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# Financial Toxicity in Cancer Care

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## ABSTRACT

Financial toxicity has become an increasingly important concern in contemporary cancer care. Although advances in oncology have improved survival and expanded treatment options, they have also increased the economic burden experienced by patients and families. Financial toxicity refers not only to direct medical expenses but also to indirect costs, loss of income, psychological distress, and reduced access to care. This literature review examines the concept, determinants, consequences, measurement, and policy implications of financial toxicity among cancer patients. Evidence suggests that financial hardship may affect treatment adherence, quality of life, mental health, family stability, and health equity. The burden is particularly relevant for vulnerable populations and health systems with limited financial protection. Addressing financial toxicity requires routine screening, transparent communication about costs, financial navigation, stronger insurance coverage, and equity-oriented cancer policy. Recognizing financial toxicity as part of cancer care quality is essential to patient-centered, sustainable oncology practice.

**Keywords:** cancer care; financial toxicity; health equity; treatment adherence; public health

## INTRODUCTION

Cancer care has changed substantially over the past few decades. Earlier diagnosis, improved surgical techniques, radiotherapy, systemic therapy, targeted agents, immunotherapy, and supportive oncology services have contributed to longer survival for many cancer patients. However, these advances have also created new challenges. One of the most important and increasingly recognized challenges is the financial burden associated with cancer diagnosis, treatment, follow-up, and survivorship. For many patients, cancer is not only a medical diagnosis but also a major economic event that affects employment, family income, savings, household stability, and long-term financial security.

The term financial toxicity was introduced to describe the harmful financial consequences of cancer care, in analogy with the physical toxicities of cancer treatment (Zafar & Abernethy, 2013). The concept highlights that financial hardship can become a treatment-related adverse effect, affecting patients' well-being, decision-making, and ability to continue recommended care. Unlike traditional discussions of health expenditure, financial toxicity emphasizes the patient experience: how costs are felt, managed, and internalized by individuals and families.

Financial toxicity is not limited to countries without universal health coverage. It has been documented in high-income, middle-income, and low-resource settings, although its mechanisms and severity vary across health systems (Donkor et al., 2022; Smith et al., 2019). Even insured patients may incur high out-of-pocket payments, transportation costs, lost income, medication expenses, diagnostic costs, and informal caregiving burdens. In health systems with partial reimbursement or fragmented cancer services, these pressures may be intensified.

The consequences of financial toxicity are clinically and socially significant. Patients may delay diagnostic procedures, postpone treatment, reduce medication use, miss follow-up appointments, or avoid recommended supportive services because of cost concerns (Zafar et al., 2013). Financial hardship has also been associated with psychological distress, lower quality of life, and poorer overall well-being (Altice et al., 2017; Smith et al., 2019). At the family level, cancer-related expenses may lead to debt, depletion of savings, reduced spending on basic needs, and long-term socioeconomic vulnerability.

From a public health perspective, financial toxicity is closely linked to health equity. The burden is not distributed equally. Patients with low income, unstable employment, limited insurance coverage, rural residence, dependent family members, or advanced disease may be at greater risk (Carrera et al., 2018; Donkor et al., 2022). Therefore, financial toxicity should not be viewed only as an individual financial problem. It reflects broader structural issues, including insurance design, reimbursement policy, availability of affordable medicines, geographic access to oncology services, and social protection.

This literature review examines the concept, determinants, consequences, measurement, and policy implications of financial toxicity in cancer care. It focuses on cancer patients across the disease trajectory and discusses financial toxicity as a multidimensional issue involving clinical practice, health systems, public health, and social justice.

## DEFINING FINANCIAL TOXICITY

Financial toxicity refers to the economic burden and distress experienced by patients as a result of cancer diagnosis and treatment. It includes both objective and subjective dimensions. Objective financial burden may involve direct medical costs, direct non-medical costs, and indirect costs. Subjective financial distress refers to the psychological and emotional strain caused by financial pressure, uncertainty, and perceived inability to afford care (de Souza et al., 2014; Zafar & Abernethy, 2013).

