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Original Article

Level Of Depression And Quality Of Life Among Caregivers Of Cancer Patients: Hospital-Based Study

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Abstract

Objective: To determine the level of depression and quality of life among caregivers of patients with cancer.

Methods: It was a descriptive cross-sectional study done at the NORI hospital in Islamabad from April 2020 to October 2020. A total of 150 study participants were selected by a purposive sampling technique. The questionnaire consists of a Sociodemographic profile of caregivers, including age, gender, marital status, occupation, relationship to patient, education, duration of caregiving, stage of the cancer of the patient, and type of cancer. To measure participants' quality of life 'caregiver quality of life-cancer index' was used. The CQOLC is a self-administered scale specifically designed to evaluate cancer patient caregiver quality of life. To measure participants' depression, the Beck depression inventory scale was used.

Results: In this study, 44% of caregivers were under 50years, 70% were female, 88% were married, 44.7% were housewives, and 56% were secondary school graduates. 85 caregivers had been caring for the patient for over a year. 37.3% were the parents of the caregivers. 49.3% were patients with cancers of the reproductive system, and 81 had stage 3 cancer. Mean score of CQOLC (caregiver quality of life index cancer) is 80.625± 3.422, median 80, and range 72-87. 73 (48.7%) showed poor quality of life. Mean score of BDI (beck depression inventory) for depression is 24.4733± 4.877, median (range) 24(19-39). 132 (88%) showed moderate to severe depression. This study showed a significant association of depression with age, gender, relation with the patient, type of cancer, and stage of cancer (P<O.05). Similarly, quality of life has shown an association with age, gender, relationship with the patient, and duration of caregiving (P<0.05).

Conclusion: The results showed that caregivers' quality of life is affected, and they had mild to moderate depression.

Keywords: cancer, caregiver, depression, quality of life.

Introduction

The majority of the global deaths are currently because of non-communicable diseases, and cancer is considered the foremost cause of death among them. Cancer is the single most important obstacle to increasing life expectancy in every country of the world in the 21st century. In the 2015 report of the World Health Organization, 1st and 2nd leading causes of death in 91 of 172 countries before age 70 are cancer, and it is considered 3rd or 4th in the remaining 22 countries.[1] An article issued in 2017 showed that in Pakistan estimated number of new cases of cancer per year was 148,000, and 101,000 people died from cancer per year.[4] It is expected that by 2030, the number of new cancer cases will be 21.7 million, and 13 million sufferers of cancer will die.[2]

Cancer affects the caregivers of patients who could be their partners, family members, and close friends. As the cancer diagnosis is a big challenge and vagueness of the disease, the caregivers' well fare is at risk, and a noteworthy number of them have shown weighty depression and anxiety. As cancer treatment requires a longer period, and only after initial treatment at the hospital, the rest of the patients' treatment takes place in outpatient settings. In this regard, family caregivers have more burdens and responsibilities.[2]

A caregiver is defined as a partner, friend, or any relative who gives support for the running of daily life functioning and living. Caregivers of older adults are on the rise, as older adults are sufferers of cancer. These older patients mostly stay at home and are dependent on caregivers for help with cancer treatment and daily activities. Caregivers face a major amount of stress, which in turn affects their own health, both mentally and physically.[3] Doctors often neglect the caregivers and give attention only to patient treatment. The quality of life of caregivers greatly deteriorates as the cancer advances, as it increases the burden on caregivers. Many studies have shown that caregivers' emotional health (depression, anxiety) is at greater risk than compared of the patient they are caring for. As the functioning of patient of cancer patient deteriorates, the suffering of caregivers increases. [4]

It has been seen that depression and anxiety affect quality of life (QOL) in both the cancer patient and the caregiver. A study done on Chinese adults with cancer and their partners' caregivers has shown that depression and anxiety are the strongest independent factors affecting QOL in these couples. From this evidence, it could be concluded that exploring the persuading factors of depression and anxiety in patients' caregivers would help to find any interventions intended to get rid of their emotional distress and calmative QOL. The effect of depression and anxiety on QOL is very complex for both the patient and caregivers.[5] In China, the prevalence of anxiety and depression in the healthy population was low, i.e., 18.37% and 17.50% respectively, as compared to the cancer population, i.e., 46.69% and 54.90% respectively. It has been stated that family caregivers may practice the same or even greater level of emotional disturbance than cancer patients.[6]

Contributions:
UA, SAS, KK, RI - Conception, Design
UA, SAS, KK, RI - Acquisition, Analysis, Interpretation
UA, SAS, KK, RI - Drafting
UA, SAS, KK, RI - Critical Review

