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## **Impact of financial burden on psychological wellbeing among relatives of cancer patients**

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**Abstract**--Patients with cancer in a family member can create situational crises that can lead to emotional distress throughout the family and may impair the family's ability to support the patient. To assess the financial burdens in family of patients with cancer and find out the relationship between psychological wellbeing and sociodemographic characteristics of relatives such as age, gender, level of education and the occupational status. A cross-sectional study conducted among 102 participants: the relatives of patients with cancer using the valid financial burden scale; 15 participants participated in the pilot study prior to the main study. The study carried out in the Euphrates Centre for Carcinogenic Tumours in Al-Najaf City, Iraq. This study indicates that there is a severe impact of financial burden of patients with cancer on their family members at the mean score of 45.94 (52.9%). Participated in the current study were male (68.2%), 28-37 years old (38.8%), married (64.7%), and (29.4%) of them were unemployed. The result indicated that family members of patients with cancer experienced a severe financial burden as a result of their patients' illnesses. This raising awareness to allocate additional funds for oncology centres to provide sufficient healthcare services and support the collaboration between mental centres to provide highly mental services for the families.

**Keywords**--financial burden, psychological wellbeing, patients with cancer.

## Introduction

Cancer is a fatal disease in which malignant tumours and neoplasms develop out of control and cause significant organ damage. Cancer has been identified as the leading cause of death worldwide. According to estimates, there were 14.9 million new cancer diagnoses in 2013 and 8.2 million cancer-related deaths, resulting in a significant burden of cancer around DALYs worldwide (196.3 million). Cancer has a substantial financial impact (Hoang et al., 2017). The official statistics on malignant injuries released by the Iraqi Cancer Council showed an increase in cancer cases in Iraq between the years (1991 and 2016), with a total of 5,720 injuries and a rate of (31.05 percent) in 1991, and a total of (25,556) in 2016. In 2016, the rate was (67.4%) per 100,000 people. According to the most recent statistics issued by the Cancer Council in Iraq, the governorate of Baghdad, followed by Basra, has the highest number of afflicted people, while Muthanna have the lowest number. Lung cancer is the most frequent cancer and the leading cause of death among them, with extremely high mortality rates (salman, 2019).

For both the patient and his or her family, receiving a cancer diagnosis is a life-changing event. A cancer diagnosis has a bigger impact on family members than it does on patients, according to multiple studies (Girgis et al., 2013). Higher deductibles, co-insurance, co-payments, and general out-of-pocket spending requirements have resulted in a greater financial burden for patients and their families as cost-sharing between patients and payers has increased. This shift in payment structure, when combined with greater pharmaceutical and treatment costs as well as the possibility of reduced work productivity (and hence loss of income), creates a distinct stress known as financial toxicity for many cancer patients (Thom & Benedict, 2019). Receiving a cancer diagnosis can have significant financial consequences for a patient. The degree of financial stress is influenced by a number of factors, including household income, socioeconomic status, insurance status, and disease severity. There are a number of factors that contribute to cancer-related financial stress. Chemotherapy, radiation, and surgery, as well as home health care and travel to treatment centres, can all cost a lot of money (Fenn et al., 2014).

Psychological well-being is defined as the ability to make responsible decisions, manage stress effectively, communicate effectively, parent effectively, and emotionally care for oneself and others. Furthermore, psychological well-being is frequently defined as a combination of positive affective states such as pleasure and optimal performance in individual and social life (Sayied & Ahmed, 2017). A large amount of research has found correlations between a variety of indicators of financial distress and mental illness. Although the causation of such connections is occasionally questioned, longitudinal data analysis suggest that debt and financial stress are linked to psychological disorders. Similarly, anxiety and mental illness have been related to consumer debt, mortgage debt, arrears, repossession, and eviction. Many of these research, however, concentrate primarily on psychological suffering, focusing on the extremes rather than the complete spectrum (Taylor et al., 2011). Thus, determining the problem is encouraged because it is believed that increasing the financial burden will affect the psychological wellbeing of relatives with cancer patients. The aim of this study was to discover and evaluate the effect of the financial burden on the

psychological well-being of relatives of cancer patients, and to reduce the impact of stress resulting from the financial burden to create a better psychological life.