Direct medical costs include expenses related to consultations, diagnostic tests, surgery, chemotherapy, radiotherapy, immunotherapy, targeted therapy, hospitalization, medications, laboratory tests, and follow-up care. These costs may be fully, partially, or minimally covered depending on the health system. Even when major treatments are reimbursed, patients may still pay for additional medications, imaging, supportive drugs, rehabilitation, or private consultations.

Direct non-medical costs include transportation, accommodation, food during treatment visits, childcare, home modifications, and other practical expenses associated with accessing care. These costs are particularly important for patients who live far from oncology centers. In many countries, specialized cancer services are concentrated in urban areas, requiring patients from rural or regional communities to travel repeatedly for diagnosis, treatment, and follow-up.

Indirect costs include loss of income, reduced working hours, job loss, early retirement, caregiver work absence, and reduced productivity. These costs may be substantial, especially for working-age adults, self-employed patients, and households dependent on one income source. Cancer may also affect the employment of family caregivers, who often accompany patients to appointments, provide home care, and manage treatment logistics.

Financial toxicity, therefore, extends beyond the price of cancer drugs. It reflects the interaction between disease, treatment, household resources, insurance coverage, employment, geography, and social support. A patient may experience financial toxicity even if the clinical treatment itself is partially funded, because the total economic consequences of cancer may still be overwhelming.

A key feature of financial toxicity is its influence on care decisions. Patients may not always disclose financial distress to clinicians, yet they may silently alter their behavior by delaying appointments, avoiding medications, or refusing recommended interventions. For this reason, financial toxicity should be understood as both a patient-centered outcome and a potential barrier to effective cancer care.

## DETERMINANTS OF FINANCIAL TOXICITY

Financial toxicity is shaped by multiple determinants operating at the patient, disease, treatment, health-system, and policy levels. Understanding these determinants is essential for identifying patients at risk and designing effective interventions.

### Patient-Level Factors

Socioeconomic status is one of the most consistent determinants of financial toxicity. Patients with lower income, fewer savings, unstable employment, or limited family resources are more vulnerable to cancer-related financial hardship (Altice et al., 2017; Smith et al., 2019). For these patients, even moderate out-of-pocket expenses may represent a large proportion of household income.

Employment status is also important. Cancer diagnosis and treatment can disrupt work through hospitalization, treatment schedules, fatigue, psychological distress, or functional limitations. Patients may reduce working hours, take unpaid leave, change jobs, or stop working altogether. For self-employed individuals, informal workers, or those without paid sick leave, the economic consequences may be immediate and severe.

Age can influence financial vulnerability in different ways. Younger adults may face loss of income, childcare costs, education loans, and limited savings. Middle-aged adults may have dependent children or elderly relatives. Older adults may live on fixed incomes and face competing costs related to comorbidities, medications, and transportation. Therefore, financial toxicity can affect patients across the lifespan, although the mechanisms may differ.

Health literacy and financial literacy may also shape patient experience. Patients with limited understanding of insurance coverage, reimbursement rules, treatment costs, or available assistance programs may be less able to anticipate and manage financial risks. In addition, patients may feel uncomfortable discussing costs with clinicians, especially if they believe that financial concerns may compromise the quality of care they receive.

### Disease- and Treatment-Related Factors

Cancer type, stage, treatment intensity, and duration of care influence financial toxicity. Patients requiring multimodal treatment, prolonged systemic therapy, repeated imaging, hospitalization, or long-term follow-up may face higher cumulative costs. Advanced cancers may involve more frequent care episodes, emergency visits, complications, and supportive medications.

The increasing use of high-cost cancer medicines has intensified concerns about affordability. Targeted therapies and immunotherapies have improved outcomes for selected patients, but they may be associated with substantial costs for health systems and patients (Tran & Zafar, 2018). Even when such treatments are reimbursed, associated costs such as monitoring, management of adverse events, travel, and time away from work may remain significant.

Treatment-related adverse effects can also contribute indirectly to financial toxicity. Complications may require additional consultations, medications, hospital admissions, or rehabilitation. They may also reduce patients' ability to work or perform daily activities. Thus, clinical toxicity and financial toxicity may interact, reinforcing each other.

