

EFFECT OF BURDEN ON PSYCHOLOGICAL STATUS OF CAREGIVERS FOR ELDERLY CANCER PATIENTS

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Abstract:

Background: Cancer is a major public health problem worldwide. Older patients with cancer are mostly cared for by a family member, who may not be prepared for the challenges of caregiving; this can result in negative effects on caregivers' psychological status. **Aim of study:** Was to identify the effect of burden on psychological status of caregivers for elderly cancer patients. **Setting:** The study was conducted at the Clinical Oncology department in Sednawy hospital at Al- Salam Sector, Zagazig University Hospitals in Sharkia Governorate. **Design:** A descriptive research design was used in this study. **Sample:** A purposive sample composed of 100 elderly patients and their family caregivers. **Tools:** Two types of tools were used for data collection, one covered the patients' demographic, medical history, and Daily Living Activities Scale and another tool covered caregivers' demographic, medical history, Zarit Burden Interview, and Hospital Anxiety and Depression Scale. **Results:** Great majority of family caregivers suffered mild to moderate levels of burden, anxiety, and depression (95%, 61%, and 75%) respectively, caregivers' anxiety and caregivers' burden scores are significantly and positively correlated. **Conclusion:** Majority of the caregivers suffer caregiving burden, and many from severe anxiety and depression. Caregivers' burden, anxiety, and depression are significantly influenced by both patients as well as caregivers' characteristics. **Recommendations:** Educational program for caregivers about how to manage symptoms and locate resources that may decrease the caregiving burden.

Keywords: Anxiety, Burden, Cancer, Caregivers, Depression, Elderly, psychological status

Introduction:

Age is associated with increased incidence of chronic diseases and a number of syndromes typical of the older persons, so-called "geriatric syndromes (Balducci and Extermann, 2010) [1]. Advancing age is the single greatest risk factor for developing cancer, so cancer regarded as an aging-related disease, with an incidence that rises exponentially during midlife in humans; the incidence of cancer is reported to be 12 - 36 times higher in patients 65 years or older compared with those aged 25 - 44 years.

Currently 60% of newly diagnosed malignancies and 70% of all cancer deaths occur in people 65 years or older (Magalhaes, 2015) [2].

Cancer is a term used for diseases in which abnormal cells divided without control beyond their usual boundaries causing a lump called a tumor; this is true of all cancers except leukemia (World Health Organization [WHO], 2015) [3]. The median age of a cancer diagnosis is 66 years. One-quarter of new cancer cases are diagnosed in people aged 65 to 74

years old (American Society of Clinical Oncology, 2017) ^[4]. In 2016, an estimated 1,685,210 new cases of cancer will be diagnosed in the United States and 595,690 people will die from the disease. The number of new cases is expected to rise by about 70% (22 million) over the next 2 decades (National Cancer Institute, 2016) ^[5].

Egypt is considered with the highest cancer incidence rates with 108,611 newly diagnosed cancer cases (excluding non-melanoma skin cancer) / year. In Egypt, the age-standardized incidence rates (ASRs) per 100,000 were 166.6 (both sexes), 175.9 (males), and 157.0 (females) (El-sheikh et al., 2015) ^[6]. By 2050, a 3-fold increase incident cancer relative to 2013 was estimated (Ibrahim et al., 2014) ^[7].

With the number of older persons with cancer growing in several Arab countries, most people with cancer were being cared for by home caregivers, mainly family members. A family caregiver or "informal caregiver" is defined as a person who is providing care without pay or wage, for patients who have cancer and are unable to independently care for themselves (The British Columbia Law Institute and The Canadian Centre for Elder Law, 2011) ^[8].

Family member may not be prepared for the challenges of caregiving and the needs of older patients are diverse, this can result in negative effects on caregivers' psychological health (Lund et al., 2014) ^[9]. Anxiety and depression are the most common problems experienced by family caregivers and may be more common and severe in

family caregivers than in patients with cancer (Spector and Tampi, 2015) ^[10].

Nurses need to assess family caregivers for emotional distress and intervene to reduce distress by fostering patient-caregiver teamwork, communication, and self-care; providing information; and referring to resources as needed (Northouse et al., 2012) ^[11].

