



## The effect of using financial and accounting techniques On reducing financial toxicity

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### ABSTRACT

Financial toxicity is a problem that endangers the individual and social health of human beings and imposes many costs on individuals and governments. Given that financial toxicity has so far been studied only in medical sciences and no financial solution has been identified for it, this study tries to investigate the possibility of using financial and accounting techniques to reduce financial toxicity among patients in order to introduce and expand the use of financial and accounting techniques to take effective action in health accounting. The research method is a combination of grounded theory and structural equations method and theoretical sampling has been used in 2019 and 2020. Data collection sources were conducted through in-depth and semi-structured interviews, participatory and non-participatory observation, personal experiences, respondents' memories, existing literature, and the researcher's personal reflections. To evaluate the goodness of the model fit, in the qualitative part, three methods of peer-debriefing, member checking, and triangulation techniques, and in the quantitative part, Chi-square, GFI, CFI, and RMSEA indices were used to evaluate the structural equations model. The results show that the use of financial and accounting techniques (including budgeting, cost management, mental accounting and financial therapy) by financial therapists and financial advisors can be effective in reducing the rate of financial toxicity. This research is the first research that expands the dimensions of financial methods and techniques in financial toxicity.

**Keywords:** Financial toxicity. Financial therapy. Mental accounting. Moneygrams. Oncology. Financial Genogram. Grounded Theory



## 1. Introduction

### 1.1. Background of the Study

Financial toxicity is an emerging term in medicine, especially in the field of oncology, to describe patients who suffer from mental, psychological and physical problems due to the high cost of medical care and therefore their treatment process is not done properly. In other words, **financial toxicity is:**

Mental distress caused by the objective financial burden of cancer-related medical expenses, as a result of which, in addition to the adverse effects and related stresses, the patient's treatment process is not completed and therefore the patient suffers more damage. And has side effects such as bankruptcy, job loss, reduced income, and so on. Lack of health insurance or additional medical care costs not covered by health insurance generally creates financial problems for individuals, leading to patient debt and bankruptcy (Smith et al, 2017).

#### Conceptual model of financial toxicity:

The origin of the term financial toxicity originated from the medical sciences, which, depending on its nature and environmental issues, were linked to financial and psychological concepts. In addition, since 2009, concepts and issues with a combination of finance and psychology have been introduced in a new form called financial therapy, and with this new approach, they have addressed the issues and mental disorders that arise from financial issues.

Therefore, in this study, financial and accounting techniques that play a role in reducing financial

toxicity are identified. Because directly, one of the three important sides of the financial toxicity triangle is related to financial issues. Also, its psychological dimension is a mixture of psychological topics and mental accounting topics. Therefore, the concept of financial therapy is obtained by combining the first and second sides of this triangle.

The field of financial therapy considers the treatment of some of the most important psychological problems in terms of financial issues and the type of attitude towards it and believes that in many cases, empowering the client by providing financial solutions can cure many psychological problems.

The important thing to keep in mind is that a financial therapy approach does not mean providing financial assistance to meet people's financial needs. Rather, financial therapy means empowering people with the help of financial counseling and combining it with the field of psychological motivation, so that the people involved can overcome financial problems to prevent these problems from occurring as a basis for other psychological problems. Due to the successful functions of financial therapy in the field of psychology, financial therapy can offer new horizons by entering the field of medical treatment for the treatment of financial toxicity, so that in order to fulfill the social responsibility of financial accounting profession to help the development of health accounting.

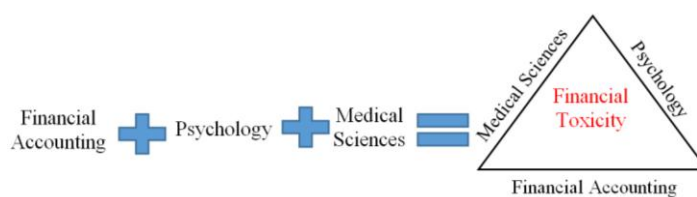


Figure 1- Equation of financial toxicity

#### Money Disorders:

Money disorders are destructive, persistent, predictable, and often difficult patterns of financial behavior that cause stress, anxiety, emotional distress, and disruption in important areas of a person's life (Klontz et al, 2015). According to the American Psychological Association, the number one cause of

stress in people's lives is money, which is higher than other factors such as work, health and children (APA, 2014). Money disorders include money laundering, gambling, financial infidelity, financial dependence, and financial distress.

