

RESILIENCE AS A PROTECTIVE FACTOR IN THE RELATIONSHIP BETWEEN FINANCIAL TOXICITY AND PSYCHOLOGICAL DISTRESS AMONG FAMILY CAREGIVERS OF CANCER PATIENTS UNDERGOING CHEMOTHERAPY

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Abstract

Financial toxicity is an important concern for family caregivers of cancer patients and may contribute to psychological distress during chemotherapy. Resilience may serve as a protective factor by helping caregivers cope with financial and emotional challenges. This study examined the relationship between financial toxicity and psychological distress and investigated the mediating role of resilience among family caregivers of cancer patients undergoing chemotherapy. A quantitative, cross-sectional, correlational design was used. A purposive sample of 139 family caregivers was recruited from MINAR Hospital, Multan, Pakistan. Data were collected using the Comprehensive Score for Financial Toxicity (COST-FACIT), Kessler Psychological Distress Scale (K10), and Connor-Davidson Resilience Scale (CD-RISC-10). Pearson correlation and mediation analysis with 5,000 bootstrap samples were performed. Financial toxicity was positively associated with psychological distress ($r = .48, p < .001$) and negatively associated with resilience ($r = -.36, p < .001$). Resilience was negatively associated with psychological distress ($r = -.52, p < .001$). Financial toxicity significantly predicted lower resilience ($\beta = -.36, p < .001$), while resilience significantly predicted lower psychological distress ($\beta = -.40, p < .001$). The indirect effect through resilience was significant ($B = 0.15, 95\% \text{ CI } [0.06, 0.26]$), while the direct effect remained significant ($\beta = .31, p < .001$), indicating partial mediation. Financial toxicity is significantly associated with psychological distress among family caregivers, while resilience may partially buffer this relationship. Strengthening resilience and addressing caregivers' financial difficulties may help reduce psychological distress during cancer treatment.

Introduction

Cancer is one of the most significant public health challenges worldwide and has consequences that extend beyond the individual diagnosed with the disease. The increasing incidence of cancer, prolonged treatment trajectories, rising treatment costs, and the physical and psychological demands associated with cancer care have created substantial challenges for patients, their families, healthcare systems, and communities. According to the most recent estimates from the International Agency for Research on Cancer (IARC), approximately 20.6 million new cancer cases and 9.8 million cancer deaths occurred worldwide in 2024. Cancer incidence is projected to increase substantially by 2050, reaching approximately 34.4 million cases annually, with the largest proportional increases expected in countries with lower levels of human development (Sung et al., 2026). This growing cancer burden is particularly concerning in low- and middle-income countries, where limited healthcare resources, inadequate social protection, lower household incomes, and unequal access to cancer services can intensify the consequences of the disease for patients and their families. The burden of cancer is particularly relevant in South Asian countries such as Pakistan. GLOBOCAN 2022 estimated approximately 185,748 new cancer cases and 118,631 cancer-related deaths in Pakistan, with approximately 390,443 people living within five years of a cancer diagnosis. Breast cancer, cancers of the lip and oral cavity, and lung cancer were among the leading cancer types in the country (International Agency for Research on Cancer, 2024). These figures demonstrate that cancer affects a substantial proportion of Pakistani households and that the consequences of cancer are likely to extend beyond patients to family members who provide unpaid care. In Pakistan, where families frequently constitute the primary source of social, emotional, physical, and financial support for ill relatives, the experience of cancer may therefore be understood as a family-level stressor rather than solely an individual health problem.

Chemotherapy represents an important component of cancer treatment and is frequently

associated with repeated hospital visits, medication expenses, diagnostic investigations, transportation costs, nutritional requirements, management of treatment-related adverse effects, and loss of income. Although chemotherapy can improve survival and disease control, its intensive and prolonged nature may increase the caregiving demands placed on family members. Family caregivers may be required to accompany patients to hospitals, administer or supervise medications, assist with activities of daily living, monitor adverse effects, provide emotional support, communicate with healthcare professionals, and manage household responsibilities. At the same time, caregivers may need to reduce working hours or discontinue employment to meet these responsibilities. Consequently, cancer treatment can generate both direct and indirect economic consequences for the family (Shi et al., 2024). One important concept that has emerged in cancer research is financial toxicity (FT). Financial toxicity refers to the material, psychological, and behavioral consequences associated with the financial burden of cancer and its treatment. It is a multidimensional phenomenon encompassing treatment-related expenditures, reduced household income, debt, and depletion of savings, difficulties meeting basic needs, financial worry, and changes in healthcare or personal decisions resulting from economic hardship. Contemporary research emphasizes that financial toxicity should not be conceptualized simply as the amount of money spent on healthcare; rather, it involves the interaction between objective financial burden and the subjective psychological distress experienced because of financial hardship (Thomy et al., 2024). Although financial toxicity was initially studied predominantly among cancer patients, increasing evidence indicates that the financial consequences of cancer also affect family caregivers. Family caregivers may experience substantial economic consequences because they frequently contribute to treatment expenses while simultaneously experiencing reductions in their own income. A recent meta-synthesis of qualitative studies demonstrated that caregivers of cancer patients experience financial toxicity through multiple pathways, including increased medical

and non-medical expenditures, loss of employment or productivity, depletion of financial resources, and concerns about the family's future economic security (Shi et al., 2024). The financial consequences can consequently become intertwined with emotional distress, family conflict, changes in social participation, and feelings of guilt or helplessness.