## **Methods**

A cross-sectional design has been used in the present study addressing the effect of the financial burden on the psychological well-being of relatives of cancer patients, at Euphrates Centre for Cancerous Tumours for the period of September 15th, 2021 to March 15th, 2022. The study recruited participants from Euphrates Centre for Carcinogenic Tumours in Al-Najaf City, Iraq, which provides daily care for various cancers. In the Middle Euphrates Cancer Centre, there are 125 nurses working on the three-shift system, and there are twelve specialized doctors who provide medical services to patients. The centre is located in Najaf, Kufa district, near Al-Sadr Teaching Hospital, as the government support is only and there is no civil support that enhances the services provided in the same centre. In 2015, Al-Najaf City created the Euphrates Centre for Carcinogenic Tumours. The Centre has (45) beds for the treatment of cancer patients of different types. It serves patients with diagnostic and treatment services, such as chemotherapy. The investigation was undertaken at the Euphrates Centre for Carcinogenic Tumour to acquire data that was both thorough and valid. A non-probability, purposive sample consists of (102) participants: the relatives of patients with cancer and 15 participants participated in the pilot study prior to the main study at Euphrates Centre for Carcinogenic Tumours in Al-Najaf City, Iraq. The study population consisted of the relatives of patients with cancer who met the study inclusion criteria of male and female and being consented to participate in the study and relatives of cancer patients treated at the Euphrates Centre for Carcinogenic Tumours. Relatives were excluded if they are family members who have already participated in the pilot study and unwilling to participate in this study or refused to participate in filling in the research forms. Relatives were assessed through financial burden questionnaire and the patients' socio-demographic sheet. The financial burden Scale consists of 20 items measured on a (5) point Likert-type scale of: 1= (strongly agree), 2= (agree), 3= (undecided), 4= (disagree) and 5= (strongly disagree). The total score is computed by summing scores of all items. The socio-demographic sheet includes relatives' age, gender, and marital status, monthly income, residency, occupation and patients' age, gender, duration of injury, stage of illness, and degree of kinship with the patient.

## **Data collection**

Data are collected through the use of the study questionnaires; the structured interview technique and the observation technique as means of data collection. Each interview takes approximately 15-25 minutes to be completed. After getting authorization from the Euphrates Centre for Carcinogenic Tumours and securing a consent of participation from the family of cancer patients prior to the interview, data was collected. In the morning, the majority of the relatives were at the Euphrates Centre for Carcinogenic Tumours. The information was acquired by the researcher in relation to reception, and it was purposefully chosen (each relative asked for their agreement before gathering the information).

### **Validity and reliability**

Validity refers to the degree to which an instrument measures what it is supposed to be measuring (Polit & Hungler). Validity is one of the main concerns with research and help reducing the probability of making type 2 error. The content and face validity of the interventional program and the study instruments is determined by panel (2) experts from the College of Nursing/University of Baghdad, two experts from the College of Nursing/University of AL-Ameed, one expert from the University of Babylon, College of Nursing, one expert from Karbala University/College of Nursing, three experts from AL-Kufa University, and one expert from the College of Education for Girls/University of Kufa. These experts were given a copy of the study instruments to assess and evaluate for content clarity and suitability for achieving the study objectives. On the basis of the experts' opinions and recommendations, modifications and alterations were done. The instrument's reliability was verified using the Alpha Cronbach's test (Alpha Correlation Coefficient); the internal consistency approach was utilized to determine the instrument's reliability.

### **Ethical considerations**

The study was approved by the Ministry of Health (MOH) and Health Directorate of Al-Najaf, Ministry of Planning (Central Statistics Authority) for the acceptance of the questionnaire draft, and the Human Research Ethics Committee at the College of Nursing/University of Baghdad. Each patient gave their written informed consent to the study. Before patients participated in the study, the researcher described the goal of the study to them. In addition, the researcher Informed the participants that their participation in the study is entirely voluntary, and he guaranteed them that the data would be kept private and secure throughout and after the study, as stated on the subject's agreement sheet.

### **Data analysis**

A complete data was obtained from 102 participants: the relatives of patients with cancer. The questionnaires were analysed using IBM SPSS version 24 and Microsoft Excel (2010). Descriptive statistics were conducted to analyse relatives and patients' sociodemographic data and financial burden. For sociodemographic data, continuous variables were presented as means and standard deviation, and categorical variables by frequencies and percentages. Paired sample t-test and analysis of variance (ANOVA) were used to determine the association between the impact of financial burden and psychological wellbeing of relatives of cancer patient.

### **Results**

#### **Participants' characteristics**

Participants' characteristics are presented in Table 1. The results show that 38.8% of the participants are in the age group (28-37) years. Male are dominant by (68.2%) compared to female. According to age of patients, 31.8 % of patients

were over 51 years old. Regarding to marital status, the majority of participant (64.7%) were married. It was revealed that (58.8%) live in urban regions; and (54.1%) of the study sample have a monthly somehow sufficient income. Further, the study shows that (38.8%) of the participants were unemployed. Regarding the duration of the illness, 29.4 % of them are within the period (13 – 24) months. A 55.3 % of the participants were sick males and were greater than that of women. Most of the participants were at stage three with (38.8%). The highest degree of consanguinity is the first degree (62.4%).