### Health-System Factors

Health-system design plays a central role in determining the severity of financial toxicity. Insurance coverage, reimbursement mechanisms, availability of public funding, price regulation, and access to essential medicines all influence patient costs. In systems where cancer care requires substantial out-of-pocket payment, financial toxicity may be more common and severe (Donkor et al., 2022).

Fragmentation of services can increase costs. Patients may need to visit multiple facilities for diagnosis, treatment, imaging, laboratory testing, and follow-up. Lack of coordination can lead to duplicated tests, unnecessary travel, delays, and additional administrative expenses. When oncology services are concentrated in large cities, regional patients may face repeated travel and accommodation costs.

Another important system-level factor is the availability of financial counseling or patient navigation. Many patients do not receive clear information about expected costs, reimbursement options, or social assistance. Without structured support, patients may discover costs late, after treatment has already begun, when financial stress is more difficult to manage.

### Policy-Level Factors

At the policy level, financial toxicity reflects the effectiveness of financial protection mechanisms. Universal health coverage, social insurance, national cancer control programs, essential medicines policies, and social welfare systems can reduce or intensify patient financial burden. Where cancer care is not fully integrated into public financing, patients may experience catastrophic health expenditure.

Policy decisions about drug pricing, reimbursement, diagnostic coverage, regional service distribution, and social benefits directly affect patients. Financial toxicity, therefore, cannot be addressed only at the level of individual clinician-patient communication. It requires broader policy attention to affordability, equity, and sustainability.

## CONSEQUENCES FOR PATIENTS AND FAMILIES

The consequences of financial toxicity are multidimensional. They affect clinical care, psychological well-being, family functioning, social stability, and long-term economic security. Financial toxicity is not simply a side issue; it may become central to the cancer experience.

### Clinical Consequences

Financial hardship can interfere with timely diagnosis and treatment. Patients may delay consultations, postpone diagnostic tests, or avoid specialist care because of anticipated costs. Once treatment begins, patients may miss appointments, reduce medication use, decline recommended therapies, or stop treatment prematurely due to financial pressure (Zafar et al., 2013).

Cost-related non-adherence is particularly concerning in oncology, where treatment timing and continuity may influence outcomes. If patients cannot afford medications for adverse effects, transportation to treatment centers, or follow-up imaging, clinical care may become incomplete. Financial toxicity can therefore undermine the effectiveness of otherwise evidence-based cancer treatment.

Some patients may also choose treatment options based on affordability rather than clinical preference. While shared decision-making should include patient values and preferences, decisions constrained by financial hardship raise ethical concerns. A patient's treatment choice may not reflect true preference but rather economic necessity.

### Psychological Consequences

Financial toxicity is strongly connected to emotional distress. Patients may experience anxiety, fear, shame, guilt, or helplessness related to treatment costs and family finances. The uncertainty of cancer is compounded by uncertainty about affordability. Patients may worry not only about survival but also about whether their illness will financially harm their family.

Financial distress can reduce perceived control and increase psychological burden. Patients may feel that they are forced to choose between health and household stability. This can be particularly difficult for parents, primary earners, or patients responsible for dependents. In such cases, cancer-related financial hardship may affect identity, dignity, and family roles.

Studies have shown associations between financial burden and poorer mental health, lower quality of life, and greater distress among cancer patients and survivors (Altice et al., 2017; Smith et al., 2019). Although financial toxicity is economic in origin, its consequences are deeply psychosocial.

### Family and Household Consequences

Cancer affects households, not only individuals. Family members may contribute financially, provide transportation, accompany patients to treatment, reduce working hours, or leave employment to provide care. Household savings may be depleted, assets may be sold, and families may borrow money to cover treatment-related expenses.

Financial toxicity may also change household priorities. Families may reduce spending on food, education, housing, preventive health care, or other basic needs. In some cases, the economic consequences of cancer may persist long after treatment ends, especially if debt accumulates or employment is lost.

The family impact of financial toxicity is particularly important in cultures and health systems where family members are expected to provide practical and financial support. In such contexts, cancer-related financial burden may become a shared family crisis.

## FINANCIAL TOXICITY AND TREATMENT ADHERENCE

Treatment adherence is one of the most clinically important pathways through which financial toxicity may affect cancer outcomes. Adherence in cancer care includes attending appointments, completing diagnostic tests, receiving treatment on schedule, taking oral medications correctly, managing side effects, and participating in follow-up surveillance.