Significance of the study

The diagnosis of cancer is a traumatic experience both for individuals and families. Compared to other diseases, cancer may have a greater effect upon individuals and families in the physical, psychological, social and economic area by unbalancing the daily life. Moreover, cancer is one of the most common health conditions in receipt of informal caregiving (Lambert et al., 2013) ^[12]. Although caring for loved ones has benefits as personal fulfillment and satisfaction, it can be extremely complex and is associated with significant caregiver burden. Hence, caregivers may face many challenges, which may have negative impacts on their physical and emotional health (Kolkcaba et al., 2014) ^[13].

Aim of the study

The aim of the study was to identify the effect of burden on psychological status of caregivers for elderly cancer patients.

Research questions

What is effect of burden on psychological status of

caregivers for elderly cancer patients?

Subjects and methods:

Research Design

A descriptive research design was used to conduct this study.

Study Setting

This study was carried out at the Clinical Oncology department in Sednawy hospital at Al- Salam Sector, Zagazig University Hospitals in Sharkia Governorate, because it is the only place provide treatment or follow up care for cancer patients at Zagazig.

Study Subjects

Any elderly patient attending the study setting for treatment or follow – up and his /her accompanying caregiver were eligible for the study according to the following criteria:

- Patients:
 - Inclusion criteria:
 - Elderly (60+years).
 - Exclusion criteria:
 - Being bed ridden.
 - Not able to communicate.
- Caregivers:
 - Inclusion criteria:
 - Adult (18 years or older).
 - Family caregiver responsible for giving care for the patients.
 - Willing to participate in the study.
 - Accompanying the patient to the setting.
 - Exclusion criteria:
 - Paid caregivers.
 - Caregivers caring for the elderly cancer patient for the first time.

Sample size: A purposive sampling technique was used to recruit 100 elderly patients and their family caregivers according to the inclusion and exclusion criteria. The sample size was calculated to estimate a prevalence of depression of 39% or higher (Magdy, 2015)^[14] with 5% standard error at 95% level of confidence. Using Open – Epi computer software package, the required sample size was 88. It was increased to 100 elderly patients and their family caregivers to compensate for a non- response rate of about 15%.

Tools of data collection:

The tools used for collecting data of the present study were divided based on two main tools:

Tool I: patient Form: It consisted of three main parts, as follow:

Part1:Socio-demographic characteristics, **Part 2:** Medical history, and **Part 3:** Daily Living Activities Scale: It was developed by Katz & Akpom, (1976)^[15] to assess activities of daily living. **Scoring system:** Totally dependent: 13-18 points, Need assistant: 7-12 points, and Totally independent: 6 points.

Tool II- Family caregiver Form: It consisted of four main parts, as follow: **Part 1:** Socio-demographic characteristics, **Part 2:** Medical history, **Part 3:** The Zarit Burden Interview (ZBI): This scale was developed by Zarit et al., (1980)^[16] to provide a global, uni-dimensional measure of caregiving burden in health, psychological well-being, finances, social life and relationship

with patient. **Scoring Key:** No burden: < 20. Mild burden: 20 - < 40. Moderate burden: 40 - < 60. Severe burden: 60+. **Part 4:** Hospital Anxiety and Depression Scale (HADS): This is a self –report questionnaire commonly used to assess the levels of anxiety and depression. It was developed by Zigmond & Snaith, (1983) ^[17]. The HADS comprises 14 statements rated by the respondent based on own experience over the past week. There are seven relevant for generalized anxiety and seven relevant for depression. Each statement has four possible responses scored on a scale from 3 to 0. Scoring system: The score of the two subscales are summed – up and categorized as: Normal (0-7). Mild (8-10). Moderate (11-15). Severe (16-21).

Content validity:

The prepared tool was revised by three experts from nursing and medical staffs. They reviewed the tools' content for clarity, relevance, comprehensiveness, and understandability. All recommended modifications were applied. Meanwhile, the three scales used have documented validity and reliability.

Field work:

The fieldwork was executed over a period of three months from December 2016 to February 2017. The work was done three days per week Saturday, Monday, and Wednesday from 10.00 AM to 12.00 PM. On average, 2 to 3 elderly patients and their family caregivers were interviewed in each working day. The time needed to complete the interview ranged from 25 to 35 minutes according to the

understanding and cooperation of the elderly and caregiver.

Pilot study:

The pilot study was carried out on 10 elderly and their family caregivers to test the clarity and applicability of the study tools as well as estimation of the time needed to complete the interview sheet. Those who shared in the pilot study were excluded from the study.

