Volume 4, Issue 3, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

FINANCIAL TOXICITY AND ADVERSE MENTAL-HEALTH OUTCOMES AMONG FAMILY CAREGIVERS OF CANCER PATIENTS UNDERGOING CHEMOTHERAPY: ROLE OF RESILIENCE

Arooj Fatima[1], Shama Iqbal[2], Neelam[3], Abdul Waheed[*4], Dr. Abid Hussain[5], Sumaira Riaz[6]

[1]*Research Assistant at The Women University Multan, Pakistan*
[2]*Community Research Technologist in Pakistan Institute of Living and Learning*
[3]*Department of Applied Psychology the Women University Multan*
[*4]*Life Institute of Counseling and Research Training*
[5]*National Professional Officer Health Department Multan, Pakistan*
[6]*Department of Applied Psychology Bahuddin Zakariya University Multan, Pakistan*

[1]arojfatima094@gmail.com, [2]iqbalshama18@gmail.com, [3]neelamasghar2000@gmail.com, [*4]abdulwaheed.licrt@gmail.com, [5]drabidwho@gmail.com, [6]licrtpakistan@gmail.com

DOI: https://doi.org/10.5281/zenodo.22109627

Keywords
Financial toxicity, psychological distress, resilience, family caregivers, cancer, chemotherapy.

Article History
Received: 19 January 2026
Accepted: 04 March 2026
Published: 18 March 2026

Copyright @Author

Corresponding Author: *
Abdul Waheed

Abstract

Family caregivers of patients undergoing cancer chemotherapy often experience substantial financial and psychological challenges. However, resilience may serve as a protective psychological resource that reduces the adverse mental-health consequences associated with financial toxicity. The present study examined the relationship between financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy and investigated the mediating role of resilience. A correlational research design was employed with a quantitative survey approach. A purposive sample of 107 family caregivers was recruited from Combined Military Hospital (CMH), Multan, and MINAR Cancer Hospital, Multan. Data were collected using the Comprehensive Score for Financial Toxicity (COST-FACIT), Kessler Psychological Distress Scale (K10), and Connor-Davidson Resilience Scale (CD-RISC). Pearson correlation and mediation analyses were conducted to examine associations among the study variables. Financial toxicity was significantly positively associated with psychological distress ($r = .53$, $p < .01$) *and negatively associated with resilience* ($r = -.39$, $p < .01$). *Resilience demonstrated a strong negative association with psychological distress* ($r = -.69$, $p < .01$). *Moreover, resilience partially mediates the relationship of financial toxicity and adverse mental- health outcomes. Financial toxicity is associated with greater psychological distress among family caregivers of cancer patients undergoing chemotherapy, whereas resilience appears to function as a significant protective factor. Interventions aimed at strengthening resilience alongside addressing caregivers' financial concerns may help reduce psychological distress and improve caregiver well-being.*

Introduction

Cancer is a major global public health problem that affects not only patients but also their families and informal caregivers. The most recent GLOBOCAN estimates reported approximately 20.6 million new cancer cases and 9.8 million

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

cancer-related deaths worldwide in 2024. The global cancer burden is expected to increase substantially, with annual new cases projected to reach 34.4 million by 2050, representing a 67% increase from 2024. This increasing burden is particularly important for low- and middle-income countries, where limited healthcare resources and financial protection may increase the social and economic consequences of cancer for affected families (Sung et al., 2026). Pakistan is also experiencing a considerable cancer burden. According to the International Agency for Research on Cancer, Pakistan had an estimated 185,748 new cancer cases and 118,631 cancer-related deaths in 2022, with 390,443 people living within five years of a cancer diagnosis. Breast cancer was the most frequently diagnosed cancer, followed by cancers of the lip and oral cavity, lung, colorectum, and oesophagus. The magnitude of cancer in Pakistan means that a large number of families are required to provide ongoing practical, emotional, and financial support to patients throughout diagnosis and treatment (International Agency for Research on Cancer, 2024).

Cancer treatment frequently requires prolonged and expensive care, and chemotherapy can place considerable demands on patients and their family caregivers. Caregivers may accompany patients to repeated treatment sessions, arrange transportation, manage treatment-related symptoms, purchase medicines, provide nutritional support, and assist with daily activities. These responsibilities may also interfere with employment and household duties. Consequently, the financial consequences of cancer treatment extend beyond direct medical expenditure to include transportation, accommodation, and food, lost wages, reduced employment, and other indirect costs. In resource-constrained settings, these cumulative expenses can place considerable pressure on the entire household (Mathew et al., 2024). The financial consequences of cancer are increasingly conceptualized as financial toxicity, which refers to the material and psychological difficulties resulting from the economic burden of cancer and its treatment. Financial toxicity may include difficulties paying for treatment, depletion of savings, borrowing money, debt, loss of income, employment disruption, and reduced ability to meet routine household needs. Importantly, financial toxicity is not limited to patients; family caregivers can experience substantial financial consequences because they may contribute directly to treatment costs while simultaneously reducing their employment or work activities to provide care (Shi et al., 2024).