Cancer treatment increasingly includes oral anticancer agents, long-term hormonal therapy, targeted therapy, and supportive medications. These treatments may shift responsibility from hospital-based administration to patient-managed adherence. When costs are high, patients may skip doses, delay refills, split tablets, or discontinue therapy without informing clinicians. This behavior may be invisible unless clinicians ask directly about affordability.

Financial toxicity may also affect adherence indirectly. Patients who cannot afford transportation may miss appointments. Patients who lose income may prioritize work over treatment visits. Patients who cannot afford supportive medications may experience unmanaged side effects, leading to treatment interruption. Patients who feel overwhelmed by bills may disengage from care.

Cost-related adherence problems are not always recognized in clinical practice. Patients may be reluctant to disclose financial difficulty because of embarrassment or fear of receiving lower-quality care. Clinicians may avoid cost discussions because they lack time, training, or knowledge of actual treatment costs. As a result, financial toxicity may remain hidden until it has already affected care.

Addressing adherence therefore requires more than reminding patients to follow treatment instructions. It requires identifying financial barriers, discussing cost concerns, connecting patients with assistance resources, and designing care pathways that reduce avoidable expenses.

## PSYCHOSOCIAL IMPACT OF FINANCIAL BURDEN

The psychosocial impact of financial toxicity deserves specific attention because cancer care is already emotionally demanding. Financial burden adds another layer of stress to diagnosis, treatment, and survivorship.

Patients may experience guilt if they believe their illness is financially harming their family. They may feel shame about needing financial assistance or borrowing money. Some patients may avoid discussing costs with relatives to protect them emotionally, while others may experience conflict within the household about treatment expenses.

Financial toxicity may also affect social participation. Patients may withdraw from social activities because of cost, fatigue, or embarrassment. Reduced income and increased expenses can limit normal life activities, contributing to isolation and reduced well-being. In survivorship, ongoing financial consequences may delay return to normal life even after treatment is completed.

For some patients, financial hardship changes the meaning of cancer treatment. Treatment may be perceived not only as a medical necessity but also as a financial threat. This can affect hope, trust, and decision-making. Patients may ask whether treatment is “worth it” not only in terms of survival benefit but also in terms of family financial survival.

Psychosocial support in oncology should therefore include attention to financial distress. Screening for anxiety and depression is important, but financial stressors should also be recognized as contributors to emotional suffering. Integrating social workers, financial navigators, psychologists, and patient support services can help address the broader psychosocial consequences of financial toxicity.

## HEALTH EQUITY AND VULNERABLE GROUPS

Financial toxicity is fundamentally an equity issue. It does not affect all patients equally. Patients who enter cancer care with fewer resources are more likely to experience severe consequences. This includes low-income patients, uninsured or underinsured patients, rural residents, unemployed individuals, informal workers, single parents, older adults on fixed incomes, and patients with dependent family members.

Rural patients may face additional travel and accommodation costs due to the geographic concentration of oncology services. Even if treatment is covered, repeated travel can become unaffordable. Patients from regions with limited specialist services may also experience diagnostic delays, fragmented care, and higher indirect costs.

Younger adults may be especially vulnerable because they may have limited savings, unstable employment, young children, or educational debt. They may also be in life stages where cancer disrupts career development, family planning, and financial independence. Older adults, by contrast, may face fixed incomes, comorbidities, and competing medication costs.

Gender may also influence financial toxicity. In some settings, women may have lower income, less employment security, or greater caregiving responsibilities. Cancer-related financial hardship may therefore intersect with gender inequality, family roles, and social expectations.

Health equity requires that financial toxicity be addressed proactively. If financial burden prevents some patients from accessing or completing treatment, then cancer care is not equitable, even if treatment is technically available. Equity-oriented oncology must consider affordability as part of access.

## FINANCIAL TOXICITY IN LOW- AND MIDDLE-RESOURCE SETTINGS

Financial toxicity is particularly relevant in low- and middle-income settings, where health insurance coverage may be incomplete, public funding may be limited, and out-of-pocket payments may account for a substantial share of health expenditures. A systematic review and meta-analysis of financial toxicity in low- and middle-income countries found that cancer diagnosis, treatment, and care impose a high financial burden on patients and families (Donkor et al., 2022). This evidence suggests that financial toxicity is not a marginal issue but a major barrier to cancer control.