### **Financial Genogram:**

In general, a genogram is a family diagram and a visual representation of influential members to summarize complex relationships (Watts and Shrader, 1998). The financial genogram is used to identify root issues that may affect financial behaviors. Because the financial behaviors of parents and family members affect the response of individuals to financial difficulties. In fact, a genogram is a graphical representation of the heritage of beliefs and feelings that parents transmit directly and indirectly to their children and grandchildren (Nelson et al, 2015).

Financial genogram, as a measurement and clinical tool, provides a broad and panoramic view of past financial issues and how family members interact and have a financial history (McGoldrick et al, 2008).

### **Moneygrams:**

Moneygrams are money messages that people receive as children from their parents and family. Beliefs rooted in parents' childhood teachings will play a key role in healing. Parents mainly have monetary and savings attitudes (Clarke et al, 2005; Churchill and Moschis, 1979), attitudes toward loans (Norvilitis et al, 2006).

The right approach to financial issues and reforming the mental structure with the help of mental accounting can be very effective in helping to improve people's mental health and reduce financial toxicity.

### **Mental accounting:**

Mental accounting was first introduced in 1980 by Richard Thaler, who wrote in his paper that people codify, classify, and evaluate economic consequences in their minds. Humans manipulate losses and gains in their minds and in some way mentally edit financial events, thereby classifying, evaluating, and tracking their financial activities (Thaler, 1999).

As Thaler points out, financial events are specifically edited to classify, evaluate, and track their financial activities. General financial toxicity has four dimensions: financial, psychology, medicine and mental accounting, and the two dimensions of finance and psychology are closely related to the fourth dimension, namely the concepts of mental accounting. Because how to spend financial resources, classification of income and how to earn that income, are all among the concepts that are addressed in mental accounting. The economic consequences of our approach to money are explained by mental accounting. Different people's views on financial

issues play an effective role in creating and exacerbating financial toxicity.

On the other hand, financial therapy is a field that tries to identify the financial roots in other fields so that it can use financial techniques and other concepts related to the human mind (such as mental accounting, monetary disorders, moneygrams, etc.), Offer new horizons and solutions (Archuleta et al, 2012).

Accordingly, in this study, we have defined financial therapy as a more general definition that can explain all aspects of financial therapy as follows.

"Financial therapy is a field that tries to identify the financial roots in all fields that are somehow related to the mental, mental and physical health of individuals in order to provide treatment for the patient by solving financial problems."

## **1.2. Statement of the Problem**

Data from the American healthcare system show that cancer is the second leading cause of death, and that cancer patients pay the most for surgery and medication compared to other chronic diseases (American Cancer Society, 2018) and have to deal with years of problems. The economic consequences of high treatment costs (Shankaran et al, 2017) also show that one-third of Americans are exposed to financial toxicity (Zafar, 2016).

Financial toxicity is a problem that endangers the personal and social health of individuals and imposes huge financial costs on individuals and ultimately on governments. The dimensions of this issue are much wider due to less health insurance coverage and lower general level of financial knowledge in developing and less developed countries.

In this regard, financial therapy as a new field, can provide useful solutions by considering all aspects of financial toxicity (individual and social), along with the field of medical sciences and mental accounting concepts.

Given that financial toxicity has not been studied from a financial perspective, and also the field of definition of financial toxicity has been considered only in medical sciences and financial researchers have not entered it, this study tries to enter this section, Identify the effect of using financial and accounting techniques on financial toxicity.

### 1.2.1 Research Questions

Can financial advisers and planners reduce financial toxicity by using financial and accounting techniques?

### 1.3. Objectives of the Study

The aim of this study was to identify financial and accounting techniques that can reduce the rate of financial toxicity in cancer patients. The study and explanation of this issue is through the use of financial therapy and mental accounting approaches to be able to take an effective step towards health accounting and social responsibilities of the accounting profession to society.