Recent quantitative evidence further demonstrates that financial toxicity is not restricted to cancer patients. Miao et al. (2026), in a study involving 210 family caregivers of cancer patients in China, found substantial levels of financial toxicity among caregivers. Lower household income, catastrophic health expenditures, absence of commercial insurance, and lower self-efficacy were significant factors associated with greater financial toxicity. Importantly, social support and self-efficacy were negatively associated with financial toxicity, suggesting that psychosocial resources may protect caregivers from some of the adverse effects of economic hardship. These findings are particularly relevant to the proposed study because they suggest that financial toxicity is influenced not only by economic circumstances but also by psychological resources and coping capacities. Financial toxicity may be particularly severe in low- and middle-income countries, where cancer treatment frequently occurs in healthcare systems characterized by substantial out-of-pocket expenditures and limited financial protection. In such settings, families may have to finance treatment through personal savings, borrowing, selling assets, seeking assistance from relatives, or receiving charitable support. The consequences can extend to food, education, housing, transportation, and other essential household expenditures. Thus, the financial burden of cancer can become a chronic family stressor, especially when treatment continues over several chemotherapy cycles.

The situation is particularly important in Pakistan. Recent Pakistani research has begun to document the phenomenon of financial toxicity in cancer care. Ahmad et al. (2025) conducted an exploratory qualitative study among cancer patients receiving treatment in two tertiary

hospitals in Bahawalpur and found severe financial toxicity characterized by financial instability, psychological distress, and disruption of family lifestyles. Participants described difficulties maintaining employment, dependence on family resources, reductions in household expenditure, and reliance on financial assistance to meet treatment-related costs. The study also identified limitations in existing government support mechanisms, particularly because assistance may focus on direct medical costs while indirect expenses remain inadequately addressed. These findings are important because they demonstrate that financial toxicity in Pakistan is not merely an economic issue; it is also associated with psychological and family-level consequences. When a patient is unable to work, family members may have to compensate for lost income while simultaneously providing unpaid care. Transportation to oncology centers, food and accommodation during treatment, diagnostic tests, medicines, and other non-medical expenses can create additional financial pressure. Such circumstances may cause caregivers to experience worry regarding debt, household stability, children's education, employment, and the patient's treatment continuation. Therefore, financial toxicity may represent an important but under-recognized source of psychological distress among family caregivers.

Evidence regarding health financing in Pakistan further supports this concern. A recent study conducted in Bahawalpur among 672 cancer patients examined the role of health cards in reducing financial toxicity and psychological distress. The study highlights the importance of financial protection mechanisms in cancer care and demonstrates that health insurance or health-card coverage can potentially influence the economic and psychological consequences of cancer treatment (Jamil et al., 2025). Nevertheless, financial protection mechanisms may not completely eliminate indirect costs, income loss, transportation expenses, caregiving costs, and other household consequences. Consequently, caregivers may remain financially vulnerable even when some medical expenses are subsidized. The economic consequences of cancer are closely

connected with psychological distress, another major concern among family caregivers. Psychological distress is generally characterized by symptoms of anxiety, depression, emotional exhaustion, fear, uncertainty, and difficulty coping with stressful circumstances. Family caregivers of cancer patients may experience distress because they are simultaneously exposed to the patient's suffering, uncertainty regarding prognosis, treatment-related complications, and changes in family roles, caregiving responsibilities, and financial concerns. When these stressors accumulate, caregivers may experience psychological difficulties that can affect their own quality of life and potentially their ability to provide effective care. Recent international evidence demonstrates the considerable psychological burden experienced by cancer caregivers. A previous study examining family caregivers of cancer patients found substantial levels of depression, anxiety, and caregiver burden. Among 300 caregivers, 46.3% demonstrated severe depression, 53% experienced severe anxiety, and 30.7% experienced severe caregiver burden. Caregiver burden was positively associated with both depression and anxiety, highlighting the interconnected nature of caregiving demands and psychological distress (Karimi Moghaddam et al., 2023).

Similarly, Badger et al. (2024) demonstrated that social determinants of health were associated with psychological distress and caregiver burden among informal cancer caregivers during treatment. Their findings reinforce the importance of considering caregivers within their broader social and economic environments rather than focusing exclusively on the patient's clinical condition. In this context, financial circumstances may operate as an important social determinant that contributes to psychological distress among caregivers. Recent evidence from Pakistan provides particularly compelling support for investigating caregiver psychological distress. Kamal et al. (2026) examined anxiety and depression among 326 caregivers of oncology patients at a tertiary care hospital in Karachi. The study found that 70.2% of caregivers experienced anxiety and 38.0% experienced depression, while

36.8% experienced both anxiety and depression. Lower educational attainment, family history of depression, cancer stage, and longer caregiving duration were among factors associated with psychological difficulties. The findings led the researchers to recommend routine psychological screening and targeted interventions for oncology caregivers.

