of the 21st century ¹. Cancer influences all groups of age over the world, especially children and adolescents ². Currently, there are many innovations in the battle against cancer, such as more available information about cancer, early detection, and treatment options that help people with cancer live longer. For childhood cancer in high-income countries

where people with cancer can access comprehensive services, the rate of children with cancer can cure is more than 80%; in middle and low- income countries, it is less than 30% ³.

Caring for children with life-threatening diseases like cancer can be challenging and burdensome to family members as the primary caregivers. The extensive responsibilities of the family due to prolonged disease trajectory and treatments,

and the physical, psychological, and financial demands that they may experience, can affect their resilience in managing the situation and quality of life ⁴.

Resilience, on the other hand, refers to the ability to adapt positively to adversity, which demonstrates vitality and skill to beat the negative effects and vulnerability caused by the disease ⁵. Resilience is an important factor in parents of children with cancer because it can lessen the adaptation period by enhancing the strength of the family caregivers. According to Bajjani-Gebara et al (2019), resilience brings beneficial physical and mental health to parents of children with cancer ⁶. Thus, identifying and understanding the factors that contribute to resilience among family caregivers is crucial for the development of targeted interventions aimed at enhancing coping strategies and improving overall well-being.

Quality of life (QoL) is defined as an individual's perception of the status of their life and is affected by the individual's physical and psychological health, social relationships, and relationship with the surrounding environment ⁷.

According to Luo et al (2021), greater parental resilience is associated with better quality of life ⁷. Therefore, understanding the complex relationships between resilience and quality of life is vital for developing holistic interventions that address the multifaceted needs of family caregivers of pediatric patients with cancer. Conducting the study, the researcher aims to identify the level of resilience and QoL of family caregivers of children with cancer and to explore the relationship between resilience and quality of life among family caregivers of pediatric cancer patients in Vietnam.

MATERIALS AND METHODS

Study design: This study employed a descriptive-correlational research design.

Research locale and period: The study was conducted in two public hospitals located in Ho Chi Minh City, Viet Nam. Data collection took place between September and October 2024.

Population and sample: The sample for this study was calculated using the G-power analysis software, the 3.1.9.4. version, a freely accessible tool used for calculating statistical power. Power analysis is conducted to ascertain the minimum sample size necessary to reliably detect an effect of specified magnitude. With a significant level (alpha) set at 0.01 and a power of 0.99. This resulted in a minimum sample size of 304 participants.

Research participants: family caregivers (father or mother) who had children with cancer, primarily taking care of them, and being treated in either of the two selected hospitals in Ho Chi Minh City, Viet Nam.

Inclusion criteria: family caregivers (father or mother) who are primarily taking care of their pediatric patient with cancer in either Hospital A or Hospital B. Family caregivers, (father or mother) age between 18 to 59 years old. Family caregivers (father or mother) who can understand and speak in Vietnamese language

Exclusion criteria: family caregivers (father or mother) with physical and/or psychological or mental health conditions. Other members of the family, like siblings and grandparents. Agency caregivers. Independent caregivers like nannies.

Sampling technique: The simple random sampling technique was used in

this study. It was a probability sampling technique of selecting a sample in such a way that all individuals in the defined population had an equal and independent chance of being selected for the sample

Research instrument: The study employed a questionnaire to collect data on resilience and Quality of Life among Family Pediatric Cancer Caregivers

The Resilience Evaluation Scale is an open-access and adopted research instrument by van der Meer (2018) that will measure the resilience of family caregivers⁸. It comprises 9 items in two domains: self-confidence (3 items) and self-efficacy (6 items). This instrument is a five-point Likert scale ranging from (1) completely disagree, (2) disagree, (3) neutral, (4) agree, (5) and completely agree. Scores are interpreted as follows: 4.21–5.00 indicates completely agree; 3.41–4.20 is agree; 2.61–3.40 is neutral; 1.81–2.60 is disagree; 1.00–1.80 is completely disagree. Higher scores indicate greater levels of resilience. This scale demonstrates strong reliability, with a Cronbach Alpha of 0.96.

The Quality of Life Assessment Tool is an open-access tool from the World Health Organization with a Cronbach Alpha of 0.92⁹. Although there were 26 items that related to QoL, the study only assesses 24 items, as the first two questions assess health and QoL in general. The 24 items in the questionnaire assess mainly four domains, such as physical (7 items), psychological (6 items), social relationships (3 items), and environmental (8 items). This instrument is a five-point Likert scale ranging from (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, and (5) strongly agree. Scores are interpreted as follows: 4.21–5.00 indicates strongly agree; 3.41–4.20 is

agree; 2.61–3.40 is undecided; 1.81–2.60 is disagree; 1.00–1.80 is strongly disagree. Higher scores indicate greater levels of quality of life. This scale demonstrates strong reliability, with a Cronbach Alpha of 0.92.