This research is the first of its kind in this field and it seems that the results of this research will open new horizons in the field of treatment for costly diseases and will link financial sciences to the field of health more than before.

## 2. Literature Review

Since the end of 2013, some medical articles in the world have dealt with the topic of financial toxicity in cancer patients. They mentioned in the process of expensive cancer treatments.

### 2.1. An overview to financial toxicity

In 2019, Santacroce and Kneipp, in "A Conceptual Model of Financial Toxicity in Pediatric Oncology" In the United States, attempts were made to discover a conceptual framework for financial toxicity in pediatric oncology to guide nurses' work. The framework is based on the findings of Scott Ramsey's research, according to the National Cancer Institute, to describe relationships between previous factors, cancer diagnosis, financial pressures, and health outcomes for adult cancer patients.

The results of this study showed that poor family financial conditions cause biological reactions and stressful financial behaviors that can affect the results of medical treatments and the quality of life of children and their mothers. The resulting financial toxicity can lead to financial coping behaviors such as refusal of treatment, health care delays, and bankruptcy, which can lead to poorer medical and financial outcomes among patients and caregivers.

Skrepnek et al. In 2018 conducted a study entitled "Death or Debt? National estimates of financial toxicity in persons with newly diagnosed cancer"

aimed at assessing the impact of cancer on the devaluation and persistence of patient debt in the United States on 9.5 million people it was performed over the age of 50 who had recently been diagnosed with cancer. The increase and persistence of cancer in these individuals were related to socioeconomic factors (age, income, family size, gender) and clinical characteristics (smoking, hypertension, diabetes, lung disease).

In addition, it found that people with cancer in the United States lost 42.4% of their assets two years after diagnosis and lost an average of \$ 92,000. Also, after 4 years, 38.2% of patients went financially bankrupt. As a result, a significant proportion of them have been exposed to financial toxicity, and this financial toxicity has had a significant impact on patients' level of access to medical care as well as their treatment outcomes.

Liang and Huh conducted a study in 2018 at the School of Obstetrics and Gynecology at the University of Alabama, USA, entitled "Financial toxicity - An overlooked side effect." Studies show that people with cancer spend up to 25% of their annual income on cancer treatment. Also, more than 60% of bankruptcies are due to medical reasons, and cancer patients are 2.5 times more likely to go bankrupt than non-cancer patients.

In 2017, a study in Australia was conducted by Gordon et al. In the article "Financial toxicity: a potential side effect of prostate cancer treatment among Australian men". The study was conducted to identify the extent, nature and variability of common economic pressures from prostate cancer in Australian men. The study included an online survey of 289 men with prostate cancer. The results of this study showed that the diagnosis and treatment of prostate cancer causes changes in employment status and household finances. The resulting financial toxicity forced patients to retire early between 4 and 5 years. Also, 20% of people had high levels of anxiety and high levels of distress and sadness.

In 2016, a study by Zafar in the United States. He noted in his article "Financial Toxicity of Cancer Care: It is Time to Intervene" that evidence shows that a significant proportion of cancer patients are affected by treatment-related financial losses. Zafar's studies show that there is a strong correlation between severe financial depression and mortality. Severe financial depression can affect health, quality of life, and quality of care, thus increasing the risk of death.

Also, given that medical debt is growing for some people with cancer, these lasting effects can be catastrophic. In this study, he described the financial damage associated with cancer treatment. His results suggest that long-term solutions should focus on changing policies to lower the price of inflexible drugs and promote innovative new insurance models, and that patients should be equipped with cost-related health literacy.

To be aware of potential costs and resources. The results also show that one-third of Americans are at risk of financial toxicity because of the cost of medical care, and that half of all cancer patients are elderly people who are not covered by insurance.

Although millions of people are now covered by the Affordable Care Act (ACA) or the Medical Care Plan (Obamacare), there is little evidence that cancer care is cheaper than it was before the law was passed. Zafar's studies show that there is a strong link between severe financial depression and mortality. Severe financial depression can affect health, quality of life, and quality of care, thus increasing the risk of death.