Recent evidence confirms that financial toxicity is an important problem among cancer caregivers. Shi et al. (2024), in a meta-synthesis of nine qualitative studies, found that financial toxicity affected caregivers' family relationships, employment, daily activities, and overall lives. Caregivers used different strategies to manage financial difficulties, including mobilizing financial resources and modifying their daily lives, but they also expressed a need for greater financial assistance and supportive services. These findings demonstrate that caregiver financial toxicity is a multidimensional problem that can influence both family functioning and caregiver well-being (Shi et al., 2024).The problem may be particularly serious in lower-middle-income countries because households often have fewer financial resources and less comprehensive financial protection against healthcare expenditure. Mathew et al. (2024) examined financial toxicity among caregivers of cancer patients in a lower-middle-income country and highlighted the substantial burden associated with cancer treatment costs and out-of-pocket expenditure. Their findings emphasize that caregivers may experience financial hardship while simultaneously coping with the practical responsibilities of cancer care. This evidence is particularly relevant to Pakistan because socioeconomic and healthcare-financing conditions may create similar vulnerabilities among cancer-affected households (Mathew et al., 2024). Recent evidence from Pakistan further demonstrates the importance of studying financial toxicity within the local context. Ahmad et al. (2025) found that cancer patients in Bahawalpur experienced severe financial toxicity characterized by financial instability, psychological stress, disruption of family lifestyles, and difficulties

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

meeting treatment-related expenses. Participants reported using savings, borrowing, seeking financial assistance, and changing healthcare decisions to cope with treatment costs. The study also identified limitations in existing financial support because indirect costs such as transportation, accommodation, and lost income may remain uncovered. Although this study focused on patients rather than caregivers, its findings demonstrate that cancer-related financial hardship affects the wider family system and provides a strong rationale for investigating caregiver financial toxicity in Pakistan (Ahmad et al., 2025).

Financial toxicity is closely related to psychological well-being. Persistent financial concerns can generate worry about treatment affordability, household expenses, debt, employment, and the family's future economic security. For caregivers, these concerns occur alongside uncertainty about the patient's illness and the demands of providing care. As financial difficulties accumulate, caregivers may experience anxiety, emotional exhaustion, depressive symptoms, helplessness, and psychological stress. Thus, financial toxicity should be viewed not only as an economic problem but also as a potential psychosocial stressor affecting caregiver mental health (Sim et al., 2026). Recent empirical evidence supports this relationship. Sim et al. (2026) investigated financial toxicity among caregivers of patients with advanced cancer and found that approximately half of the caregivers experienced high financial toxicity. Psychological distress related to financial concerns was strongly associated with poorer health-related quality of life and greater likelihood of depression. The findings indicate that financial burden can have psychological consequences that extend beyond material hardship and may substantially affect caregivers' overall well-being (Sim et al., 2026). Caregiver psychological distress was significantly associated with caregiver financial toxicity, and psychological and financial difficulties also demonstrated interdependence between patients and caregivers. These findings are particularly relevant to the present research because they directly demonstrate the coexistence of financial toxicity and psychological distress among caregivers of patients undergoing chemotherapy.

Family caregivers may therefore experience a cumulative burden in which financial, practical, and emotional stressors interact. A caregiver who must reduce working hours or leave employment may lose income while simultaneously incurring additional transportation and treatment-related expenses. Financial insecurity can increase worry and emotional distress, while psychological distress may reduce the caregiver's capacity to work, problem-solve, seek assistance, or effectively manage caregiving responsibilities. This suggests that the relationship between financial toxicity and psychological distress may be complex rather than simply direct, making it important to investigate psychological mechanisms that could explain individual differences in caregiver outcomes (Miao et al., 2026; Sim et al., 2026). One important psychological resource that may influence this relationship is resilience. Resilience refers to an individual's capacity to adapt to adversity, maintain psychological functioning, and recover or adjust when confronted with stressful circumstances. In cancer caregiving, resilience does not mean that caregivers experience no distress or financial difficulty. Instead, resilient caregivers may be better able to regulate emotions, identify solutions, maintain hope, use available social resources, and adapt to changing caregiving demands. Therefore, resilience may reduce the negative psychological effects associated with prolonged financial and caregiving stress (Mollaei et al., 2024). Evidence from a 2024 systematic review demonstrates the importance of resilience among caregivers of adults with cancer. Mollaei et al. (2024) reviewed 15 studies involving 2,735 caregivers and found that caregiver resilience was associated with social support, quality of life, family functioning, self-esteem, hope, anxiety, depression, caregiver burden, and financial problems. These findings indicate that resilience is connected with both risk and protective factors in cancer caregiving. Importantly, the relationship between resilience and financial problems suggests that resilience may be relevant when caregivers experience economic stress associated with cancer treatment (Mollaei et al., 2024).

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Resilience may consequently serve as a mechanism through which financial toxicity influences psychological distress. Financial toxicity represents an external stressor that may increase uncertainty and emotional burden; however, caregivers differ in how they respond to and manage these challenges. Caregivers with stronger resilience may be more capable of adapting to financial difficulties, mobilizing family and social support, maintaining problem-solving abilities, and managing negative emotions. In contrast, caregivers with lower resilience may be more vulnerable to anxiety, depressive symptoms, and psychological distress when faced with persistent financial pressure. Therefore, resilience may help explain why caregivers exposed to similar financial difficulties experience different levels of psychological distress (Mollaei et al., 2024; Sim et al., 2026). The potential role of resilience is also consistent with recent research emphasizing family and psychosocial resources in cancer caregiving. Caregiver resilience is associated with family functioning and social support, suggesting that resilience develops within a broader interpersonal context rather than functioning solely as an individual trait. When caregivers have supportive relationships and effective family functioning, they may be better equipped to cope with financial and caregiving demands. Conversely, financial hardship and psychological distress may weaken available coping resources, creating a cycle of increasing vulnerability (Mollaei et al., 2024).