The questionnaires were translated into Vietnamese using a forward-backward translation method to ensure linguistic and conceptual equivalence after getting permission. Two independent bilingual experts translated the instruments into Vietnamese, followed by back-translation into English. A pilot test was conducted with 30 participants to assess clarity and reliability, yielding high internal consistency across all instruments

Ethical considerations:

This study got approval from the Ethic Review Board of The Trinity University of Asia. All participants were provided with a detailed explanation of the study objectives, procedures, potential risks, and benefits in their native language (Vietnamese). Written informed consent was obtained before data collection. Participation was entirely voluntary, and participants were informed of their right to withdraw from the study at any point without any consequences to their treatment or care. Data were anonymized to protect participant identities. All collected information was securely stored, accessible only to authorized research personnel, and used solely for research purposes. The study was designed to ensure no physical or psychological harm to participants. Sensitive questions were handled with care, and emotional support was available if needed. The study findings will be reported transparently and made available to participants and stakeholders upon request.

RESULTS**Table 1. Characteristics of Family Pediatric Cancer Caregiver Respondents at Selected Hospitals in Ho Chi Minh City, Vietnam (n = 304)**

	Mean	SD
Age	36.20	7.34
Levels	Frequency (n)	Percentage (%)
Relationship to the Child		
Father	86	28.3
Mother	218	71.7
Marital Status		
Single	12	3.9
Married	271	89.1
Divorced	14	4.6
Widow	7	2.3
Highest education attainment		
≤ Secondary School	96	31.6
High school	127	41.8
College/ University/ Postgraduate	81	26.6
Employment status		
Employed	94	30.9
Unemployed	128	42.1
Housewife	82	27.0
Total	304	100.0

Mean age of respondents in the study is 36.20 ± 7.34 . Most respondents were mothers, comprising 71.7%. A significant majority were married, with 89.1%, 4.6% were divorced . 31.6% of caregivers have completed secondary school or lower. In terms of employment status, most respondents were unemployed, accounting for 42.1%. employed were 30.9 %

Table 2. Resilience among family pediatric cancer caregiver respondents

Statements	Mean	SD	Descriptive Interpretation
Self-confidence	2.73	0.93	Neutral
Self-efficacy	2.87	0.77	Neutral
Overall Mean	2.82	0.85	Neutral

The overall mean resilience score for family caregivers was 2.82 ± 0.85 , indicating a neutral level. Self-confidence scored 2.73 ± 0.93 , and self-efficacy scored 2.87 ± 0.77 , both at a neutral level.

Table 3. Quality of life of family caregivers of pediatric patients with cancer

Statements	Mean	SD	Descriptive Interpretation
Physical Health	2.69	0.88	Undecided
Psychological Health	2.58	0.87	Disagree
Social Relationship	2.79	0.76	Undecided
Environment	2.51	0.78	Disagree
Overall Mean	2.62	0.82	Undecided

The quality of life of family caregivers scored 2.62 ± 0.82 , indicating an undecided level. Social relationship received the highest score of 2.79 ± 0.76 , followed by physical health at 2.69 ± 0.88 , both at an undecided level. Psychological health scored 2.58, indicating disagreement, while the environment had the lowest score of 2.51 ± 0.78 , also at a disagreement level.

Table 4. Correlation between quality of life and resilience of family caregivers of pediatric patients with cancer

		Quality of Life				
		Physical Health	Psychological Health	Social Health	Environmental factors	QoL
Self-confidence	Pearson's r	0.443	0.473	0.092	0.441	0.504
	p-value	<0.001	<0.001	0.109	<0.001	<0.001
Self-efficacy	Pearson's r	0.376	0.455	0.313	0.401	0.494
	p-value	<0.001	<0.001	<0.001	<0.001	<0.001
Resilience	Pearson's r	0.539	0.609	0.26	0.553	0.655
	p-value	<0.001	<0.001	<0.001	<0.001	<0.001

In terms of self-confidence, there was a strong positive correlation with Physical QoL ($r = 0.443$), Psychological QoL ($r = 0.473$), and environmental factors ($r = 0.441$). Overall, there was also a strong positive correlation between self-confidence and QoL ($r = 0.504$), all with $p < 0.001$. For self-efficacy, there was a moderate positive correlation with Physical Health ($r = 0.376$), a strong positive correlation with Psychological Health ($r = 0.455$), a moderate positive correlation with Social Relationships ($r = 0.313$), a strong positive correlation with Environmental Factors ($r = 0.401$), and a strong positive correlation with QoL ($r = 0.494$), all with $p < 0.001$. Regarding resilience, there was a strong positive relationship with Physical Health ($r = 0.539$), a strong positive relationship with Psychological Health ($r = 0.609$), a weak positive relationship with Social Relationships ($r = 0.26$), a strong positive relationship with Environmental Factors ($r = 0.553$), and a strong positive relationship with QoL overall ($r = 0.655$), all with $p < 0.001$.