In lower-resource settings, patients may face multiple overlapping barriers: late diagnosis, limited availability of specialized oncology services, high medication costs, travel expenses, limited reimbursement, and weak social protection. These barriers may lead to delayed treatment, incomplete care, and household impoverishment.

The financial burden may be especially severe when cancer services are centralized in major cities. Patients from regional areas may need to travel repeatedly for imaging, pathology, chemotherapy, radiotherapy, or specialist consultations. Transportation and accommodation costs may become a major part of the cancer care burden.

In addition, access to newer cancer medicines may be limited by reimbursement policies and high prices. Even when essential treatments are available, supportive medications, diagnostics, and follow-up care may create additional costs. For patients with limited income, these cumulative expenses can become catastrophic.

Financial toxicity in low- and middle-resource settings should be understood within the broader framework of universal health coverage. Cancer care policies must address not only service availability but also affordability. Expanding cancer treatment without adequate financial protection may improve theoretical access while leaving many patients unable to complete care.

## MEASUREMENT OF FINANCIAL TOXICITY

Measuring financial toxicity is essential for research, clinical practice, and policy. Without measurement, financial hardship remains hidden and difficult to address. Several approaches have been used to assess financial toxicity, including out-of-pocket expenditure, catastrophic health expenditure, employment loss, debt, insurance status, and patient-reported financial distress.

One of the most widely discussed patient-reported outcome measures is the Comprehensive Score for Financial Toxicity (COST), developed to assess financial distress among cancer patients (de Souza et al., 2014). The COST measure captures the subjective experience of financial burden, including worry, perceived control, and satisfaction with financial resources. Patient-reported measures are important because objective costs alone do not fully explain distress. Two patients with similar expenses may experience different levels of toxicity depending on income, savings, family support, and expectations.

Catastrophic health expenditure is another important concept, particularly in public health research. It usually refers to health spending that exceeds a defined proportion of household income or capacity to pay. This measure helps identify when medical expenses threaten household financial stability.

Employment outcomes are also relevant. Work interruptions, reduced income, job loss, and changes in caregiver employment should be considered part of the financial toxicity framework. These indirect costs may be especially important for working-age patients and families.

Routine clinical screening for financial distress remains limited in many settings. However, incorporating simple questions into oncology practice may help identify patients at risk. For example, clinicians or care teams may ask whether treatment costs, transportation, medications, or work disruption are causing difficulty. Screening should be linked to referral pathways; failing to offer support when financial distress is identified may be insufficient.

## STRATEGIES TO REDUCE FINANCIAL TOXICITY

Reducing financial toxicity requires interventions at multiple levels: clinical, institutional, health-system, and policy. No single intervention is sufficient because financial toxicity has multiple causes.

### Clinical-Level Strategies

At the clinical level, oncology teams should recognize financial toxicity as part of patient-centered care. Cost-related concerns should be discussed respectfully and without judgment. Clinicians do not need to know every exact cost, but they should be willing to ask whether affordability is a concern and refer patients to appropriate support.

Shared decision-making can include discussion of financial implications when clinically appropriate. Patients should not be forced to choose inferior care because of cost, but they should be informed about available options, expected benefits, potential toxicities, and financial consequences. Transparent communication can reduce uncertainty and help patients plan.

Routine screening for financial distress may help identify patients early. Screening can be conducted by nurses, social workers, patient navigators, or financial counselors. Patients at high risk can then be referred for assistance with insurance, reimbursement, medication support programs, transportation resources, or social services.

### Institutional Strategies

Cancer centers can reduce financial toxicity by developing financial navigation services. Financial navigators help patients understand coverage, estimate costs, apply for assistance programs, and coordinate reimbursement. Evidence suggests that financial navigation is increasingly recognized as a practical response to financial distress in oncology care (Yezefski et al., 2018).