### Assessment of financial burdens

Table 2 shows that the overall financial burden among relatives of patients with cancer was severe at the mean score of 45.9.

### Psychological wellbeing and Socio -demographic characteristics

Table 3 shows the association between psychological wellbeing and sociodemographic characteristics that non-significant. The table reveals that there was an association with most variables, except with (marital status, age of patient and duration of illness) and there were a significant association between psychological wellbeing and sociodemographic characteristics.

Table 1  
Demographic characteristics of study sample

Demographic data	Rating and interval	Frequency	Percent
Age	18 - 27	27	31.8
	28 - 37	33	38.8
	38 - 47	16	18.8
	48 - 57	5	5.9
	58 - 67	3	3.5
	68+	1	1.2
	Mean ± SD		34.98± 10.55
Gender	Male	58	68.2
	Female	27	31.8
Marital Status	Married	55	64.7
	Single	24	28.2
	Divorced	6	7.1
Residency	Rural	35	41.2
	Urban	50	58.8
Monthly income	Not enough	24	28.2
	Some enough	46	54.1
	Enough	15	17.6
Occupation	Government employee	25	29.4
	Private sector employee	5	5.9
	Unemployed	33	38.8
	Jobless	8	9.4
	Housewife	14	16.5

Table 2  
Overall assessment of financial burdens

Levels	Frequency	Percent	Mean of sum score	Overall Assessment
Mild	4	4.7		
Moderate	36	42.4	45.94	severe
Severe	45	52.9		

Sever at sum of score ranged (20 – 46.67), moderate at sum of score ranged (46.68– 73.35), mild at sum of score ranged (73.36-100), cut off point=26.67.

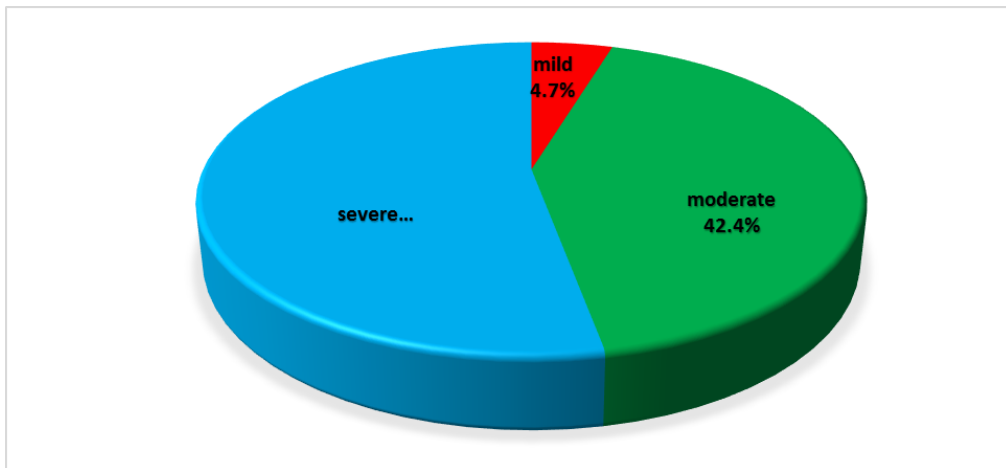


Figure 1. Overall assessment of financial burdens

Table 3  
Relationship between psychological wellbeing and their Socio -demographic characteristics

Demographic data	Rating and interval	Overall psychological well-being			Value X <sup>2</sup>	Df.	P-value
		Poor	Fair	Good			
Age	18-27	0	25	2	15.41	10	0.11
	28-37	6	27	0			
	38-47	2	13	1			
	48-57	1	4	0			
	58-67	2	1	0			
	68+	0	1	0			
Gender	Male	10	47	1	4.43	2	0.10
	Female	1	24	2			
Occupation	Government employee	2	20	3	9.14	8	0.33
	Private sector employee	1	4	0			
	Unemployed	6	27	0			
	Jobless	1	7	0			
	Housewife	1	13	0			

Residency	Rural	5	29	1	0.16	2	.922
	Urban	6	42	2			
Marital status	Married	8	45	2	15.97	4	0.003*
	Single	0	24	0			
	Divorce	3	2	1			
Degree of kinship	First degree	11	39	3	10.12	6	0.12
	Second degree	0	26	0			
	Third degree	0	3	0			
	Fourth degree	0	3	0			
Monthly income	Not enough	4	20	0	7.57	4	0.10
	Some enough	7	38	1			
	Enough	0	13	2			