## **2.2. An overview to financial therapy**

In 2015, Archuleta et al. conducted a study called "Solution Focused Financial Therapy: A Brief Report of a Pilot Study". According to the researchers in this article, the fields of financial consulting, financial planning and financial therapy face a conceptual and empirical lack of clinical and laboratory evidence-based research. To this end, in their research, they use a pilot study to try to reduce this gap to test the implementation of a solution-based financial intervention approach in which solution-based treatment techniques in a counseling framework.

They use finance. This article reports the findings of a clinical intervention study on university students (N = 8) that introduces financial issues related to budgeting, investing, and debt repayment. Data were collected before treatment, after treatment, and three months later. The results showed that by using the solution-oriented financial therapy approach, the psychological well-being and financial behaviors of the participants were improved and their financial distress was reduced. In general, a person who has suffered from financial toxicity cannot act according to the doctor's instructions and the treatment process is not done well and the patient, while not recovering,

also suffers from other physical, mental and psychological illnesses.

In 2014, Furnham et al. conducted a study called moneygrams: Recalled Childhood Memories about Money and Adult Money Pathology. In this study, 512 adults completed two questionnaires. A questionnaire specifically designed to study childhood memories of parents' money beliefs and behaviors passed on to children (i.e., moneygrams). The second questionnaire set a criterion for "money pathology" (Forman, 1987). This monetary message questionnaire was based on clinical subjects and individualistic studies on monetary pathology. About one-fifth of the items showed significant gender differences. Factor analysis revealed a clear factor, "monetary secrecy", which was associated with higher levels of damage to spending money in adulthood. In women, but not in men, higher family monetary secrecy was significantly associated with monetary compensation and embezzlement injuries. This study pursues three goals:

(a) To devise a moneygram measure that assesses parentally-directed money messages imparted in childhood, (b) to look at the relationships between moneygrams and money pathology, and (c) to explore gender differences in both moneygram and money pathology.

Monetary Injury Scale Findings Confirm Previous Findings: Women score higher than men in injury, and specifically in the subscales of spending with worry and spending with carelessness; older people show less harm than younger people; and harm is usually more related to leftist political beliefs. Thus, the findings are consistent with previous studies of gender differences in monetary habits, with the result that women are more concerned about money than men. Findings show that the more annoyed, obsessive, and irrational people are about money, the less likely they are to make money, and family monetary secrecy in childhood is associated with monetary damage in adulthood. Also, obsessive spenders and savers often refer to childhood experiences as their stimuli.

## **3. Methodology**

### **3.1. Research method**

In this research, the mixed method (qualitative and quantitative) has been used. In this research, grounded theory method has been used. The present study tries to identify financial and accounting techniques that

can be effective in reducing financial mortality through the systematic approach of Strauss and Corbin through the systematic data analysis approach. Be effective in the field of health as well.

The grounded theory method is an inductive research method and because there is limited knowledge in the field of financial toxicity and there is no comprehensive theory in the field of treatment methods, this method has been used to formulate the theory. While previous researches have been done in a different cultural and economic context than in Iran, which due to the special conditions of Iran's economy and its different culture, it is necessary to conduct a new research in this field. Because Iran is classified in the group of developing countries, it has different characteristics from developed countries in terms of economy, income, medical sciences and medical expenses.

Qualitative methods can be used to discover aspects of life that we do not know or know about but want to gain a new understanding of, or to obtain subtle details of phenomena such as feeling. Application. Data analysis in grounded theory is done through open, axial and selective coding. In grounded theory, data is regularly collected and analyzed through a research process (Strauss and Corbin, 1998).

In this method of data collection, analysis and final theory are very closely related to each other. Therefore, the two main features of grounded theory are: 1. the development of theory takes place through data. 2. It has a repetitive and recursive approach. This means that data collection and analysis continue sequentially and are referenced frequently during research (Bryman and Bell, 2011).

There are four approaches to this theorizing. The classical approach of Glaser (1992), the systematic approach of Strauss and Corbin (1990), the structuralism approach of Charmaz (2000) and the feminist approach of Wuest (1995). Of course, Wuest herself argues that feminism is not a method of inquiry but an angle of view that can be applied to traditional methods. Wuest has combined and explained each of the traditional methods of grounded theory with a feminist approach.