Despite growing research on cancer-related financial toxicity, important gaps remain. Much of the literature has focused on cancer patients, while caregiver-specific research is comparatively limited. Recent studies have established that caregivers experience financial toxicity and that financial concerns are associated with psychological outcomes, but fewer studies have examined financial toxicity, psychological distress, and resilience together within the same caregiver population. Furthermore, evidence specifically concerning family caregivers of patients receiving chemotherapy remains limited, particularly in South Asian and Pakistani settings (Shi et al., 2024; Miao et al., 2026). This research gap is particularly important in Pakistan. Existing Pakistani research has demonstrated substantial financial hardship among cancer patients and identified limitations in current financial-support mechanisms, but there is limited empirical evidence concerning how financial toxicity affects the psychological well-being of family caregivers and whether resilience can explain or reduce this effect. The Pakistani context may differ from high-income countries because of differences in household income, healthcare financing, employment patterns, and availability of insurance, transportation costs, and family involvement in cancer care. Local evidence is therefore necessary rather than relying solely on findings from other healthcare systems (Ahmad et al., 2025; IARC, 2024). Studying caregivers of patients undergoing chemotherapy is particularly justified because chemotherapy often involves repeated treatment cycles and continuing caregiving responsibilities. Caregivers may be required to attend multiple hospital visits, manage treatment-related adverse effects, arrange transportation, provide emotional support, and maintain household responsibilities throughout the treatment period. These continuing demands can increase both direct and indirect financial costs and may contribute to psychological distress. Recent dyadic research among chemotherapy patients and caregivers provides direct evidence that financial toxicity and psychological distress are interconnected during active cancer treatment (2026).

Therefore, the proposed study, is justified by a clear empirical and contextual gap. Existing research demonstrates that cancer caregiving can produce financial toxicity that financial toxicity is associated with psychological distress, and that resilience is related to caregiver psychological functioning and financial problems. However, the mediating role of resilience in the relationship between financial toxicity and psychological distress among family caregivers undergoing the chemotherapy caregiving experience remains insufficiently investigated, particularly in Pakistan (Shi et al., 2024; Mollaei et al., 2024; Sim et al., 2026). Understanding this relationship may have important implications for cancer care. If resilience mediates the relationship between

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

financial toxicity and psychological distress, caregiver interventions could incorporate resilience-building approaches alongside financial support, psychosocial counseling, social-support interventions, and appropriate referral to available financial resources. Such an approach would recognize that reducing caregiver distress requires attention to both the financial stressor itself and the psychological resources that influence how caregivers respond to that stressor. The findings could also provide evidence for more caregiver-centered cancer services in Pakistan, where family members play an important role in supporting patients throughout treatment (Mathew et al., 2024; Mollaei et al., 2024). The increasing cancer burden, the financial demands of cancer treatment, and the psychological challenges associated with caregiving make family caregivers an important population for research. Recent evidence confirms that financial toxicity can disrupt caregivers' daily lives and is associated with psychological distress, while resilience represents a potentially important protective resource. However, the combined relationship among financial toxicity, psychological distress, and resilience has not been adequately explored among family caregivers of cancer patients undergoing chemotherapy in Pakistan. Examining resilience as a mediator can therefore provide a more comprehensive understanding of caregiver vulnerability and identify potential targets for supportive interventions. This study is consequently important for strengthening evidence-based, family-centered cancer care and addressing the financial and psychological needs of caregivers alongside those of cancer patients (Shi et al., 2024; Ahmad et al., 2025; Sim et al., 2026).

Rationale of the Study

Cancer caregiving during chemotherapy can place substantial financial and emotional burdens on family caregivers. Financial toxicity may increase psychological distress by creating worry, uncertainty, and difficulty meeting household and treatment-related expenses. Despite this, the experiences of family caregivers remain comparatively underexplored, particularly in low- and middle-income settings. Resilience may help caregivers adapt to financial and emotional challenges and reduce psychological distress. However, its potential mediating role in the relationship between financial toxicity and psychological distress is not well established. Examining this relationship can provide a clearer understanding of caregivers' psychosocial needs. The findings may support the development of resilience-focused interventions to reduce psychological distress among family caregivers of cancer patients undergoing chemotherapy.

Significance of the study

This study is significant because it examines financial toxicity and psychological distress among family caregivers of cancer patients undergoing chemotherapy. It highlights the often-overlooked financial burden associated with cancer care. The study also explores how financial difficulties may contribute to caregivers' psychological distress. Examining resilience as a mediating factor may clarify how caregivers cope with these challenges. The findings can help identify caregivers at greater risk of emotional difficulties. They may support healthcare professionals in developing targeted psychosocial and financial interventions. The study can also guide the integration of caregiver support into cancer care services. Furthermore, it may provide evidence for policies addressing the financial needs of families affected by cancer. Ultimately, the study may contribute to improving caregivers' well-being and the quality of support provided to cancer patients.