## Discussion

According to the findings of this study, the majority of the Relatives examined are between the ages of 28 and 37. This result is consistent with the results of Siegel et al., (1991) This shows that the majority of the studied subjects had an average age. According to the study's findings, the great majority of The Relatives (68.2%) were all males. This finding is supported by Ozdogan et al.,( 2004) who discovered that the vast majority of the study participants were male (61%). Another study was done by Test, ( 2004) highlights that male caregivers made up more than half of the total (55%). This means that most relatives of cancer patients are men, as they are more responsible and able to spend the money. In terms of marital status, the majority of cancer patients' relatives are married couples, which is suitable in our society, where both males and females appear to marry young. In terms of residence, the majority of cancer patients' relatives in the sample lives in urban areas, which is one of the most important factors in increasing cancer risk. As previously said, one of the most important factors in increasing cancer risk is the environment. In Iraq, a significant increase in environmental pollution as a result of chemical variables impacting air, such as industrial pollutants and explosions, as well as war relics, contributes to becoming the most significant risk factor for cancer, particularly in large cities. This finding is consistent with Denton et al. (2017), who found that 62.9 percent of lung cancer patients lived in urban areas, whereas 37.1 percent lived in rural areas.

In terms of monthly income, the majority of the relatives of cancer patients in the sample have a acceptable monthly income. Although monthly income may play a role in providing care for cancer patients, poverty is an essential factor that may increase the chance of developing cancer and delay early identification due to a family's financial constraints. Abbas et al., (2018) support this conclusion. According to the studies, as the prevalence of cancer rises in low- and middle-income countries, the global risk of cancer and cancer-related death rises. In terms of employment status, the current study's findings reveal that the majority of the respondents were unemployed and free work. This result is supported by Test ( 2004) who found that 39% of the people in the study were professional. According to the findings of this study, the majority of the patients surveyed are in the age group of (51 and up) years. This finding is in line with that of Abbas et

al., (2018), who found that the majority of the participants studied were (>50) years old. Furthermore, according to Weiss et al. (2017), the majority of the study participants old people. Another study Tong et al., (2016) discovered that the bulk of the sample was between the ages of 51 and 60 years old. According to the findings of the study, the vast majority of the patients were all males. This finding is supported by Denton et al. (2017) who discovered that the vast majority of the study participants were men. Another study (Yousuf Zafar et al., 2015) found that the majority of the participants were men. The vast majority of patients were in the third stage, according to this research. According to Abu-Helalah et al., (2014), 12.8 %, 45.5 %, 34.6 %, and 7.1 % of patients had stage I, II, III, and IV cancer, respectively. The highest degree of consanguinity is the first degree (62.4%). This results is supports by Cameron et al., (2002) who found that the most common of relatives are first degree relatives. Another study shows that more than (70%) are first degree relatives of cancer patients (Beydag, 2012).

### **Financial burdens**

According to the result indicate that the study sample experience severe financial burden as a result of illness. These findings are along with study performed by Northfield et al., (2010), who revealed that the financial burden on relatives of cancer patient was severe. Tsigaropoulos et al., (2009) published a study found that the financial burden (51.3%) was severe. Cancer is a chronic disease and there are rarely cures, as it results in severe symptoms and signs that require very expensive interventions and treatments.

### **Psychological wellbeing according to marital status, age of patient and duration of illness**

The results of this study revealed that marital status had an impact on psychological well-being. When compared to the control groups, it was discovered that the category of singles has the greatest impact on psychological well-being. In terms of patient age, it was discovered that the category of (31–40) years had the greatest impact on psychological well-being. In terms of sickness duration, it was discovered that the category of (49-60) months had the greatest impact on psychological well-being when compared to the control groups. This study supported by another study done by Thom & Benedict (2019). The results revealed that marital status had an impact on psychological well-being. Also revealed that the age of patient has impact on psychological well-being. In terms of sickness duration, this study shows impact on psychological well-being also. According to the researcher's that married people are more affected by psychological pressures because of their commitments and ensuring their livelihood. As for the researcher's reveal regarding the duration of the injury, the longer the period of injury, the higher the psychological burden due to the large expenditures and the loss of hope for the possibility of recovery.

### **Conclusion**

In conclusion, most of relatives of cancer patient have severe financial burden and have fair psychological wellbeing. There is a positive relationship between financial burden and psychological wellbeing which shows the effect of disease on

the patients' family members. Finally, the study highlights significant differences in psychological wellbeing with the marital status, age of patient and duration of illness while there is no significant difference in psychological wellbeing with, age, gender, occupation, degree of kinship, monthly income, residence of relatives and patient's gender and stage of illness. The study Raising awareness among relatives of cancer patients on the nature and stage of cancer, as well as how to alleviate the disease's distress and effects on psychological wellbeing. Furthermore, there should be improvement of the psychological and emotional well-being of relatives of cancer patients, particularly by nursing personnel. Psychological treatments can help relatives' cancer patients feel better.

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