Among the methods mentioned, researchers usually use the systematic approach of Corbin and Strauss. In general, this theory converts data from information sources into codes, common codes into categories, and then categories into a theory. The

resulting theory is considered a theory that is inductively derived from the study of a phenomenon.

The main procedures of grounded theory are:

**Open coding:** naming concepts that represent definite events or other examples of phenomena.

**Axial coding:** Procedures through which data is compared in a continuous process to determine the link between categories after open coding.

**Selective coding:** refers to the process of selecting a central category, systematically linking it to other categories, evaluating their relationships, and inserting categories that need further validation and development.

Based on these procedures, first the research question or questions are raised and then the data is collected and analyzed to answer the questions. First, the key points of the data are counted and for each point, a code is assigned.

Then, by comparing the codes, several codes that refer to a common aspect of the phenomenon under study are called "concepts", and finally several concepts, one category and several categories are manifested in the form of a theory.

Finally, the research findings were tested using a quantitative method through LISREL software based on the structural equation method.

### 3.2. Sampling

In qualitative research, there are different methods for sampling that in grounded theory, theoretical sampling method is used. Theoretical sampling is a method of collecting data based on concepts and topics that arise from the data.

Theoretical sampling is non-random and purposeful. In theoretical sampling, the researcher must allow the analysis to guide the research process. Sampling will continue until saturated. Theoretical saturation is a process that is related to two stages in grounded theory. The first step is the data encryption step and the second step is the data set step (Bryman and Bell, 2011).

Accordingly, for interviews and exchange of views, individuals in 4 groups including 1. Planners and financial professionals. 2. Surgeons specializing in cancer and high-risk diseases 3. Psychologists 4. Cancer patients were interviewed until we reached the stage of theoretical saturation.

From planners and financial specialists to explain the role of mental accounting and various financial

factors, from surgeons and physicians with expertise to have the necessary experience in dealing with patients with financial toxicity, from psychologists to gain sufficient knowledge of human spirits and how Decisions and mental models of people in the face of problems, in-depth and semi-structured interviews were conducted with cancer patients in order to gain a correct understanding of how they make decisions.

### 3.3. Data Source, Collection and Method of Analysis

In this research, information collection sources have been done through in-depth and semi-structured interviews, participatory and non-participatory observation, personal experiences, respondents' memories, existing literature and personal reflections of the researcher. The number of samples continued until the response to the interviews reached saturation, with a total of 22 people.

### 3.4. Goodness of fit

The following three methods were used to evaluate the qualitative fit of the grounded theory method.

- 1) **Peer-Debriefing** (Review of non-participating colleague and quality consultant):

For this purpose, 1 financial specialist, 1 psychologist and 1 internal medicine specialist as a quality consultant who were not part of the participants, were asked to codify and from the beginning of the research extract the concepts and categories to review that, finally, the desired reforms were agreed upon and changes were made.

- 2) **Member Checking** (Review of research participants and experts):

One of the specialist physicians, whose opinions were also used in this study, was asked to review the data analysis process of the grounded theory from beginning to end, and after reviewing, the results were confirmed.

- 3) **Triangulation** (Using the trinity and triangulation technique):

In this research, the trinity technique was used in the sections of data sources, methods and perspectives. Thus, in the data collection, triangulation was performed and the information of surgeons, patients with cancer and other diseases, internal physicians and other related people were used. In the methods section, in-depth and semi-structured interview method, participatory observation and researcher experiences were used. Different perspectives such as medical, financial and psychological perspectives were also used.

Also, for quantitative evaluation of the model, the following indicators were used in structural equations:

- 1) Chi-square (Chi-square/df)
- 2) GFI (Goodness of fit index)
- 3) CFI (Comparative Fit Index)
- 4) RMSEA (Root Mean Square Error of Approximation)

## 4. Results

### 4.1. Demographic Characteristics of Respondents

As shows in table 4-1, most respondents are men (72.7%).