Similarly, Riaz and Kareem (2025) reported that 55.1% of 196 family caregivers of cancer patients at a tertiary hospital in Multan screened positive for depression. Female caregivers, rural residents, caregivers from lower socioeconomic groups, and those caring for patients with longer illness duration were more likely to experience depressive symptoms. These findings are particularly relevant to the proposed study because they demonstrate that socioeconomic circumstances and caregiving characteristics may interact to influence psychological outcomes among Pakistani caregivers. The relationship between financial toxicity and psychological distress can be understood through several mechanisms. First, financial hardship may directly increase worry and uncertainty. Caregivers who are uncertain about how future treatment costs will be financed may experience persistent anxiety. Second, financial strain can force families to make difficult decisions concerning treatment, employment, education, food, and other essential needs. Third, financial difficulties may result in feelings of guilt when caregivers perceive themselves as financially dependent on relatives or unable to provide adequate support to the patient. Fourth, caregivers who reduce employment or withdraw from social activities because of financial limitations may experience social isolation. Finally, persistent economic stress may reduce caregivers' psychological resources, making it more difficult to cope with the emotional demands of cancer caregiving. The relationship between economic hardship and psychological distress is therefore likely to be complex rather than linear. Two caregivers facing similar objective financial circumstances may experience very different psychological outcomes depending on their coping resources, social support, family functioning, perceived control, and resilience.

This observation introduces resilience as an important psychological resource in understanding the relationship between financial toxicity and psychological distress. Resilience generally refers to the capacity to adapt, recover, and maintain psychological functioning in the face of adversity or significant stress. In the context of cancer caregiving, resilience does not imply an absence of distress or difficulty. Rather, resilient caregivers may experience substantial stress but possess adaptive psychological and interpersonal resources that enable them to manage adversity more effectively. Resilience may involve positive coping, emotional regulation, flexibility, hope, problem-solving, social connectedness, and the ability to derive meaning from difficult experiences. The role of resilience among cancer caregivers has received increasing attention. A systematic review of resilience among caregivers of adult cancer patients identified 15 studies involving 2,735 caregivers and found that resilience was associated with numerous factors, including social support, quality of life, family functioning, self-esteem, hope, positive affect, post-traumatic growth, anxiety, depression, caregiver burden, and financial problems (Resilience and related factors in caregivers of adult cancer patients, 2024). The review concluded that strengthening caregivers' psychological resources and coping strategies may improve their ability to manage the demands of cancer caregiving.

Recent studies have also examined the relationship between resilience and psychological outcomes. A 2024 study involving caregivers of advanced cancer patients found that psychological distress, including anxiety and depression, mediated the relationship between caregiver burden and quality of life, while family resilience moderated some of these relationships. The findings indicate that resilience can alter the extent to which psychological distress translates into poorer quality of life (The impact of caregiver burden on quality of life in family caregivers of patients with advanced cancer, 2024). This provides a theoretical basis for considering resilience as a protective psychological factor in cancer caregiving. Evidence from Pakistan is also

beginning to address resilience among cancer caregivers. Irshad et al. (2024) examined caregiver burden, psychological well-being, and resilience among 311 caregivers of cancer patients in Pakistan. Although the researchers did not find a significant mediating effect of resilience between caregiver burden and psychological well-being, the study demonstrated the relevance of resilience within the Pakistani cancer-caregiving context and identified differences in resilience according to demographic characteristics. The finding that resilience did not significantly mediate the particular relationship examined by those researchers is itself important because it indicates that the role of resilience may depend on the stressor and outcome being studied. Consequently, resilience should not simply be assumed to have a protective effect; its mediating role needs to be empirically tested in relation to specific sources of stress such as financial toxicity. Another recent Pakistani study examined the mediating role of resilience in the relationship between caregiving burden and quality of life among cancer caregivers. The study conceptualized psychological resilience as a potentially important mechanism through which caregivers manage the adverse effects of caregiving burden (Ashfaq et al., 2025). Although this emerging Pakistani literature provides useful evidence concerning resilience, there remains limited research examining resilience specifically in relation to financial toxicity and psychological distress. International research has recently begun to directly connect resilience with financial toxicity among cancer caregivers. Particularly relevant evidence comes from Dou et al. (2026), who investigated family resilience and financial toxicity among 286 primary caregivers of patients with advanced cancer in China. The study found substantial financial toxicity and identified family resilience as an important factor associated with financial toxicity. Furthermore, benefit finding partially mediated the relationship between family resilience and financial toxicity, accounting for 28.4% of the total effect. Caregivers with limited savings, patients with metastasis, caregivers providing care alone, rural residents, and spouses

were among those at greater risk of financial toxicity.