DISCUSSION

Overall, family caregiver respondents rated their resilience as a neutral degree (2.82 ± 0.85). This score suggested that while caregivers possessed a baseline level of resilience, it was not sufficient to effectively manage the challenges they faced, particularly in high-stress environments like pediatric oncology.

The analysis of the two dimensions of resilience-self-confidence and self-efficacy-revealed that family caregiver respondents reported scores of 2.73 ± 0.93 and 2.87 ± 0.77 , respectively. These scores reflected a similar trend of moderate self-perception, indicating that while caregivers felt somewhat capable and confident, there was significant room for growth.

Similarly to the current study, the results of the study by Habibpour et al. (2019) ¹⁰, showed the resilience of parents of children with cancer in this study was at a moderate level, and the mean resilience score of fathers was higher than that of mothers. This was reasonable because, naturally, men were stronger than women, and women were often more sensitive and experienced more sorrow when caring for children with cancer.

Consistent with many studies, Baran et al. (2019) found that the mean resilience score for mothers of children with ALL was lower than that for mothers of healthy children, with scores of 17.90 ± 7.09 compared to 19.79 ± 6.15 ¹¹. It is because mothers are usually the primary caregivers of children, especially when the child is sick. The time spent in the hospital receiving treatment, along with anxiety, hopelessness, and the worry of possibly losing the child, contributed to lower resilience in caregivers compared to others.

Furthermore, Silva et al. (2021) found that 25.8 % family caregivers had a low and high level of resilience, and 48.4% of family caregivers had moderate level. The authors figured out that caregivers with high level of stress had low level of resilience, it accounted for 44%. Additionally, the study revealed a correlation between quality of life and resilience. There was a weak to moderate positive correlation between resilience score and general quality of life with $r = 0.37$. In each domain of quality of life, with physical domain, $r = 0.330$, Psychological with $r = 0.392$, Social relationship with $r = 0.351$ and Environment with $r = 0.460$ ¹². This discrepancy may be due to differences in sample size, population characteristics, or measurement methods. Further investigation is needed to explore these factors and understand why the correlation appears stronger in this study.

In conclusion, this study emphasized the crucial role of resilience among pediatric cancer caregivers. While caregivers showed moderate resilience, self-confidence, and self-efficacy, many faced challenges that affected their effectiveness. Improving these dimensions is key to better coping and overall health.

Targeted interventions focusing on building resilience, self-confidence, and self-efficacy through training, workshops, and peer support are essential. These programs can improve caregivers' quality of life and the care provided to their children.

Moreover, emphasizing self-care and stress management techniques is vital to prevent burnout. Collaborative efforts from healthcare providers, social workers, and mental health professionals are necessary to offer comprehensive support to caregivers.

In terms of quality of life, Overall, the mean score of 2.62 ± 0.82 classified the quality of life as an undecided degree. This degree indicated a perception combination of positive and negative experiences of family caregivers. This highlighted the need for interventions that could improve their quality of life, such as boosted mental health support and social connectivity, and underscored the importance of addressing both physical and psychological well-being among caregivers.

The social relationships domain had the highest score (2.79 ± 0.76), which was crucial in providing emotional support and alleviating feelings of loneliness that often accompany caregiving responsibilities. On the contrary, in the study by Borrescio-Higa and Valdés (2022), the authors found that around 20% of the participants reported having strong negative experiences with their communication or emotional well-being¹³. This indicated that having a child with cancer affected many aspects of family life and impacted all family members .

In contrast, another study found that 61.3% of participants were satisfied with the social relationship domain. This study also found that there was a weak, positive correlation between social relations domain of quality of life and resilience with $r = 0.351$ ¹². Nursing staff should consider this information when supporting family caregivers, ensuring timely and effective support. If caregivers have a better quality of life, the quality of patient care will improve

The environment domain scored the lowest. It had a disagree degree (2.51 ± 0.78). This indicated a need for improvement in environmental conditions.. Similarly, the physical health domain received a mean score of 2.69 ± 0.88 , indicating an

undecided stance. In line with previous studies, in the study by Silva et al (2021), 62 family caregivers of children or adolescents with cancer in an university hospital in the state of Rio Grande do Sul, Brazil, were surveyed. The authors found that 67.7% of family caregivers felt satisfied with this domain, with a weak, positive correlation between resilience and quality of life of caregivers of children or adolescents with $r = 0.330$ ¹². This was the highest percentage in the subdomain of quality of life.