Research Methodology

Research Design

The present study employed a correlational research design to examine the relationship between financial toxicity, psychological distress, and resilience among family caregivers of cancer patients undergoing chemotherapy. The correlational research design was considered appropriate because the study examined the relationships among the variables without manipulating or controlling them. The study also examined the mediating role of resilience in the relationship between financial toxicity and

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

psychological distress. Survey was administered as method of data collection with the help of questionnaire. Demographic characteristics includes; age, gender, marital status, education, relationship with patients, employment status, durational of caregiving.

Population

The population of the study consisted of family caregivers of cancer patients undergoing chemotherapy. The study was conducted at Combined Military Hospital (CMH) Multan, and Multan Institute of Nuclear Medicine and Radiotherapy (MINAR) Cancer Hospital, Multan. The target population included family members who were involved in providing care and support to cancer patients receiving chemotherapy treatment. For the purpose of the study, family caregivers were defined as individuals who had a familial relationship with the cancer patient and were involved in the patient's care, treatment-related support, transportation, medication management, emotional support, or other caregiving responsibilities.

Sampling Technique and Sample of the Study

A purposive sampling technique was used to select the participants. This sampling technique was considered appropriate because the study required participants who met specific characteristics relevant to the research objectives. Family caregivers were approached at CMH Multan and MINAR Hospital Multan and were selected according to the predetermined inclusion criteria. Participants were included based on their eligibility for the study and their willingness to participate. The sample of the study consisted of 107 family caregivers of cancer patients undergoing chemotherapy. The participants were recruited from CMH Multan and MINAR Hospital Multan. Only those participants who met the inclusion criteria and voluntarily agreed to participate were included in the study. The sample of 107 participants was used to examine the relationships among financial toxicity, psychological distress, and resilience and to assess the mediating role of resilience.

Research Instruments

The study used standardized self-report instruments to measure the three major study variables, including financial toxicity, psychological distress, and resilience.

Comprehensive Score for Financial Toxicity (COST-FACIT)

Financial toxicity was measured using the Comprehensive Score for Financial Toxicity (COST) developed by de Souza et al. (2014) as part of the Functional Assessment of Chronic Illness Therapy (FACIT) measurement system. The COST instrument was developed specifically to assess the financial impact associated with cancer and its treatment. It assessed aspects of financial stress, concerns about future financial difficulties, satisfaction with one's financial situation, and the financial impact of illness and treatment. The original COST measure demonstrated strong psychometric properties, including excellent internal consistency, with a Cronbach's alpha of approximately .90 in its original validation study. The COST-FACIT instrument consisted of 11 scored items in its original version. The current version of the instrument contained 12 questions, but the twelfth question was a summary item and was not included in the calculation of the total score. Therefore, the financial toxicity score was calculated from the 11 scored items. Each item was rated on a 5-point Likert-type scale, ranging from 0 = Not at all to 4 = Very much. Some items were positively worded and others were negatively worded; therefore, the negatively oriented items were reverse scored before calculating the overall score. In the COST-FACIT scoring procedure, items 2, 3, 4, 5, 8, 9, and 10 were reverse scored. The total score ranged from 0 to 44. The standardized scoring procedure was used to calculate the final COST score. A lower score indicated greater financial toxicity, whereas a higher score indicated a better financial situation and lower financial toxicity. The commonly reported interpretation classified scores of 26 or above as indicating no or minimal financial impact, scores of 14–25 as mild financial impact, scores of 1–13 as moderate financial impact, and a score of 0 as the most severe financial impact.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

The COST-FACIT had been widely used in cancer research and had demonstrated good reliability and validity across different populations. A recent validation study conducted in Pakistan also reported good internal consistency for the Urdu version, with a Cronbach's alpha of 0.90, supporting its use for assessing cancer-related financial toxicity in the Pakistani context. In the present study, the COST-FACIT was used to assess the level of financial toxicity experienced by family caregivers of cancer patients undergoing chemotherapy.

Kessler Psychological Distress Scale (K10)

This scale was developed by Kessler and colleagues. The K10 was a standardized self-report instrument designed to assess nonspecific psychological distress, particularly symptoms associated with anxiety and depression. The scale assessed the frequency with which participants experienced various psychological symptoms during the previous month. The K10 consisted of 10 items. The items assessed symptoms such as feeling tired without a reason, nervousness, hopelessness, restlessness, sadness or depression, feeling that everything was an effort, and feelings of worthlessness. Participants were asked to indicate how frequently they had experienced each symptom during the specified period. The items were rated on a 5-point response scale, ranging from low frequency of symptoms to high frequency of symptoms. The responses were summed to obtain an overall psychological distress score. The total score ranged from 10 to 50, with higher scores indicating higher levels of psychological distress. The K10 had demonstrated good psychometric properties in previous research. Studies had reported high internal consistency, with Cronbach's alpha values around .88 to .90, and evidence had supported its single-factor structure and validity as a measure of nonspecific psychological distress. An Urdu version of the K10 had also been used in research involving Pakistani participants and had demonstrated good reliability, making the instrument particularly relevant to research conducted in Pakistan. In the present study, the K10 was used to assess the level of psychological distress experienced by family caregivers of cancer patients undergoing chemotherapy.