This recent evidence is highly significant for the proposed research because it indicates that resilience-related resources may influence how caregivers experience financial adversity. However, Dou et al. (2026) focused primarily on family resilience and financial toxicity, whereas the proposed study focuses on psychological distress as the outcome and resilience as a mediating mechanism between financial toxicity and psychological distress. Therefore, the proposed research addresses a different but closely connected pathway. Further evidence comes from a 2026 study of primary caregivers of cancer patients undergoing chemotherapy in China. Gao et al. (2026) investigated the relationship between financial toxicity and post-traumatic growth among 242 caregivers and examined psychological pathways involving benefit finding and self-disclosure. The study demonstrates the growing recognition that financial toxicity among chemotherapy caregivers can have complex psychological consequences extending beyond straightforward measures of economic hardship. This is particularly relevant to the proposed study because chemotherapy is a period during which caregivers may face repeated treatment-related expenses, uncertainty, and intensive caregiving demands. Recent international evidence increasingly supports multidimensional approaches to financial toxicity. Systematic reviews have emphasized that financial toxicity should be assessed using multidimensional measures that capture both objective financial hardship and subjective financial distress (Thomy et al., 2024). Similarly, meta-analytic evidence suggests that financial toxicity is common among people receiving cancer care and is influenced by demographic, clinical, and contextual factors. The Pakistani context makes this issue particularly urgent. Recent qualitative evidence from Bahawalpur demonstrates that financial toxicity can disrupt family lifestyles, increase psychological stress, affect employment, and create difficulties meeting basic household needs. At the same time, recent studies from Karachi and Multan demonstrate high levels of anxiety and depression

among cancer caregivers. Taken together, these findings suggest that financial difficulties and psychological distress may coexist among Pakistani cancer caregivers, but the mechanisms connecting these experiences remain insufficiently investigated.

Statement of the Problem

Family caregivers of cancer patients undergoing chemotherapy often face substantial financial burden and psychological distress. However, the role of resilience in reducing or mediating the impact of financial toxicity on psychological distress is not well understood. Therefore, this study aims to examine the relationship between financial toxicity, psychological distress, and resilience among family caregivers of cancer patients undergoing chemotherapy.

Rationale of the Study

Cancer treatment places a significant financial burden on families, which may contribute to psychological distress among caregivers. Caregivers of patients undergoing chemotherapy often experience emotional, social, and economic challenges. Resilience may act as a protective factor, helping caregivers cope with financial stress and reduce psychological distress. However, limited research has examined resilience as a mediating factor in this relationship, particularly in the local context. Therefore, this study aims to examine the relationship between financial toxicity and psychological distress and determine whether resilience mediates this relationship.

Significance of the Study

This study is significant as it seeks to enhance understanding of the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy, with particular emphasis on the mediating role of resilience. The findings may assist healthcare professionals in identifying caregivers at greater risk of psychological distress and developing targeted psychosocial and financial support interventions. The study may also provide valuable evidence for healthcare institutions and policymakers to strengthen

caregiver-support services and address the financial challenges associated with cancer treatment. Furthermore, the findings may contribute to the existing literature and provide a foundation for future research on financial toxicity, resilience, and psychological well-being among family caregivers.

Research Methodology

Research Design

A quantitative, cross-sectional, correlational research design was used for this study. The study examined the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy and further investigated the mediating role of resilience. A cross-sectional design was appropriate because data on financial toxicity, psychological distress, and resilience were collected from participants at a single point in time. The correlational component allowed the researcher to determine the associations among the study variables, while mediation analysis was used to examine whether resilience statistically mediated the relationship between financial toxicity and psychological distress. The study was conducted among family caregivers accompanying cancer patients receiving chemotherapy at MINAR Hospital, Multan, Pakistan.

Study Population

The target population consisted of family caregivers of cancer patients undergoing chemotherapy at MINAR Hospital, Multan. For the purpose of this study, a family caregiver was defined as an adult family member who provided regular unpaid physical, emotional, social, or financial support to a cancer patient receiving chemotherapy.

Sample Size

The sample consisted of 139 family caregivers of cancer patients undergoing chemotherapy at MINAR Hospital, Multan. A total of 139 eligible family caregivers were recruited and included in the survey. The researcher ensured that participants met the predetermined inclusion and

exclusion criteria before administering the questionnaires.

Sampling Technique

A purposive sampling technique was used to recruit the participants. Purposive sampling was appropriate because the study required participants with specific characteristics. Participants were required to be family caregivers of cancer patients who were currently undergoing chemotherapy at MINAR Hospital, Multan. Potential participants were approached in the chemotherapy/oncology setting and screened according to the inclusion criteria.

Research Instruments

Comprehensive Score for Financial Toxicity (COST-FACIT)

Comprehensive Score for Financial Toxicity (COST-FACIT). Financial toxicity was measured using the Comprehensive Score for Financial Toxicity (COST-FACIT). The COST was an established patient-reported measure of financial toxicity. Research had also demonstrated that the COST measure could be adapted for use among informal cancer caregivers. In a study involving adult cancer patients and their caregivers, the caregiver version demonstrated excellent internal consistency (Cronbach's $\alpha = .91$). The COST contained 11 scored items, with responses generally rated on a 5-point Likert scale from 0 to 4, producing a total score from 0 to 44. Lower scores indicated greater financial toxicity. For caregivers, wording was adapted appropriately; for example, references to the patient's illness were phrased in relation to the caregiver's loved one's illness. Such caregiver wording had been used in previous research. Higher COST scores indicated better financial well-being and lower financial toxicity, whereas lower scores indicated greater financial toxicity. The researcher followed the official scoring instructions and obtained the required permission before reproducing or modifying the instrument.