Administrative and ethical considerations:

Firstly, the study protocol was approved by the pertinent committee (Research Ethics Committee) at Faculty of Nursing, Zagazig University. Then, at the time of data collection, a verbal informed consent for participation was taken from each of the elderly subjects after full explanation of the aim of the study. Participants were given the opportunity to refuse participation, and they were notified that they could withdraw at any stage of the data collection without giving any reason.

Statistical analysis:

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians for quantitative variables. Cronbach alpha coefficient was calculated to assess the reliability of the tool scales through testing their internal consistency. Quantitative continuous data were compared using the non-parametric a Mann-Whitney or Kruskal –Wallis Tests. Spearman rank correlation was used for assessment of the inter-

relationships among quantitative variables and ranked ones. In order to identify the independent predictors of the scores of Katz, Zarit, anxiety, and depression, multiple linear regression analysis was used and analysis of variance for the full regression models done. Statistical significance was considered at p -value <0.05 .

Results:

Table (1) shows characteristics of elderly patients, their age ranged between 60 and 80 years, with a higher proportion of females (61%). More than a half of them were married (58%). The highest percentage had secondary education (41%), whereas one-fourth were illiterate (25%). Slightly less than a half of them were not working previously (44%). Figure (1) displays, three-fourth (75%) of the patients in the study sample belonged to the low socioeconomic level, and none was in the high level.

As regards elderly patients' disease characteristics, Table 2 indicates that female genital (18.0%), breast (15%), and bone (14.0%) cancers were the most prevalent. On the other hand, only one (1.0%) patient had bladder cancer. The duration of cancer ranged between 1 and 5 years. All patients were receiving chemotherapy, but none had hormonal therapy. The median number of treatments was 3, indicating that at least one-half of them were receiving combined chemotherapy and radiotherapy in addition to surgery. As displayed in Table 3, only one patient was able to perform all daily life activities (DLA) independently according to Katz scale. Meanwhile, 21 patients were able to perform

elimination function independently. The Katz score ranged between 0 and 6, with median 0.0 indicating that at least a half of the sample were dependent in all DLAs.

Concerning the characteristics of patients' family caregivers, Table 4 shows that their age ranged between 18 and 68 years. The majority were males (80%), having secondary level education (62%), and married (88%). Approximately two-thirds of them (65%) were working as employees, and 72% reported having insufficient income. Table 5 indicates about two-thirds of patients caregivers were their sons/daughters (65%). Slightly more than a half of them were getting help in caregiving (51%), mostly from their own sons/daughters (76.5%). The duration of caregiving ranged between nine and 60 months. As for the daily hours spent in caregiving, it was mostly 12 or more (60%), with median 24 hours, indicating that at least a half of them were full-day caregiving. Figure 2 demonstrates that mild burden, mild anxiety, and mild depression were revealed in only 5%, 2%, and 9% of the caregivers. Conversely, 5%, 39%, and 25% of them had severe levels of these symptoms respectively.

Table 6 demonstrates a statistically significant moderate positive correlation between caregivers' anxiety and depression scores ($r=0.683$). Moreover, patients' Katz scores had statistically significant weak positive correlations with caregivers' anxiety and depression scores. Additionally, a statistically

significant weak positive correlation was found between anxiety and Zarit burden scores.

As for the caregiver's anxiety score, Table 7 indicates that caregiver's socioeconomic level, patients' Katz score, and caregiver's Zarit score were its statistically significant independent positive predictors. The model explains 18% of the variation in the anxiety score.

Discussion:

The number of elderly with cancer is on the rise, with significantly increasing caregiving needs, and this is mainly provided by family caregivers (Jayani and Hurria, 2014) ^[18]. Cancer patient caregiving is a stress-inducing challenge faced by family members, and the diagnosis of cancer often leads to physical, mental, and social disorders for both patients and their families (Kim, 2015) ^[19]. The problem is more evident in Egypt where the public support for elderly is limited, and families are the main, if not the only source of old-age support (Sinunu et al., 2015) ^[20]. Hence, it was important to explore caregiver's emotional distress as this helps in exploring their burden, which can have a negative impact on patient's illness and functioning apart from their own (Balhara et al., 2014) ^[21].