Table 4-1- Frequency Table for demographic characteristics of respondents

Job	Frequency	Percent	Valid Percent	Cumulative Percent
Surgeons	9	40.9%	40.9%	40.9%
Financial and accounting specialists	5	22.7%	22.7%	63.6%
Psychologists	3	13.6%	13.6%	77.3%
Cancer patients	5	22.7%	22.7%	100.0%
Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Woman	6	27.3%	27.3%	27.3%
Man	16	72.7%	72.7%	100.0%
Time engaged in the business	Frequency	Percent	Valid Percent	Cumulative Percent
5-10 years	2	11.8%	11.8%	11.8%
10-15 years	6	35.3%	35.3%	47.1%
more than 10 years	9	52.9%	52.9%	100.0%

**4.2.Review the results of the research question**

Determining the effect of using financial and accounting techniques by financial advisors and planners in reducing financial toxicity. Based on the results of this research, by conducting grounded theory analyzes on the opinions and information collected from financial and accounting specialists and

psychologists, physicians and cancer patients, the possibility of using financial and accounting techniques by financial consultants and planners in The reduction of financial toxicity was identified which was obtained by using the coding method of concepts and categories, which are classified into 4 categories according to Table 4-2.

**Table 4-2 - The use of financial and accounting techniques by financial consultants and planners in order to reduce financial toxicity based on the method of coding concepts and categories**

Category	concept	code
Cost management	C <sub>1</sub> : Offer referrals to medical centers that offer similar services at more reasonable prices.	Q <sub>1</sub> : Many health centers offer the same services due to the type of ownership (private, public, charitable, etc.), but have different approved rates.
		Q <sub>2</sub> : Many medical centers have different approved rates based on the task and purpose of the activity (diagnostic therapy, educational therapy, etc.) by providing the same services.
	C <sub>2</sub> :reduction in costs	Q <sub>3</sub> : Avoid expensive medical offers to people who cannot afford it
		Q <sub>4</sub> : Involve the patient more in financial decisions to choose the appropriate treatment that does not lead to financial toxicity
budgeting	C <sub>3</sub> :Adjustment costs and revenues	Q <sub>5</sub> : Planning to reduce financial contributions for patients with financial toxicity
	C <sub>4</sub> :Estimated payment capacity	Q <sub>6</sub> : At the beginning of treatment, ask questions about the amount of assets and savings of patients to prevent financial toxicity.
		Q <sub>7</sub> : Get information from the patient about the amount of income and ability to receive financial assistance from others.
C <sub>5</sub> :Insurance coverage (cost shield)	Q <sub>8</sub> : Ask questions about the type of health insurance, the amount of insurance coverage and the costs that a person must pay out of pocket.	
Mental accounting	C <sub>6</sub> :Incorrect classification	Q <sub>9</sub> : Diagnosis and correction of financial survival preferences over treatment in some patients
		Q <sub>10</sub> : Spending according to previous forecasts and not having the necessary flexibility in spending.
	C <sub>7</sub> :Incorrect and unbalanced moneygrams	Q <sub>11</sub> : Feeling uncomfortable when spending
		Q <sub>12</sub> : Some patients' perceptions of the time function of money (future needed)
Financial therapy	C <sub>8</sub> :Money disorders	Q <sub>13</sub> : Some patients have a wealth disorder
		Q <sub>14</sub> : Failure to complete the treatment process for patients with financial dependency disorder
	C <sub>9</sub> :Abnormal financial genogram	Q <sub>15</sub> : Some patients lack financial trust in the doctor
		Q <sub>16</sub> : Some patients believe that the cost of treatment is fatal
		Q <sub>17</sub> : Some patients suffer from financial hardship due to mismanagement of credit cards and unnecessary and unnecessary purchases.

According to the obtained categories, the use of financial and accounting techniques by financial consultants and therapists in reducing the rate of financial toxicity is in the form of 4 categories, which are described below.

**4.2.1. Cost management:**

One of the effective ways to reduce financial toxicity is cost management through consumption management and cost reduction.

**4.2.1.1. Choosing the optimal medical center**

Studies have shown that many medical centers due to the type of ownership (private, public, charitable,



etc.) and based on the task and purpose of the activity (diagnostic therapy, educational therapy, etc.) although provide the same services but have different approved rates.