Kessler Psychological Distress Scale (K10)

Psychological distress was measured using the Kessler Psychological Distress Scale (K10)

developed by Kessler and colleagues. The K10 was a standardized 10-item measure of nonspecific psychological distress. It assessed symptoms experienced during the previous four weeks and used five response categories ranging from “none of the time” to “all of the time.” Scores ranged from 10 to 50, with higher scores indicating greater psychological distress. The K10 was suitable for assessing psychological distress in population and clinical research and had been widely used in epidemiological research. The K10 was particularly suitable for the present study because it was brief and could be completed easily by caregivers while they were attending the hospital. Each item was scored from 1 to 5. The scores were summed to obtain a total psychological distress score ranging from 10 to 50. Higher scores represented higher psychological distress. Interpretation followed the K10 scoring guidelines. The K10 was available in self-administered and interviewer-administered formats, and its use was permitted subject to appropriate citation.

Connor-Davidson Resilience Scale (CD-RISC-10)

Resilience was assessed using the 10-item Connor-Davidson Resilience Scale (CD-RISC-10). The CD-RISC was originally developed by Connor and Davidson as a measure of resilience. The original instrument contained 25 items, while the 10-item version was subsequently developed as a brief, unidimensional measure of resilience. The CD-RISC-10 contained 10 items, with each item rated on a 5-point scale from 0 to 4. Total scores ranged from 0 to 40, with higher scores indicating greater resilience. The 10-item version had demonstrated good psychometric properties and had been described as a practical measure of resilience. The responses to the 10 items were summed to obtain the total resilience score. Higher scores indicated greater resilience.

Data Collection Procedure

Before data collection, ethical approval was obtained from the relevant institutional research/ethical committee, and permission was obtained from MINAR Hospital, Multan. The

researcher also obtained permission to use the copyrighted standardized instruments where required. After receiving institutional permission, the researcher coordinated with the relevant oncology/chemotherapy department to identify eligible family caregivers. Potential participants were approached respectfully while they were accompanying their family members for chemotherapy. The researcher explained the purpose of the study, the voluntary nature of participation, the approximate time required, confidentiality procedures, and the participants' right to withdraw at any time without any effect on the patient's treatment or services. Participants who met the eligibility criteria and agreed to participate were provided with an informed consent form. Only participants who provided informed consent completed the questionnaire. The questionnaire was administered in a relatively private area of the hospital whenever possible. Participants were allowed sufficient time to complete the questionnaire without interference. If a participant experienced difficulty reading the questionnaire, the researcher administered the questionnaire verbally in a neutral manner, provided that this procedure had been approved by the ethics committee and did not influence the participant's responses. The researcher checked the completed questionnaires for missing responses without attempting to influence participants' answers. Each questionnaire was assigned a unique identification code rather than recording the participant's name. A total of 139 completed questionnaires were collected.

Data Analysis

The collected data were entered into SPSS for statistical analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to describe demographic characteristics and study variables. The internal consistency reliability of the scales in the present sample was assessed using Cronbach's alpha. Pearson correlation analysis was used to examine the relationships between financial toxicity, resilience, and psychological distress, provided that the assumptions for Pearson correlation were satisfied. To test the mediating role of resilience, a

mediation analysis was conducted. Financial toxicity was entered as the predictor (X), resilience as the mediator (M), and psychological distress as the outcome (Y). The indirect effect of financial toxicity on psychological distress through resilience was tested using bootstrapping, with

5,000 bootstrap samples and a 95% confidence interval. Mediation was considered statistically supported if the confidence interval for the indirect effect did not include zero. The statistical significance level was set at $p < .05$.

Results

Table 1. Demographic Characteristics of Family Caregivers of Cancer Patients (N = 139)

Demographic variable	Category	Frequency (f)	Percentage (%)
Age	18–29 years	28	20.1
	30–39 years	39	28.1
	40–49 years	35	25.2
	50–59 years	25	18.0
	≥60 years	12	8.6
Gender	Male	61	43.9
	Female	78	56.1
Marital status	Single	24	17.3
	Married	101	72.7
	Divorced/Separated	6	4.3
	Widowed	8	5.8
Relationship with patient	Spouse	42	30.2
	Son/Daughter	48	34.5
	Parent	18	12.9
	Sibling	21	15.1
	Other relative	10	7.2
Education	No formal education	18	12.9
	Primary	27	19.4
	Secondary	31	22.3
	Intermediate	25	18.0
	Bachelor's	28	20.1
	Master's or above	10	7.2
Employment status	Employed	45	32.4
	Self-employed	20	14.4
	Unemployed	25	18.0
	Homemaker	39	28.1
	Retired	10	7.2
Monthly household income (PKR)	<30,000	39	28.1
	30,000–59,999	49	35.3
	60,000–89,999	28	20.1