According to the present study findings, almost all elderly cancer patients were dependent in the performance of all their daily life activities (DLAs), with only one of them being able to perform all DLAs independently. This function with the least dependence was that of

elimination and continence, which could be performed by approximately one-fourth of the patients since this function is the most one related to human dignity. This high level of dependence of the patients is expected given the double impact of aging and cancer disease on the physical and functional abilities of these elderly people. It would certainly explain the high levels of caregiving burden identified among their caregivers. In congruence with the foregoing present study findings, Esbensen et al., (2014) ^[22] in Denmark, found that the prevalence of functional limitations in older cancer patients was twice as high as that reported in large cohorts of other elderly. Additionally, a study in rural Lower Egypt revealed that a high percentage of the studied elderly people with cancer was dependent in their DLAs (Salama and Abou El-Soud, 2014) ^[23]. However, and in disagreement with this, an Egyptian study conducted in Mansoura city (Sherif et al., 2014) ^[24] found that the majority of the older cancer patients were independent in DLAs. Moreover, patients' Katz scores of independence had a significant positive correlation with their income. This positive effect could be attributed to the higher ability of educated patients to cope with their conditions and find solutions in difficult situations. Moreover, the higher income and socioeconomic level may help patients to have more facilities at home that could help them in performing their DLAs independently. The findings are in agreement with Beydon and Popkin, (2014) ^[25] in China who found that a lower socioeconomic status is

inversely associated with functional status decline and instrumental activities of daily living disability. Similar findings were also reported from studies in Thailand (Zimmer and Amornsirisomboon, 2013) ^[26], Hong Kong (Cheng et al., 2013) ^[27], and China (Zimmer and Kwong, 2014) ^[28]. Concerning patients' family caregivers, the present study demonstrated that the majority of them were sons/daughters living in the same household. This is a common situation in the Egyptian society, where family caregivers play a main role in treatment of elderly cancer patients because of the culture expectation and obligations. A similar finding was reported by Rodriguez-Perez et al., (2017) ^[29] in Southern Spain where more than half quartile of studied caregivers were the children of the care receivers. On the other hand, in Nigeria (Akpan-Idiok and Anarado, 2014) ^[30] more than three - fifth of studied caregivers, were the parent of the patients, while in Korea (Choi et al., 2016) ^[31] more than half quartile of caregivers were patients' spouses. The differences could be related to the age of the patients and the family structure and the community cultures and norms.

According to the present study findings, almost all caregivers were having mild to moderate levels of burden related to their caregiving. This is a very high percentage reflecting the considerable impact of caregiving on these persons. This is undoubtedly due to the changes that take place in the life of caregivers. Furthermore, in Egypt there are limited social services and respite centers to help cancer patients and their family caregivers. In

agreement with the high level of burden among the caregivers of elderly cancer patients in the present study, a number of studies from various countries reported similarly high levels of caregiving burden. Thus, in Egypt, a study by Salama and Abou El-Soud, (2014) reported that the majority of the studied caregivers experienced severe burden. High levels of burden were also demonstrated in studies in Turkey (Kahriman and Zaybak, 2015) ^[32], and in India (Lukhmana et al., 2015) ^[33]. On the other hand, Chindaprasirt et al., (2014) ^[34] in a study in Thailand, found that the majority of the caregivers reported no burden. This discrepancy could be attributed to different cultures, as well as the personal and health characteristics of the caregivers, which could influence their burden. As for the relation between caregivers' burden and the socioeconomic level, the present study revealed an inverse relationship, where the burden increases as the socioeconomic level decreases. This is quite expected since poverty may involve restrictions such as in access to health services, access to other social facilities. In agreement with this, a study conducted in Turkey reported that as patient's monthly income decreased caregiver burden increased (Yazici et al., 2016) ^[35]. On the same line, Koujalgi and Nayak, (2016) ^[36] in India, clarified that a lower income may be a stressor that influence stress feeling during the caring process. Concerning the caregivers' factors influencing their level of burden, the current study bivariate analysis showed that the burden was significantly higher among

older age male married caregiver, with insufficient income, suffering chronic diseases, and on regular medications. It also increased with the duration of caregiving. The influence of most of these factors was confirmed in correlation analyses. All these factors reflect a lower physical and psychological ability of the caregiver to provide care. Moreover, females are known to be better in caregiving given their nature and their habituation to perform home chores. Similar factors were shown to influence the burden of caregiving among family caregivers of Iranian cancer patients (Mirsoleymani et al., 2017)^[37].