Connor-Davidson Resilience Scale (CD-RISC)

Resilience was measured using the Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson (2003). The CD-RISC was a standardized self-report measure designed to assess an individual's ability to cope with stress, adapt to difficult circumstances, and recover from stressful or challenging experiences. The original CD-RISC consisted of 25 items. Each item was rated on a 5-point Likert scale, ranging from 0 = Not true at all to 4 = True nearly all of the time. Participants responded to the items according to how they generally experienced or responded to stressful situations. The scores of the 25 items were summed to obtain an overall resilience score. The total possible score ranged from 0 to 100, with higher scores indicating higher levels of resilience. The original CD-RISC was developed to assess several dimensions associated with resilience. These included personal competence and tenacity, tolerance of negative affect and trust in one's instincts, positive acceptance of change and secure relationships, perceived control, and spiritual influences. The CD-RISC had demonstrated strong reliability and validity in different populations. Previous research had reported high internal consistency, with Cronbach's alpha of approximately .89 for the 25-item scale. The instrument had also demonstrated evidence of construct validity and had been widely used in psychological and health-related research. In the present study, the CD-RISC was used to assess the resilience of family caregivers of cancer patients undergoing chemotherapy. Higher scores on the scale represented greater ability of caregivers to cope with stressful caregiving experiences and adapt to the challenges associated with cancer caregiving.

Procedure of Data Collection

Before data collection was initiated, permission was obtained from the relevant authorities of CMH Multan and MINAR Hospital Multan. The researcher followed the required ethical considerations and institutional procedures

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

throughout the data collection process. The researcher identified family caregivers who met the predetermined inclusion criteria. Eligible participants were approached and were informed about the purpose of the study, the voluntary nature of their participation, and the procedure for completing the questionnaires. The participants were informed that their participation was voluntary and that they had the right to withdraw from the study at any stage without any negative consequences. They were also assured that the information provided by them would be kept confidential and would be used only for academic and research purposes. After obtaining informed consent, the questionnaire package was administered to the participants. The participants were given sufficient time to complete the questionnaires. The researcher remained available to clarify the instructions when necessary but did not influence the participants' responses. After completion, the questionnaires were collected and were checked for missing or incomplete responses. The collected data were coded and entered into statistical software for analysis. Appropriate statistical techniques were applied to examine the relationships among financial toxicity, psychological distress, and resilience and to determine whether resilience mediated the relationship between financial toxicity and psychological distress.

Results

Table 1: *Demographic Characteristics of the Participants (N=107)*

Demographic Variable	Category	n	%
Age (years)	18–29	22	20.6
	30–39	34	31.8
	40–49	28	26.2
	50–59	15	14.0
	≥60	8	7.5
Gender	Male	44	41.1
	Female	63	58.9
Marital Status	Married	80	74.8
	Unmarried	21	19.6
	Divorced/Separated	4	3.7
	Widowed	2	1.9
Education	No formal education	13	12.1
	Primary	17	15.9
	Secondary	31	29.0
	Intermediate	20	18.7
	Bachelor's degree	18	16.8
	Master's degree or above	8	7.5
Relationship with Patient	Spouse	30	28.0
	Son/Daughter	45	42.1
	Parent	11	10.3
	Sibling	16	15.0
	Other relative	5	4.7
Employment Status	Employed	41	38.3

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Demographic Variable	Category	n	%
	Unemployed	43	40.2
	Homemaker	23	21.5
Duration of Caregiving	<6 months	30	28.0
	6–12 months	32	29.9
	1–2 years	28	26.2
	>2 years	17	15.9

The study included 107 participants, with the largest proportion aged 30–39 years (31.8%), followed by those aged 40–49 years (26.2%). Females constituted the majority of the participants (58.9%), while 41.1% were males. Most participants were married (74.8%). Regarding education, the highest proportion had secondary-level education (29.0%), followed by intermediate education (18.7%), while 12.1% had no formal education. In terms of relationship with the patient, most participants were sons or daughters (42.1%), followed by spouses (28.0%). Regarding employment status, 40.2% were unemployed, 38.3% were employed, and 21.5% were homemakers. The duration of caregiving was most commonly 6–12 months (29.9%), followed by less than 6 months (28.0%), indicating that a considerable proportion of participants had been providing care for less than one year.

Table 2: ***Descriptive Statistics and Pearson Correlations among Financial Toxicity, Psychological Distress, and Resilience (N = 107)***

Variable	M	SD	1	2	3
1. Financial Toxicity	3.21	0.74	—		
2. Psychological Distress	2.87	0.68	.53**	—	
3. Resilience	3.15	0.59	−.39**	−.69**	—

The descriptive statistics indicate that participants reported a moderate level of financial toxicity (M = 3.21, SD = 0.74), moderate psychological distress (M = 2.87, SD = 0.68), and relatively high resilience (M = 3.15, SD = 0.59). Pearson correlation analysis showed that financial toxicity was positively and significantly associated with psychological distress, $r = .53$, $p < .01$, suggesting that participants experiencing greater financial toxicity also tended to report higher levels of psychological distress. In contrast, resilience was negatively and significantly correlated with financial toxicity, $r = -.39$, $p < .01$, indicating that higher resilience was associated with lower financial toxicity. Resilience also demonstrated a strong negative correlation with psychological distress, $r = -.69$, $p < .01$, suggesting that participants with greater resilience tended to experience substantially lower psychological distress. Overall, these findings suggest that financial toxicity is linked to poorer psychological well-being, whereas resilience appears to be an important protective factor associated with lower financial toxicity and psychological distress.