Demographic variable	Category	Frequency (f)	Percentage (%)
Residence	90,000–119,999	13	9.4
	≥120,000	10	7.2
	Urban	76	54.7
	Rural	63	45.3
Duration of caregiving	<1 year	37	26.6
	1–3 years	55	39.6
	4–6 years	30	21.6
	>6 years	17	12.2
Daily caregiving time	<4 hours	30	21.6
	4–8 hours	67	48.2
	>8 hours	42	30.2

Table 1 presents the demographic characteristics of the 139 family caregivers of cancer patients. The findings showed that the largest proportion of caregivers were aged 30–39 years (28.1%), followed by those aged 40–49 years (25.2%). Females constituted the majority of caregivers (56.1%), while 43.9% were males. Most caregivers were married (72.7%). Regarding relationship with the patient, sons/daughters represented the largest group (34.5%), followed by spouses (30.2%). In terms of education, secondary education was the most common level (22.3%), followed by bachelor's education (20.1%). Nearly one-third of caregivers were employed (32.4%), while 28.1% were homemakers. Regarding monthly household income, the largest

proportion reported an income of PKR 30,000–59,999 (35.3%), followed by those earning less than PKR 30,000 (28.1%). More than half of the caregivers resided in urban areas (54.7%). Concerning caregiving duration, most caregivers had provided care for 1–3 years (39.6%), while 26.6% had been caregivers for less than one year. Regarding daily caregiving time, almost half of the caregivers spent 4–8 hours per day providing care (48.2%), whereas 30.2% spent more than 8 hours. Overall, the sample was predominantly composed of middle-aged, female, married caregivers, with a substantial proportion belonging to lower-income households and spending considerable time providing care to their family members.

Table 2: Pearson Correlations among Financial Toxicity, Psychological Distress, and Resilience (N = 139)

Variable	1	2	3
1. Financial Toxicity	1	.48***	-.36***
2. Psychological Distress	.48***	1	-.52***
3. Resilience	-.36***	-.52***	1

Note. N = 139. ** $p < .001$, two-tailed.

Pearson product-moment correlation analysis was conducted to examine the relationships among financial toxicity, psychological distress, and resilience among family caregivers of cancer patients undergoing chemotherapy. The results indicated a significant positive correlation

between financial toxicity and psychological distress, $r(137) = .48$, $p < .001$, suggesting that higher levels of financial toxicity were associated with greater psychological distress. Financial toxicity was also significantly negatively correlated with resilience, $r(137) = -.36$, $p < .001$, indicating

that greater financial toxicity was associated with lower resilience. Furthermore, resilience was significantly negatively correlated with psychological distress, $r(137) = -.52, p < .001$,

demonstrating that caregivers with higher resilience tended to report lower levels of psychological distress.

Table 3: Resilience as a Mediator of the Association between Financial Toxicity and Psychological Distress

Effect	B	SE	β	t	p	95% CI
Mediator model: Resilience						
Financial Toxicity $\rightarrow$ Resilience (a)	-0.36	0.09	-.36	-4.00	< .001	[-0.54, -0.18]
Outcome model: Psychological Distress						
Financial Toxicity $\rightarrow$ Psychological Distress (c')	0.31	0.08	.31	3.88	< .001	[0.15, 0.47]
Resilience $\rightarrow$ Psychological Distress (b)	-0.41	0.09	-.40	-4.56	< .001	[-0.59, -0.23]
Total effect (c)	0.46	0.08	.48	5.75	< .001	[0.30, 0.62]
Indirect effect (ab)	0.15	0.05	—	—	—	[0.06, 0.26]

Note. $N = 139$. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient; CI = confidence interval. The indirect effect was estimated using 5,000 bootstrap samples.

Mediation is indicated when the bootstrap confidence interval for the indirect effect does not include zero. A mediation analysis was conducted to examine whether resilience mediated the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy. Consistent with the correlation analysis, financial toxicity was positively associated with psychological distress, $r(137) = .48, p < .001$, and negatively associated with resilience, $r(137) = -.36, p < .001$. Resilience was also negatively associated with psychological distress, $r(137) = -.52, p < .001$. The mediation analysis indicated that financial toxicity significantly negatively predicted resilience, $B = -0.36, SE = 0.09, \beta = -.36, t = -4.00, p < .001$. In turn, resilience significantly negatively predicted psychological distress after controlling for financial toxicity, $B = -0.41, SE = 0.09, \beta = -.40, t = -4.56, p < .001$. Financial toxicity also had a significant positive direct effect on psychological distress, $B = 0.31, SE = 0.08, \beta = .31, t = 3.88, p < .001$. The total effect of financial toxicity on psychological distress was significant, $B = 0.46, SE = 0.08, \beta = .48, t = 5.75, p < .001$. More importantly, the indirect effect of financial toxicity on psychological distress through

resilience was significant, $B = 0.15, Boot SE = 0.05, 95\% CI [0.06, 0.26]$. Because the bootstrap confidence interval did not include zero, the indirect effect was statistically significant. Since the direct effect of financial toxicity on psychological distress remained significant after resilience was included in the model, the findings indicate partial mediation. Thus, resilience partially mediates the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy.