The present study has also assessed the level of anxiety among the caregivers of elderly cancer patients. The result indicated that almost all of them were having moderate to severe anxiety. A similar high level of anxiety among family caregivers of cancer patients was reported by Van Ryn et al., (2014)^[38] in a study in USA. Meanwhile, a lower prevalence of depression was reported in a study in Korea by Park et al., (2013)^[39] where the prevalence of anxiety in family caregivers was more than one third, and it was mostly mild anxiety. This might be attributed to more ability to cope with stress in Far-East societies. According to the current study results, caregivers' anxiety scores were significantly influenced by some of their patient's characteristics. Thus, the findings indicate that patients' higher income and socioeconomic level increased their caregivers' level of anxiety. However, the multivariate analysis identified patient's Katz score as the

only positive predictor of caregiver's anxiety score. This is might be explained by the more worries the caregiver could have when the patient is depending on him/her in the Activities of Daily Living for fear of falling or injuries. In this respect, Razani et al., (2015)^[40] in a study in California showed that patients' functional disability tended to be related to caregivers' ratings of hostility but not anxiety or depression.

Regarding caregivers' depression symptoms, the present study findings demonstrated that most of them were experiencing such symptoms, and about two-fifth of them had severe level of depression. A similarly high prevalence of depression symptoms was reported in a study in Korea (Park et al., 2013) where four- fifth of the family caregivers were having depression. Similar high scores of depression were revealed in studies in Italy (Cormio et al., 2014)^[41] and in India (Manjeet et al., 2015)^[42]. Certain caregivers' characteristics were significantly related to their depression symptoms. Thus, the bivariate analyses showed more depression in older age male caregivers, with middle level education, sufficient income, spouses, having chronic diseases, and on regular medications. These factors indicative of low to middle socioeconomic level are known to be associated with depression. The relation with education is in line with Devi et al., (2015)^[43] whose study in Malaysia revealed that the prevalence of depression was highest among the family caregivers with secondary education compared to the other levels of education. Meanwhile, Sherif et al.,

(2014) in a study in Mansoura city showed that the caregiver who had high level of education suffered from high depression level. Concerning the effect of caregivers' income in enhancing their depression symptoms, this might be due to more financial concerns among them during long treatment periods as resources become depleted, with fear about taking greater financial risks as carrying larger debts over time, saving less money, or loss of savings. In line with this, Kramer and Thompson (2015)^[44] in a study in New York found that higher caregiver income was associated with increasing caregiving anxiety. However, other studies reported an inverse relation between caregiver income and the prevalence of depression symptoms (Park et al., 2013 in Korea; Al-Zahrani et al., 2016^[45] in Saudi Arabia; Oven Ustaalioglu and Acar, 2017 in Turkey)^[46]. The discrepancies could be explained by the variation in the economic level of various study settings, as well as the cost and availability of healthcare services for cancer patients.

Lastly, the present study findings point to significant relations among patients' Katz scores and caregivers' burden, anxiety, and depression scores. Moreover, caregivers' anxiety score was predicted by their burden score as well as patients' Katz score of independence. This indicates that any interventions improving one of these psychological problems would have a positive impact on the others. These findings highlight the importance of early assessment, nursing diagnosis and potential interventions to reduce cancer family burden, anxiety,

depression and help them to cope with their caregiving role. Nurses and other health care teams should acknowledge informal caregiver and elderly patient as one unit of care and need to balance patients' and caregivers' need for information, support and sense of medical partnership.

In congruence with these aforementioned present study findings, Philips et al., (2014)^[47] in a study in the United Kingdom showed that caregiving burden was associated with higher anxiety. On the same line, Medrano et al., (2014)^[48] in a study in Santiago found a positive correlation between caregiver burden and anxiety score. Moreover, Denno et al., (2014)^[49] in a USA study demonstrated that as caregivers' burden increased, it was more likely that they might have anxiety.

Conclusion: The study findings lead to the conclusion that generally high levels of dependence among elderly cancer patients in their daily life activities (DLAs), and this is influenced by patients personal and diseases characteristics. The majority of the caregivers suffer caregiving burden, and many from severe anxiety and depression. Caregivers' burden, anxiety, and depression are significantly influenced by both patients as well as caregivers' characteristics. Additionally, caregiver's burden score is statistically significant independent positive predictor of their anxiety.