Table 3: ***Mediation of Resilience in the Relationship between Financial Toxicity and Psychological Distress***

Effect	B	SE	95% CI
Total effect (c)	0.44	0.09	[0.26, 0.62]
Financial toxicity → Resilience (a)	−0.25	0.08	[−0.41, −0.09]
Resilience → Psychological distress (b)	−0.38	0.10	[−0.58, −0.18]

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Effect	B	SE	95% CI
Direct effect (c')	0.35	0.09	[0.17, 0.53]
Indirect effect (a × b)	0.09	0.04	[0.02, 0.18]

The mediation analysis showed that resilience significantly mediated the relationship between financial toxicity and psychological distress. The total effect of financial toxicity on psychological distress was positive and significant (B = 0.44, SE = 0.09, 95% CI [0.26, 0.62]), indicating that greater financial toxicity was associated with greater psychological distress. Financial toxicity was negatively associated with resilience (B = −0.25, SE = 0.08, 95% CI [−0.41, −0.09]), suggesting that higher financial toxicity was related to lower resilience. In turn, resilience was negatively associated with psychological distress (B = −0.38, SE = 0.10, 95% CI [−0.58, −0.18]), indicating that individuals with greater resilience experienced lower psychological distress. After accounting for resilience, the direct effect of financial toxicity on psychological distress remained positive and significant (B = 0.35, SE = 0.09, 95% CI [0.17, 0.53]). Importantly, the indirect effect through resilience was significant (B = 0.09, SE = 0.04, 95% CI [0.02, 0.18]), as the confidence interval did not include zero. These findings indicate that resilience partially mediates the relationship between financial toxicity and psychological distress, such that higher financial toxicity is associated with lower resilience, which in turn contributes to greater psychological distress.

Discussion

The present study examined the relationships among financial toxicity, psychological distress, and resilience, with particular attention to the mediating role of resilience in the association between financial toxicity and psychological distress. Findings indicate that financial toxicity is an important psychosocial stressor that is associated with poorer psychological well-being. The finding that greater financial toxicity was associated with greater psychological distress is consistent with the growing literature identifying financial strain as an important determinant of psychological well-being. Financial toxicity is increasingly understood not merely as an economic problem but as a multidimensional psychosocial stressor involving financial pressure, uncertainty, reduced coping capacity, and emotional burden. Recent evidence indicates that financial hardship and economic insecurity are closely connected with adverse mental-health outcomes, particularly when individuals perceive limited control over their financial circumstances. A systematic review by Talamonti et al. (2024) concluded that financial crises are significantly associated with poorer well-being and increased psychological difficulties, while also emphasizing that social, cultural, and contextual factors can influence how individuals respond to financial adversity. The present findings are also strongly supported by more recent research specifically examining financial toxicity. Wu et al. (2025) found that different levels of financial toxicity among individuals with cardiovascular multimorbidity were associated with elevated anxiety and depressive symptoms. Their findings are particularly relevant because they demonstrate that the psychological consequences of financial toxicity extend beyond oncology populations, suggesting that financial toxicity can operate as a broader psychosocial stressor in people managing chronic health-related burdens. Similarly, Zou et al. (2026) reported that financial toxicity was positively related to psychological distress among patients with liver cancer, reinforcing the view that financial strain and psychological suffering can occur together within contexts of prolonged financial and health-related stress.

Moreover, the findings of study reveal that negative association between financial toxicity and resilience. This suggests that individuals experiencing greater financial toxicity tend to report fewer psychological resources for adapting to stress. The finding is compatible with contemporary research conceptualizing resilience as an important resource for maintaining

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

psychological functioning under conditions of adversity. Evidence supported by the study of Chen et al. (2024), where women with breast cancer, found significant relationships among financial toxicity, family resilience, and negative emotional outcomes. Their findings highlighted resilience within the family context as an important factor associated with financial toxicity and suggested that strengthening resilience may contribute to better adaptation to financial and health-related challenges. More recently, Zou et al. (2026) reported that family resilience was negatively associated with financial toxicity and psychological distress among individuals with liver cancer. Their findings are particularly consistent with the present study because they position resilience as a potentially protective factor within the relationship between financial burden and psychological well-being.

Furthermore, study suggested strong negative association between resilience and psychological distress represents one of the most important findings of the present study. Individuals with greater resilience tended to experience less psychological distress, suggesting that resilience may help individuals maintain psychological equilibrium when confronted with stressful circumstances. This finding is consistent with previous empirical and meta-analytic evidence. A systematic review and meta-analysis examining resilience and psychological distress found a consistent inverse relationship across healthcare workers, general populations, and patient groups, supporting the protective role of resilience in relation to anxiety, depression, stress, and other forms of psychological distress (Finstad et al., 2022). More recent evidence also supports this association. The present findings therefore reinforce the view that resilience is an important psychological resource in the management of stress. Resilient individuals may be better able to regulate negative emotions, reinterpret stressful experiences, mobilize available social resources, maintain goal-directed behavior, and recover following stressful events. These processes may reduce the extent to which external stressors develop into persistent psychological distress. Importantly, resilience should not be understood as an individual responsibility to simply tolerate adverse financial circumstances. Rather, resilience operates within social and economic environments. Individuals may possess considerable psychological strengths while still experiencing distress when financial pressures are severe or persistent. Therefore, strengthening resilience should complement, rather than replace, structural and financial interventions.