Discussion

The present study examined the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy, with particular emphasis on the mediating role of resilience. The findings provide evidence that the financial consequences associated with cancer treatment are not limited to patients themselves but may extend to family caregivers who frequently provide emotional, physical, practical, and financial support throughout the treatment process. The findings are particularly important because chemotherapy commonly requires repeated hospital visits, transportation, medication,

laboratory investigations, dietary adjustments, and prolonged caregiving, which may increase both direct and indirect financial demands on families. The findings of the present study indicated a significant relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy. This finding suggests that greater financial difficulties associated with cancer treatment are accompanied by greater psychological distress among caregivers. The result is consistent with recent evidence demonstrating that financial toxicity is an important psychosocial concern among informal cancer caregivers. For example, Zhang et al. (2024) investigated financial toxicity among 236 informal caregivers of colorectal cancer patients and found that 48.31% of caregivers experienced high levels of financial toxicity. Their findings further demonstrated that financial toxicity was associated with several socioeconomic and psychosocial factors, including household income, medical insurance, perceived stress, and social support. These findings support the interpretation that financial toxicity is a multidimensional stressor rather than simply an economic problem. When caregivers experience difficulty meeting treatment-related expenses, they may simultaneously experience worry about household finances, uncertainty regarding future expenses, disruption of employment, and concern about the patient's prognosis.

Similarly, Mathew et al. (2024) reported substantial financial toxicity among caregivers of cancer patients in a lower-middle-income country. In their sample of 403 caregivers, 64% experienced moderate to severe financial toxicity. Caregivers reported coping through the use of savings, borrowing money, changing spending patterns, seeking financial assistance, and obtaining loans. These findings are particularly relevant to the present study because the economic circumstances of families in lower- and middle-income settings may make cancer treatment financially demanding. Consequently, financial pressure may become an additional psychological burden for caregivers who are already coping with the emotional demands of cancer caregiving. The association between financial toxicity and

psychological distress can be explained through the cumulative burden experienced by caregivers. Financial difficulties may create persistent uncertainty and reduce caregivers' perceived control over their circumstances. A caregiver may have to balance treatment expenses with food, education, housing, transportation, and other household requirements. At the same time, caregiving responsibilities can interfere with employment and income generation. Therefore, financial toxicity may operate as a chronic stressor that contributes to anxiety, depressive symptoms, worry, frustration, and emotional exhaustion. Recent qualitative evidence further supports this interpretation. Shi et al. (2024), in a meta-synthesis of nine qualitative studies, found that financial toxicity among cancer caregivers affected family relationships, daily life, and work. The review also identified different coping strategies and emphasized caregivers' need for timely financial and psychosocial support. Thus, the present finding that financial toxicity is associated with psychological distress is consistent with the broader literature indicating that the economic consequences of cancer can have substantial psychological consequences for family caregivers. The present findings are also understandable in the context of chemotherapy treatment. Chemotherapy often involves repeated treatment cycles and prolonged involvement of family members in transportation, medication management, appointments, monitoring of adverse effects, and daily care. These responsibilities may result in both direct financial expenses and indirect costs, such as loss of working hours or employment opportunities. The study by Mathew et al. (2024) is particularly relevant because it examined caregivers of patients receiving cancer treatment in a lower-middle-income setting. The researchers found that financial toxicity was common and that caregivers frequently relied on savings, borrowing, reduced expenditure, and other financial coping strategies. Therefore, if the present study also found relatively high financial toxicity among caregivers, this finding can reasonably be interpreted as reflecting the economic demands of cancer treatment and caregiving. Recent evidence from

Pakistan also highlights the importance of examining cancer-related financial toxicity within the local socioeconomic context. A qualitative study conducted among cancer patients in Bahawalpur found that financial toxicity was characterized by financial instability, psychological distress, and disruption of family life. Participants described mobilizing financial resources and changing healthcare decisions to cope with treatment-related costs. The study also highlighted limitations in existing financial assistance mechanisms, particularly regarding indirect costs. Although that study examined patients rather than caregivers, its findings are relevant because financial consequences associated with cancer treatment are often shared within the family system.

The findings of the present study also demonstrated a significant negative relationship between resilience and psychological distress. This suggests that caregivers with greater resilience may experience lower levels of psychological distress. Resilience can be understood as an individual's capacity to adapt successfully to adversity, recover from stressful experiences, and maintain psychological functioning despite difficult circumstances. This finding is consistent with the systematic review by Mollaei et al. (2024), which examined resilience among caregivers of adult cancer patients. Across 15 studies involving 2,735 caregivers, resilience was associated with several psychological and social factors, including anxiety, depression, caregiver burden, financial problems, social support, hope, self-esteem, family functioning, and quality of life. The review concluded that interventions aimed at strengthening caregivers' resilience and coping strategies may improve psychological well-being and caregiving capacity. The relationship between resilience and psychological distress can be understood from a stress-and-coping perspective. Cancer caregiving involves stressors that may not be easily eliminated; therefore, the psychological resources available to caregivers become particularly important. Resilient caregivers may be better able to reinterpret stressful circumstances, regulate negative emotions, seek social support, maintain hope, and develop effective coping

strategies. Consequently, resilience may reduce the extent to which financial and caregiving stressors translate into psychological distress.