Recommendations:

*Early assessment, nursing diagnosis and potential interventions to reduce cancer family burden, anxiety,

depression and help them to cope with their caregiving role.*Develop standardized care for caregivers of patients with cancer in acute care and primary care settings.*Educational program for caregivers about how to manage symptoms and locate resources that may decrease the caregiving burden.*Health education programs should be targeted to the most elderly of cancered patients and their family caregivers such as those with lower education, low/middle socioeconomic level, and with long duration of disease.*Further studies are proposed to test the effectiveness of such educational programs on adherence to treatment and on patient outcomes.

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Table 1: Demographic characteristics of elderly patients in the study sample (n=100)

Demographic characteristics	Frequency	Percent
Age:		
60-70-80	82	82.0
Range	18	18.0
	60.0-80.0	
Gender:		
Male	39	39.0
Female	61	61.0
Marital status:		
Unmarried (single, divorced, widow)	42	42.0
Married	58	58.0
Education:		
Illiterate	25	25.0
Basic	20	20.0
Secondary	41	41.0
High institute	14	14.0
Previous job:		
Employee	29	29.0
Worker	27	27.0
Unemployed/ housewife	44	44.0

Table 2: Disease characteristics of patients in the study sample (n=100)

Disease characteristics	Frequency	Percent
Type of cancer:		
Female genital	18	18.0
Breast	15	15.0
Bone	14	14.0
Lung	12	12.0
Gastro-hepatic	11	11.0
Oral	7	7.0
Thyroid	6	6.0
Prostate	5	5.0
Skin	4	4.0
Blood	4	4.0
Brain	3	3.0
Bladder	1	1.0
Duration of illness (years)		
<1	15	15.0
1+	85	85.0
Range	1.0-5.0	
Median	2.5	
Treatment: @		
Chemotherapy	100	100.0
Radiotherapy	93	93.0
Hormonal	0	0.0
Surgical	74	74.0
No. of treatments:		
Range	2-3	
Median	3.0	

(@) Not mutually exclusive

Table 3: Independence in Daily life Activities (DLAs) among patients in the study sample (n=100)

Independence in (DLAs)	Frequency	Percent
Independently able to:		
Bathing	1	1.0
Dressing	1	1.0
Use toilet	1	1.0
Ambulation	1	1.0
Elimination and continence	21	21.0
Feeding	1	1.0
Total Katz:		
Independent	1	1.0
Dependent	99	99.0
Katz score:		
Range	0.0-6.0	
Mean±SD	0.3±0.7	
Median	0.0	

Table 4: Socio-demographic characteristics of the studied caregivers (n=100)

Socio-demographic characteristics	Frequency	Percent
Age:		
40-40-60	47	47.0
53		53.0
Range	18.0-68.0	
Gender:		
Male	80	80.0
Female	20	20.0
Education:		
Preparatory	11	11.0
Secondary	62	62.0
High institute	27	27.0
Marital status:		
Unmarried (single, divorced, widow)	12	12.0
Married	88	88.0
Job:		
Employee	65	65
Worker	17	17
Unemployed/housewife	18	18
Income:		
Insufficient	72	72.0
Sufficient	28	28.0

Table 5: Caregiving characteristics of the studied caregivers (n=100)

Caregiving characteristics	Frequency	Percent
Relation to patient:		
Spouse	11	11.0
Sons/daughters	65	65.0
Friends	24	24.0
Have help from others	51	51.0
Help from:		
Sons/daughters	39	39.0
Spouse	6	6.0
Others	6	6.0
Duration of caregiving (months):		
<12	14	14.0
12-60	86	86.0
Range	9.0-60.0	
Daily hours of caregiving:		
<12	40	40.0
12-24	60	60.0
Range	12.0-24.0	
Median	24.0	

Table 6: Correlation matrix of patients' dependence and their caregivers' burden, anxiety, and depression

patients' dependency and their caregivers' burden, anxiety, and depression	Spearman's rank correlation coefficient			
	Katz	Zarit	Anxiety	Depression
Katz				
Zarit	-0.12			
Anxiety	.310**	.222*		
Depression	.205*	0.18	.683**	

(*) Statistically significant at $p < 0.05$

(**) Statistically significant at $p < 0.01$

Table 7: Best fitting multiple linear regression model for the caregiver anxiety score