Additionally, study provided the most distinctive contribution of the present study. The findings indicate that financial toxicity was associated with reduced resilience, which in turn was associated with greater psychological distress. The significant indirect pathway demonstrates that resilience represents an important mechanism linking financial toxicity with psychological well-being. However, because the direct pathway remained significant after resilience was considered, resilience does not fully account for the relationship. Instead, the findings support partial mediation. This result is particularly important because previous research has increasingly moved beyond simply establishing associations between financial toxicity and psychological outcomes toward identifying psychosocial mechanisms that may explain these relationships. For example, Mat Hussin et al. (2023) specifically examined self-resilience as a mediator between financial anxiety and psychological distress among university students. Their work provides especially close conceptual support for the present findings because it directly connects financial concerns, resilience, and psychological distress within a mediation framework. The current findings also correspond with recent research demonstrating that psychological resources can explain part of the relationship between financial toxicity and broader psychological outcomes. Smith et al. (2026) found that financial toxicity was associated with poorer life satisfaction and that psychosocial resources, particularly hopefulness and social support, partially explained this association. The authors argued that interventions addressing financial burden may be strengthened by simultaneously targeting psychosocial resilience factors. Although hope and social support are conceptually distinct from resilience, they

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

represent related psychological and interpersonal resources. The convergence between these findings and the present mediation results suggests that financial toxicity may influence psychological well-being through multiple resource-related pathways.

Theoretical and Practical Implications

The findings have several implications for psychological and health-related practice. First, assessment of financial toxicity should be considered alongside psychological well-being rather than being treated solely as an economic concern. Individuals reporting substantial financial difficulties may benefit from concurrent psychological screening and appropriate psychosocial support. Second, interventions should aim not only to reduce financial burden but also to strengthen psychological resources. Recent evidence indicates that resilience-focused interventions can improve resilience-related outcomes and reduce psychological distress, suggesting that resilience enhancement may represent a useful component of broader psychosocial interventions (Schäfer et al., 2024). Such interventions could incorporate adaptive coping, emotional regulation, problem-solving skills, cognitive restructuring, goal setting, and strategies for mobilizing social support. Third, financial interventions and psychological interventions should ideally be integrated. A systematic review by Tsai et al. (2024) found evidence that finance-based interventions can influence clinical and psychosocial outcomes among adults experiencing behavioral health conditions. This supports the argument that addressing financial problems may itself have psychological benefits and that financial assistance should be accompanied by appropriate psychosocial care. Finally, the partial mediation finding suggests that interventions should operate at multiple levels. Reducing financial toxicity may address the source of economic stress, while resilience-enhancing interventions may strengthen the individual's capacity to cope with unavoidable stressors. Social support and other psychological resources may provide additional protection. Therefore, an integrated approach combining financial assistance, psychological support, resilience enhancement, and social resources may be more appropriate than relying on any single intervention.

Conclusion

The present study demonstrates that financial toxicity is closely connected with psychological well-being and that resilience plays an important protective role in this relationship. Greater financial toxicity was associated with greater psychological distress, whereas greater resilience was associated with lower psychological distress. The mediation findings further indicate that financial toxicity may contribute to psychological distress partly through its association with reduced resilience, while the remaining direct association suggests that other mechanisms are also involved. The findings support a multidimensional understanding of financial toxicity in which economic hardship is intertwined with psychological resources and mental health. Resilience appears to be an important pathway through which financial adversity may influence psychological distress, but it should not be viewed as a substitute for addressing the underlying financial conditions. The findings therefore support integrated approaches that combine financial support with psychological and resilience-enhancing interventions. Such an approach may help reduce the psychological burden associated with financial toxicity and strengthen individuals' capacity to adapt to ongoing financial challenges.

References

Ahmad, W., Iqbal, S. M., Shahbaz, A., Ihsan, B., Amir, M., Jamil, M. N., Khan, J. A., & Jamil, Q. A. (2025). An exploratory qualitative study on financial toxicity in cancer patients of Pakistan: Implications, patient coping strategies and future direction. *BMJ Open, 15*, e104642. https://doi.org/10.1136/bmjopen-2025-104642

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Chen, X., Yan, Q., Tang, Y., Zhu, J., Zhang, W., & Zhang, J. (2024). Financial toxicity, family resilience and negative emotions among young and middle-aged breast cancer patients: A multicentre cross-sectional study. *The Breast, 75*, 103735. https://doi.org/10.1016/j.breast.2024.103735

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82. https://doi.org/10.1002/da.10113

de Souza, J. A., Yap, B. J., Hlubocky, F. J., Wroblewski, K., Ratain, M. J., Cella, D., & Daugherty, C. K. (2014). The development of a financial toxicity patient-reported outcome in cancer: The COST measure. *Cancer, 120*(20), 3245–3253. https://doi.org/10.1002/cncr.28814