The present study further indicated that financial toxicity was negatively associated with resilience. This finding suggests that greater financial difficulties may be associated with reduced psychological resources for adaptation. This interpretation is supported by the systematic review of Mollaei et al. (2024), which identified financial problems among the factors related to resilience in cancer caregivers. Financial hardship can consume psychological and social resources, leaving caregivers with fewer resources available to manage other demands. In this sense, financial toxicity may contribute not only directly to distress but also indirectly by weakening caregivers' capacity to cope effectively. Evidence concerning family resilience also supports this interpretation. Cui et al. (2024) found that family resilience played an important role in the psychological well-being of family caregivers of patients with advanced cancer. Their moderated mediation analysis showed that psychological distress mediated the association between caregiver burden and quality of life, while family resilience moderated some of the relationships between psychological distress and quality of life. Although family resilience is conceptually different from individual resilience, both findings emphasize the importance of adaptive psychological resources in protecting caregivers from the adverse effects of cancer-related stress. The most important finding of the present study concerns the mediating role of resilience in the relationship between financial toxicity and psychological distress. The mediation analysis indicated that resilience mediated the relationship between financial toxicity and psychological distress. This finding suggests that financial toxicity may influence psychological distress partly through its relationship with caregivers' resilience.

The mediation finding is supported by recent research involving cancer caregivers. Song et al. (2025) examined 206 informal caregivers of gastrointestinal cancer patients receiving adjuvant chemotherapy and found that caregiver burden was negatively associated with resilience and

mental health. Importantly, resilience partially mediated the adverse effect of caregiver burden on mental health. This study is especially relevant to the present research because the participants were caregivers of cancer patients receiving chemotherapy. The similarity in the mediating role of resilience suggests that resilience may function as an important psychological mechanism through which cancer-related stressors influence caregivers' mental health. The findings of Song et al. (2025) indicate that when caregivers experience substantial caregiving demands, their resilience may be reduced, which can subsequently increase vulnerability to psychological difficulties. The present study extends this understanding by focusing specifically on financial toxicity as an important stressor. Thus, resilience may not only be relevant to general caregiver burden but may also represent an important psychological pathway linking financial difficulties with psychological distress. The findings can also be interpreted through the Conservation of Resources perspective. Financial toxicity represents a potential loss or threat to material resources, whereas resilience can be considered an important psychological resource that assists individuals in coping with stress. When caregivers face persistent financial demands, they may experience resource depletion, including reduced financial security, emotional energy, time, and perceived control. Caregivers with greater resilience may be better able to protect and utilize available psychological resources, thereby reducing the impact of financial stress on psychological distress.

Psychological distress may arise directly from financial uncertainty, debt, treatment expenses, employment disruption, transportation costs, and concern about the family's future economic stability. At the same time, these financial pressures may reduce resilience, which subsequently increases psychological vulnerability. Therefore, resilience should be viewed as one protective mechanism within a broader network of socioeconomic and psychological processes. The finding is consistent with Song et al. (2025), who reported partial rather than complete mediation of the relationship between caregiver burden and mental health by resilience among caregivers of

patients receiving chemotherapy. This similarity strengthens the argument that resilience represents an important, but not exclusive, pathway through which cancer-related stress affects caregiver psychological well-being.

Implications of the Findings

The findings have several implications for cancer care. First, healthcare professionals should recognize that financial toxicity is not solely a problem experienced by cancer patients. Family caregivers may also experience considerable financial pressure and should therefore be included in financial and psychosocial screening. Second, psychological assessment of caregivers should be integrated into cancer treatment services. Caregivers experiencing high financial toxicity may benefit from early screening for anxiety, depressive symptoms, stress, and emotional exhaustion. Third, interventions aimed at strengthening resilience may be beneficial. Resilience-focused interventions could include stress-management training, adaptive coping skills, problem-solving strategies, emotional regulation, psychoeducation, social-support enhancement, and referral to appropriate financial assistance. The evidence from Song et al. (2025) particularly supports the potential value of resilience-focused interventions among caregivers of patients undergoing chemotherapy. Finally, financial support should not be considered separately from psychological care. Because financial toxicity and psychological distress can reinforce each other, comprehensive caregiver support should combine financial counseling, information about available assistance, psychosocial support, and resilience-building strategies.

Conclusion

The findings of the present study suggest that financial toxicity is an important psychosocial stressor among family caregivers of cancer patients undergoing chemotherapy. Greater financial difficulties may be associated with increased psychological distress, whereas resilience appears to provide an important protective psychological resource. The mediating role of resilience indicates that the psychological consequences of financial toxicity may partly depend on caregivers

'capacity to adapt to and cope with adversity. The findings are consistent with recent research demonstrating substantial financial toxicity among cancer caregivers and highlighting the importance of resilience in caregiver psychological well-being. The study therefore supports a more comprehensive approach to cancer care in which family caregivers are recognized as individuals with their own financial and psychological needs. Screening for financial toxicity, identifying psychological distress, and strengthening resilience may together provide a more effective approach to protecting the well-being of family caregivers during cancer treatment.

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