Therefore, financial experts suggested that in order to manage costs and reduce medical costs, patients can be made aware that they can reduce their costs by visiting medical centers that offer similar services at more reasonable prices. .

In fact, in addition to personal financial planning for patients, the financial therapist should be able to make suggestions about going to health centers that offer similar services at more reasonable prices, using different insurance services, and any suggestions that reduce the patient. The cost of treatment and health promotion helps offer. This proposal is consistent with the results of other research (Shankaran, 2018).

#### 4.2.1.2. Reduce costs

Doctors have confirmed that they usually recommend better methods in their prescriptions, which are usually the most expensive methods. But in many cases, although those methods are expensive, they do not have a significant return on other methods in terms of the price difference.

Therefore, physicians can prescribe drugs and treatment methods to choose their treatment methods and prescriptions, according to the patient's financial situation. The patient can also be informed about various treatment methods to be involved in financial decisions. According to financial experts and psychologists, if the patient himself is involved in the decision-making process, he will be faithful to the treatment in the future and will feel better. In general, in reducing costs in the pre-treatment phase, the following can be mentioned:

- 1) Avoid expensive medical offers to people who cannot afford it.
- 2) Involve the patient more in financial decisions to choose the appropriate treatment that does not lead to financial toxicity.

#### 4.2.2. Budgeting

One way to prevent or reduce financial toxicity is to use budgeting techniques. Estimating cash inflows and outflows can be very effective in estimating future income and potential expenses. For this purpose, the following methods can be used.

- 1) Adjusting Expenses and Revenues:  
By adjusting expenses and incomes, proper planning can be done to reduce the financial

consequences of patients who have suffered from financial toxicity.

- 2) Estimation of payment capacity:

It is better to prepare a questionnaire at the beginning of treatment. A questionnaire that includes questions about the amount of assets, the amount of savings, the amount of income and the ability to receive financial assistance from others. It seems that with this knowledge of the patient's financial capacity, financial toxicity can be prevented.

- 3) Insurance coverage (cost shield):

The financial therapist can ask questions about the type of health insurance, the amount of insurance coverage and the costs that a person has to pay out of pocket to estimate the risk of financial toxicity.

#### 4.2.3. Mental accounting

Many of the problems that patients face in the financial debate are related to their mental accounting. The results of this study show that the correction of patients' mental accounting in two dimensions of incorrect classification and unbalanced financial moneygrams can reduce financial toxicity.

- 1) Incorrect classification:

Some patients prefer to store the cash and non-cash assets they have acquired so far and not spend it on treatment. They feel very bad when they start the treatment process and impose costs. Because they do not accept the function of money in medical affairs and it is usually considered correct for storage or other items such as food and clothing.

In general, financial survival has a higher priority than treatment. By identifying weaknesses in how accounts are classified and how they are used, financial therapists can take effective steps to reduce patients' financial toxicity.

Many people also experience financial anxiety when faced with unforeseen expenses. Spending according to previous predictions and not having the necessary flexibility in spending can exacerbate financial toxicity.

- 2) Incorrect and unbalanced moneygrams:

Money messages that people receive as children from their parents and family become beliefs rooted in childhood teachings, and these financial beliefs play a key role in

treating people with financial toxicity. Will have. For example, attitudes toward money and savings (Clarke et al., 2005; Churchill and Moschis, 1979) and attitudes toward lending (Norvilitis et al., 2006) are such beliefs.

Feeling uneasy when spending money is another issue related to moneygrams and monetary messages that have their roots in childhood. Also, some patients' perceptions about the time function of money are mainly related to the future and believe that it is necessary in the future and should not be consumed as much as possible.

Therefore, incorrect and unbalanced money laundering is another issue that the financial therapist should consider in discussing financial toxicity.

**4.2.4. Financial therapy**

Treatment of financial problems and disorders that arise from financial problems, such as financial disorders and financial genograms, are among the issues related to financial therapy.