Lastly, the domain of psychological health received a disagree rating (2.58 ± 0.87). This low quality of life revealed that many caregivers faced significant challenges, including fatigue and stress, which led to insufficient energy for daily tasks. Poor sleep quality further worsens feelings of exhaustion, while inadequate rest diminished their ability to effectively cope with caregiving responsibilities. Abdulkareem et al. (2020) found similar results that the mean score for the Psychological health domain was lower for both mothers and fathers of children with cancer compared to those without cancer. Specifically, the mean score was 20.8 ± 3.84 for mothers of children with cancer versus 23.3 ± 2.81 for mothers in the control group, and 22.2 ± 4.08 for fathers of children with cancer versus 23.9 ± 4.56 for fathers in the control group with $p < 0.001$ ¹⁴.

Furthermore, in one meta-analysis study, the authors concluded that there were 5-65% of parents with anxiety, 7-91% of parents with depression, and 23-25% of parents with stress¹⁵.

The findings indicated that family caregiver respondents experienced a moderate quality of life with significant variability across different domains. Proper

interventions to improve their overall health are essential.

In terms of correlation between resilience and quality of life, The correlations between resilience and various dimensions of quality of life revealed significant insights into caregiver well-being. The analysis showed a strong positive correlation between resilience and physical health, with a Pearson's r value of 0.539 ($p < 0.001$), indicating that caregivers with higher resilience tended to report better physical health outcomes. A strong correlation was observed in psychological health, where a Pearson's r of 0.609 ($p < 0.001$) signified that greater resilience was closely associated with improved psychological well-being among caregivers.

In contrast, the relationship with social relationships was weaker, as indicated by a Pearson's r of 0.260 ($p < 0.001$), suggesting a less pronounced impact of resilience in this area. However, resilience showed a strong positive correlation with environmental factors, reflected by a Pearson's r of 0.553 ($p < 0.001$), indicating that resilient caregivers were more likely to perceive their environmental conditions favorably.

Finally, the strongest correlation was identified in overall quality of life, where a Pearson's r of 0.655 ($p < 0.001$) highlighted the significant role of resilience in enhancing the overall quality of life for caregivers

Additionally, the study "Distress, Family Resilience, and Quality of Life among Family Caregivers of Cancer Patients Undergoing Chemotherapy: The Moderating Role of Family Resilience" by Son-Hee Ahn provides further insights. After controlling for potential covariates, the findings indicated that distress was

negatively associated with quality of life ($\beta = -0.45$, $p < 0.001$), while family resilience showed a positive association with quality of life ($\beta = 0.49$, $p < 0.001$), explaining 62.8% of the variance in quality of life outcomes. Interestingly, the study also noted that family resilience did not moderate the relationship between distress and quality of life ¹⁶.

Overall, these findings highlighted the multifaceted role of resilience in enhancing the quality of life for family caregivers. While distress negatively impacts their well-being, fostering resilience emerged as a crucial strategy to improve their overall quality of life, reinforcing the need for targeted interventions and support systems for caregivers.

Based on the findings, there was a strong positive correlation between resilience and various aspects of quality of life, suggesting that individuals with higher levels of resilience tended to experience better overall well-being. This relationship underscored the importance of resilience in enhancing various dimensions of health and social functioning ¹⁷.

Furthermore, the findings indicated that individuals with higher resilience scores reported better physical health, which was supported by significant positive correlations between resilience measures and average physical quality. This suggested that resilient individuals were likely to engage in healthier behaviors, manage stress more effectively, and maintain better physical health outcomes, all of which contributed to their overall quality of life ¹⁸

In addition to physical health, the strong positive correlations between resilience measures and average psychological

quality highlighted resilience's critical role in promoting greater psychological well-being. Resilient individuals were often better equipped to cope with emotional challenges, adapt to stress, and maintain a positive outlook, which collectively enhanced their mental health ¹⁹.

LIMITATION

The demographic profile was gathered solely to describe the study participants and was not used as a test factor. This limitation means that while the demographic data provided context about the participants' characteristics, it did not influence the outcomes of the study. Therefore, any conclusions drawn should be considered in light of the fact that demographic factors were not examined as variables in the analysis.

CONCLUSION AND RECOMMENDATION

Based on these findings, it is evident that interventions aimed at enhancing caregivers' resilience are essential. By strengthening resilience, caregivers can better manage the emotional, physical, and psychological demands of caregiving, thereby reducing caregiving burden and improving their quality of life. Programs that provide emotional support, coping skills training, and stress management are recommended to help caregivers build resilience and improve their overall well-being. Enhancing social support networks can reduce feelings of loneliness; at the same time, addressing environmental factors can create safer, more accessible living conditions. Additionally, supporting mental health resources is crucial to helping family caregiver respondents manage their stress and improve physical health. Ensuring caregivers have access to practical resources and self-care training

will help them cope better with caregiving demands. With the implementation of these interventions, the quality of life of family caregivers of children with cancer will certainly improve.

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