Institutions can also improve scheduling and coordination to reduce unnecessary visits. Combining appointments, avoiding duplicated tests, and coordinating imaging, laboratory work, and consultations can reduce travel and time costs. Telemedicine may help some patients, particularly for follow-up visits, although it should not replace necessary physical examination or treatment.

Patient education materials should include information about possible costs and available resources. Many patients do not know what financial support exists until they are already in crisis. Early information can improve preparedness.

### Health-System Strategies

At the health-system level, reducing financial toxicity requires stronger insurance coverage, reimbursement of essential cancer services, and protection from catastrophic expenditure. Coverage should include not only anticancer treatment but also diagnostics, monitoring, supportive medications, rehabilitation, and follow-up care.

Access to essential cancer medicines is a major priority. Policies that promote rational medicine selection, price negotiation, generic and biosimilar availability, and transparent reimbursement can reduce patient burden. Health technology assessment may help systems prioritize treatments that provide meaningful clinical benefit relative to cost.

Regional access to cancer services is also important. Strengthening regional diagnostic and treatment capacity can reduce travel-related financial burden. Where full decentralization is not feasible, patient transportation support and accommodation programs may reduce inequities.

### Policy-Level Strategies

At the policy level, financial toxicity should be integrated into national cancer control planning. Cancer policies often focus on prevention, screening, diagnosis, and treatment availability, but affordability should be equally emphasized. A treatment that exists but is unaffordable is not truly accessible.

Governments and health authorities can monitor catastrophic health expenditure among cancer patients, evaluate out-of-pocket spending, and identify vulnerable groups. Such data can guide reimbursement reform, social assistance, and targeted support.

Social protection policies are also important. Paid sick leave, disability benefits, caregiver support, employment protection, and anti-discrimination policies can reduce indirect financial harm. Cancer care policy should therefore connect with broader labor and social welfare policy.

## IMPLICATIONS FOR ONCOLOGY PRACTICE AND PUBLIC HEALTH

Financial toxicity has important implications for oncology practice. Clinicians should understand that financial hardship can influence treatment decisions, adherence, emotional well-being, and family stability. Asking about financial concerns should become a normal part of comprehensive cancer care, similar to asking about symptoms, treatment side effects, or psychosocial distress.

However, clinicians alone cannot solve financial toxicity. Oncology practice must be supported by institutional systems, financial counseling, social work, patient navigation, and policy-level financial protection. A patient-centered cancer care model should include attention to affordability and access.

From a public health perspective, financial toxicity reflects the social determinants of cancer outcomes. Income, employment, geography, insurance, education, and social support all shape the cancer experience. Therefore, cancer control strategies should address not only biological disease but also the economic conditions that influence care.

Financial toxicity also raises ethical questions. If patients cannot access or complete effective treatment because of cost, then the health system fails to deliver equitable care. Equity in oncology requires that patients are not financially destroyed by seeking treatment. Protecting patients from financial harm should be considered part of quality cancer care.

For countries with developing or transitional health systems, financial toxicity is especially important. Expanding oncology services should be accompanied by policies that protect households from catastrophic expenditure. Otherwise, improvements in cancer treatment availability may not translate into real access for all patients.

## CONCLUSION

Financial toxicity is an important and often under-recognized consequence of cancer care. It includes direct medical expenses, non-medical costs, loss of income, psychological distress, and household economic instability. Its effects extend beyond finances, influencing treatment adherence, quality of life, mental health, family functioning, and health equity.

The burden of financial toxicity is shaped by patient-level vulnerability, treatment intensity, health-system design, insurance coverage, and broader social policy. Vulnerable populations, including low-income patients, rural residents, uninsured or underinsured individuals, and families with limited resources, are at particular risk.

Addressing financial toxicity requires coordinated action. Oncology teams should screen for financial distress and communicate openly about affordability. Cancer centers should provide financial navigation and social support. Health systems should strengthen reimbursement, regional access, and essential medicine availability. Policymakers should integrate financial protection into cancer control planning.

As cancer care continues to advance, affordability must remain central to patient-centered oncology. Effective treatment is not sufficient if patients cannot access it, complete it, or survive its economic consequences. Recognizing financial toxicity as a core dimension of cancer care quality is essential for more equitable, humane, and sustainable oncology practice.

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