1) Monetary Disorders:

In many people, there are destructive, persistent, predictable, and often difficult financial behavior patterns that cause stress, anxiety, emotional distress, and disruption in important areas of their lives (Klontz et al, 2015). Many people who suffer from financial toxicity have monetary disorders. Disorders such as wealth and financial dependence. Despite these monetary disorders, they are not able to complete their treatment process.

2) Abnormal financial genogram:

The financial genogram is used to identify root issues that may affect financial behaviors. Because the financial behaviors of parents, family members affect the response of individuals to financial difficulties. In fact, a genogram is a legacy of beliefs and feelings that parents transmit directly and indirectly to their children and grandchildren (Nelson et al, 2015).

Some patients 'lack of financial trust in doctors, some patients' belief that the cost of treatment is fatal, is one of the issues related to people's financial genogram. Also, some patients have suffered from financial hardship due to mismanagement of credit cards and non-targeted and unnecessary purchases. This false habit of making unnecessary purchases can

be rooted in people's financial genograms. Therefore, one of the tools that financial therapists have against financial toxicity is to study and use the tools of financial genealogy of individuals.

**4.3. Quantitative evaluation of the model**

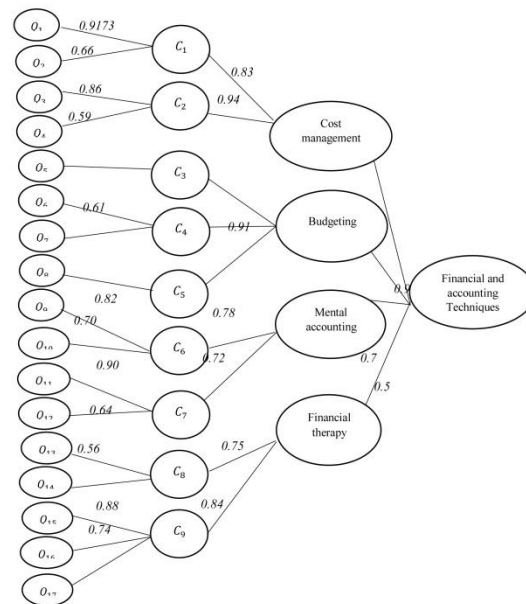
According to Table 4-3, the results of tests related to the goodness indicators of the model fit (using LISREL software), show that the structural equations of the research are appropriate.

**Table 4-3- evaluation of Fitness**

Index	Value	Threshold
Chi-square	88	
df	73	
Chi-square/df	1.2	<3
GFI	0.95	>0.9
CFI	0.9	>0.9
RMSEA	0.097	<0.10

**4.4. Model coefficients**

The coefficients of the indices based on the information obtained from the Grand Theory method with the Strauss and Corbin approach in the structural equation model are shown in Figure 4-4-1.



**Figure 4-4-1- coefficients of Structural equation model**

## 5. Discussion & Conclusions

### 5.1. Summary of research results

According to the research results, the use of financial and accounting techniques (including budgeting, cost management, mental accounting and financial therapy) by financial therapists and consultants can be effective in reducing the rate of financial toxicity.

Therefore, financial accounting and financial therapy have the potential to use their concepts and techniques, by adjusting costs and revenues, estimating solvency, considering insurance coverage, modifying the classification of accounts in subjective accounting, moneygrams review and financial genograms and monetary disorders play an important role in reducing patients' financial toxicity.

### 5.2. Suggestions for future research

Based on the research results, it is suggested to use financial and accounting techniques (including budgeting, cost management, mental accounting and financial therapy) in order to reduce the rate of financial toxicity and by measuring financial toxicity as pre-test and post-test, determine the effectiveness of each financial technique.

### 5.3. Research Limitations

This study was conducted with a limited statistical sample (22 people) in Tehran province. Obviously, if the scope of research had been developed with a much larger number in other provinces, the results of the research would have been more generalizable. Also, the very limited opportunity of specialists and the very high cost of interviewing specialist physicians is another factor that slows down the research process. In addition, many patients with financial toxicity are reluctant to be interviewed due to their current problems and concerns.

Finally, due to the fact that the final parts of the study coincided with the outbreak of coronary heart disease, the process of interviews and the necessary arrangements for the relevant sessions were slow and disrupted.

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