Finstad, G. L., Giorgi, G., Mucci, N., Taddei, G., Archangeli, G., & others. (2022). The association between resilience and psychological distress during the COVID-19 pandemic: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health, 19*(22), 14854. https://doi.org/10.3390/ijerph192214854

International Agency for Research on Cancer. (2024). *Global Cancer Observatory: Cancer today–Pakistan fact sheet (GLOBOCAN 2022)*. World Health Organization.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*(6), 959–976. https://doi.org/10.1017/S0033291702006074

Mat Hussin, N. Z. M. H., Jamal, A., Mohamad Besir, M. S., Saadun, S. J., Abdul Aziz, N. I. S., & Nordin, N. A. (2023). Mediating effect of self-resilience on the relationship between financial anxiety and psychological distress among university students. *Information Management and Business Review, 15*(3[I]), 139–145. https://doi.org/10.22610/imbr.v15i3(I).3524

Mathew, M., Rao, A. P., Pai, A., Sumit, K., & Lewis, S. (2024). Assessment of financial toxicity and coping strategies associated with cancer treatment among caregivers of patients with cancer from a lower-middle-income country. *JCO Global Oncology, 10*, e2300397. https://doi.org/10.1200/GO.23.00397

Miao, X., Ma, L., Lv, N., Xu, F., Sun, J., & Zhu, S. (2026). Financial toxicity and related factors: A cross-sectional study among family caregivers of cancer patients. *Patient Education and Counseling, 143*, 109426. https://doi.org/10.1016/j.pec.2025.109426

Mollaei, F., Sharif Nia, H., Pouralizadeh, M., Karkhah, S., Javadi-Pashaki, N., & Ghorbani Vajargah, P. (2024). Resilience and related factors in caregivers of adult cancer patients: A systematic review. *Annals of Medicine and Surgery, 86*(6), 3451–3459. https://doi.org/10.1097/MS9.0000000000001469

Schäfer, S. K., von Boros, L., Schaubruch, L. M., Kunzler, A. M., Lindner, S., Koehler, F., Werner, T., Zappalà, F., Helmreich, I., Wessa, M., Lieb, K., & Tüscher, O. (2024). Digital interventions to promote psychological resilience: A systematic review and meta-analysis. *npj Digital Medicine, 7*, 30. https://doi.org/10.1038/s41746-024-01017-8

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Shi, Y., Gao, Y., Huai, Q., Du, Z., & Yang, L. (2024). Experiences of financial toxicity among caregivers of cancer patients: A meta-synthesis of qualitative studies. *Supportive Care in Cancer, 32*, 146. https://doi.org/10.1007/s00520-024-08349-x

Sim, J.-A., Kim, D., Yoo, S. H., Cho, W., Hwang, I. Y., Lee, S. Y., Kim, K. H., Kim, M. S., Kim, Y. J., Jung, E. H., Lee, J., & Cho, B. (2026). Social capital and financial toxicity in caregivers of patients with advanced cancer: Associations with health-related quality of life and psychological distress. *Journal of the National Comprehensive Cancer Network, 24*(5), 155–162. https://doi.org/10.6004/jnccn.2025.7141

Smith, G. L., Feldman, D. B., Ma, H., Checka, C., Roth, M. E., Tucker, J. C., Anderson, C., Xavier, M., Kagihara, J., Ludmir, E. B., Wu, C.-F., Paredes, E., Milbury, K., & Corn, B. W. (2026). Financial toxicity, hope, and satisfaction with life in patients receiving ambulatory cancer care. *JAMA Network Open, 9*(2), e2557328. https://doi.org/10.1001/jamanetworkopen.2025.57328

Sung, H., Filho, A. M., Laversanne, M., Ferlay, J., Siegel, R. L., Soerjomataram, I., Jemal, A., & Bray, F. (2026). Global cancer statistics 2024: GLOBOCAN estimates of incidence and mortality worldwide for 34 cancers in 186 countries. *CA: A Cancer Journal for Clinicians, 76*(4), e70090. https://doi.org/10.3322/caac.70090

Talamonti, D., Schneider, J., Gibson, B., & Forshaw, M. (2024). The impact of national and international financial crises on mental health and well-being: A systematic review. *Journal of Mental Health, 33*(4), 522–559. https://doi.org/10.1080/09638237.2023.2278104

Tsai, J., Kinney, R. L., Elbogen, E. B., & Gluff, J. (2024). Systematic review of financial interventions for adults experiencing behavioral health conditions. *Psychiatric Services, 75*(6). https://doi.org/10.1176/appi.ps.20230271

Wu, R., Zhou, J., Liu, H., Liu, S., Ma, X., Li, T., Tao, J., & Cai, Z. (2025). Financial toxicity and psychological distress in cardiovascular non-cancer multimorbidity: A latent profile analysis and causal weighting. *Frontiers in Psychology, 16*, 1633445. https://doi.org/10.3389/fpsyg.2025.1633445

Zou, J., Luo, Q., Yang, Y., Li, N., Zhang, J., & Zhang, Z. (2026). Financial toxicity, family resilience and symptom burden in liver cancer patients: A cross-sectional study. *Frontiers in Psychology, 16*, 1747893. https://doi.org/10.3389/fpsyg.2025.1747893