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In traditional Turkish values, the joint family system is very significant, and caregivers are influenced by this tradition. In our country, the home care system is not as strong as it is in developed countries. As a result, formal care is less prevalent as compared to informal care. Overall, the duty of caring for the cancer patient at home is down to the patient's spouse, children, relatives, or friends.[7]

As family caregivers experience significant emotional disturbance, researchers are still unable to find the relevant factors associated with family caregivers' depression and anxiety. Many features related to both family caregivers and patients play an important role, like demographic features, such as gender, age, but still lack the specific factors for family caregivers' depression and anxiety. In addition to the care from the medical team, patients with cancer often need help from friends and family. Family caregivers help patients in several ways, like personal care, financial help, emotional support, transportation, and symptom management. Most of the family caregivers take this responsibility before any preparation or support, so they put themselves at risk of psychological distress.[8]

In America, it has been estimated that 2.8 million people deliver services to cancer patients as informal family caregivers. Improvement in patients' survival rates has been seen because of giving intensive family care, shorter hospital stays, less financial burden on the family, and better treatment options. As caregivers have a broad range of functions, like managing the symptoms and medicines, treatment of the disease and its complications, physical care, and psychological support, are taken on without training and with very less resources. Hence, family caregivers give support to the patient and, in doing so, often neglect their own feelings, emotions, and health.[9] A study published in Iran showed that out of the total sample, mild to severe depressive symptoms were found in 60%[5] (24.8% mild and the rest moderate and severe) of patients' caregivers. Among participants, 17.5% had quality lower than normal and 42.9% were medico-rite, and only 39.7% of patients were higher than appropriate.[10]

Although caregivers' problems are considered in some studies but overall, less attention has been paid to cancer caregivers. The precise aim of this study is to look at depression and quality of life simultaneously and to examine the correlates of depression in relation to quality of life among cancer caregivers, as not much work has been done in this regard in our community. Knowledge generated from this study will provide a comprehensive understanding of caregivers' experience, including what the caregivers lived through, the nature of their everyday thoughts or attitudes, coping strategies, help-seeking behaviors, and concerns while giving care to cancer patients. Understanding the caregivers and identifying their specific needs is essential for healthcare professionals who are working with cancer patients and supporting the patient's caregivers.

The study aimed to determine the level of depression and quality of life among caregivers of patients with cancer.

Materials And Methods

It was a descriptive cross-sectional hospital-based study carried out in the Nori hospital, Islamabad, over 6 6-month duration after approval of the synopsis. Sample size was 150, calculated by using the WHO calculator with confidence interval 95%, absolute precision 8% and the expected percentage of depression was 60.7%. The purposive sampling technique was used for the selection of study subjects. Inclusion criteria included Patients of both genders who were 36 to 55 years old and caregivers of patients with Stage 2 and Stage 3 disease as per clinical classification, Patients with breast cancer, cancer of the gastrointestinal system, and reproductive system, with a duration of disease diagnosed more than 5 months. Caregivers of cancer patients above 18 years of both genders who are Family caregivers, including parents, spouses, siblings, relatives, friends/neighbours, were included, and all caregivers attending their patients since 3months. Exclusion Criteria included those who are already diagnosed case of depression or psychiatric illness, and Patients at the terminal stage of the disease.

The study protocol was approved by the IRB ethical research committee of the Rawalpindi Medical University. Information was obtained from participants who are present in wards or in opd of NORI hospital, by interviewing and filling the questionnaire after informed verbal consent. All the interviews with the patients were done by the researcher. For the ethical issues, all the interviews of the caregivers were conducted in the absence of the patients. The questionnaire consists of a Sociodemographic profile including age, gender, marital status, occupation, relationship to patient, education of caregiver, duration of caregiving, stage of the cancer, and type of cancer.

To measure participants' depression, the Beck depression inventory scale was used. Reliability and validity of the scale were established in a study in Turkey, which showed Cronbach's alpha 0.89. [11]

The BAI contains 21 questions with a score range of 0-63, each answer being scored on a scale value of 0 (rarely) to 3 (almost always). Higher total scores indicate more severe anxiety symptoms.

The following cut-off scores for the BDI:

No or minimal depression <10, Mild-to-moderate depression= 10–18, Moderate-to-severe depression= 19–29 and Severe depression= 30–63

To measure quality of life caregiver quality of life-cancer index was used.