Multiple linear regression model for the caregivers' anxiety	Unstandardized Coefficients		Standardized Coefficients	t-test	P-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Constant	4.86	2.39		2.037	0.004	.12	9.60
Socioeconomic level	2.01	.59	.32	3.389	0.001	.83	3.18
Katz score	.78	.37	.20	2.133	0.036	.05	1.50
Zarit score	.16	.04	.37	3.774	<0.001	.07	.24

$r\text{-square} = 0.18$

Model ANOVA: $F = 8.11, p < 0.001$

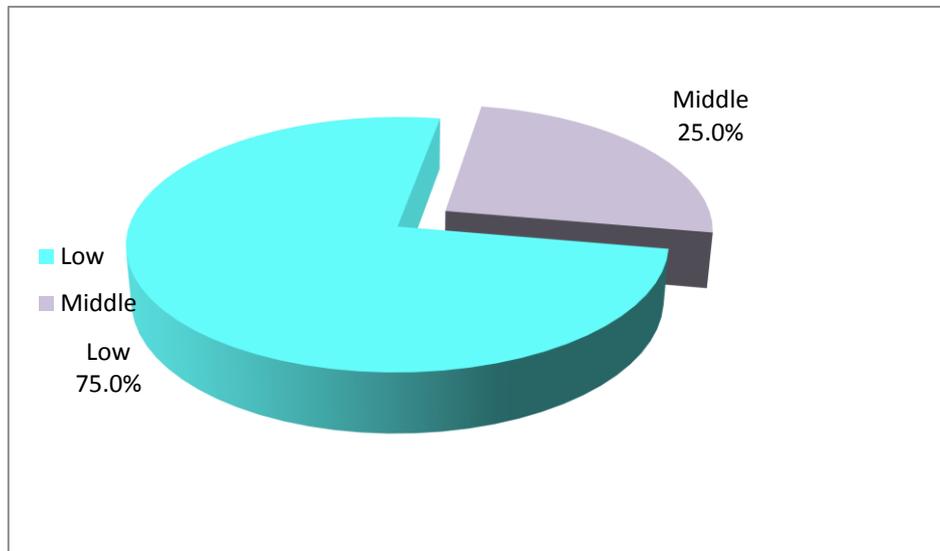


Figure 1: Socio-economic level of patients in the study sample (n=100)

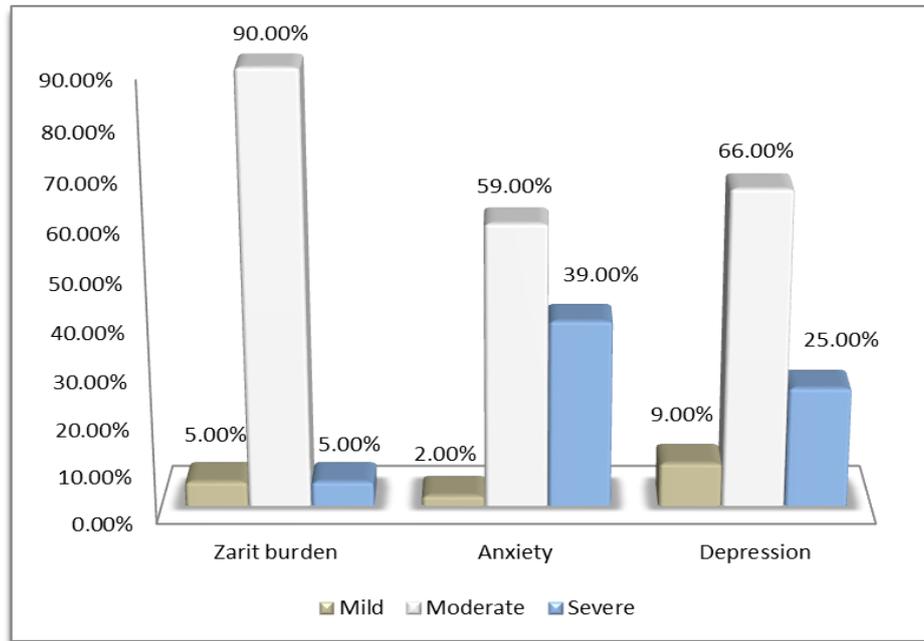


Figure 2: Caregivers' Burden, anxiety, and depression