The CQOLC is a self-administered scale specifically designed to evaluate cancer patient caregiver quality of life, showing Cronbach's alpha 0.91 in studies conducted in the USA. [11] This scale includes 35 items. CQOLC responses are scored from 0 (not at all) to 4 (completely) on 5 5-item Likert scale. The items 4, 10, 12, 16, 22, 27, 28, 34 are reverse-coded. The total score ranges from 0 to 140, with higher scores showing a more disturbed quality of life. The score was taken as a continuous variable, and the categories include. 0-40 =very good quality, 41 to 80= good quality, 81 to 120 =poor quality and 120-140 above=very poor quality. Data was analysed using the statistical package for the social sciences (SPSS) version 21. Descriptive statistics are used to measure quantitative and qualitative variables. For quantitative variables like the age of the caregiver and duration of caregiving, the mean and standard deviation are calculated. For qualitative variables like depression, quality of life, gender, occupation, education level, marital status, patient relationship, stage of cancer, and type of cancer, frequency and percentages are calculated. Tables, pie, and bar charts are used to present data. Bivariate analysis was done by applying Chi chi-square test of independence to see the relationship of depression and quality of life with education and occupational status. Chi-square test is applied with the confidence level set at 95% and level of significance set at 0.05. A p-value less than 0.05 is significant. Effect modifiers like socio-economic status and educational status are controlled in data analysis by stratification. A boxplot, a graphical tool, is used to compare age distribution across groups (e.g., by gender, education, or occupation) and compare duration of caregiving across categories (e.g., stages of cancer). Chi-square test applied where assumptions met; otherwise, Fisher's exact test.

Results

In this study, 44% of caregivers were under 50years, 70% were female, 88% were married, 44.7% were housewives, and 56% were secondary school graduates. In this study, 85 caregivers had been caring for the patient for over a year. 37.3% were the parents of the caregivers, 49.3% were the patients of cancers of the reproductive system, and 81 had stage 3 cancer. Mean score of CQOLC (caregiver quality of life index cancer) is *80.625± 3.422,* median 80, and range 72-87. (Fig. 1). 73 (48.7%) showed poor quality of life. Further analysis is made to compare between good quality and poor quality.

Mean score of BDI (beck depression inventory) for depression is 24.4733±4.877, median (range) 24(19-39). (Fig 2). 132 (88%) showed moderate to severe depression. Further analysis is made between mild to moderate depression. The result shows, there was a significant relationship between age and depression (p value 0.020 and a significant relationship between gender and depression (p value 0.000). (Table 1)

Table 1: Significant Associations of Demographic Variables with Depression

Variable	Category	Moderate–Severe Depression n (%)	Severe Depression n (%)	p-value
Gender	Female	99 (94.3)	6 (5.7)	<0.001*
	Male	33 (73.3)	12 (26.7)	
Age (years)	18–30	18 (100.0)	0 (0.0)	0.020†
	31–40	34 (85.0)	6 (15.0)	
	41–50	54 (81.8)	12 (18.2)	
	>50	16 (100.0)	0 (0.0)	

- Chi-square test applied where assumptions met; Fisher's exact test (†) where appropriate.
- p < 0.05 is considered statistically significant.

There was a significant relationship between depression and the relationship with the patient (p-value 0.008). The multiple comparison test shows spouses experienced significantly more severe depression, 22.2% versus 0% in siblings. (P value 0.0012). A significant relationship is found between depression and duration of caregiving (p-value 0.009). Another significant association was found between depression and the type of cancer (p-value 0.001). Multiple comparison test shows that caregivers of gastrointestinal cancers had more depression, 26.1% versus caregivers of breast cancers, 0.0% (p value 0.0023). Caregivers of stage 3 patients showed 18.50% severe depression as compared to stage 2 (p-value 0.008). (Table 2).

Table 2: Significant Relationship between caregiving variables and depression

Variable	Category	Moderate–Severe n (%)	Severe n (%)	χ^2 / Fisher	p-value
Relationship with the patient	Parents (a)	50 (89.3)	6 (10.7)	Fisher	0.008*
	Spouse (b)	42 (77.8)	12 (22.2)		
	Siblings (c)	37 (100.0)	0 (0.0)		
	Relatives (d)	3 (100.0)	0 (0.0)		
Duration of caregiving	< 6 months (a)	3 (100.0)	0 (0.0)	Fisher	0.009*
	6–12 months (b)	79 (92.9)	6 (7.1)		
	1–3 years (c)	47 (83.9)	9 (16.1)		
	> 3 years (d)	3 (50.0)	3 (50.0)		
Type of cancer	Breast (a)	30 (100.0)	0 (0.0)	Fisher	0.001*
	Gastrointestinal (b)	34 (73.9)	12 (26.1)		
	Reproductive (c)	68 (91.9)	6 (8.1)		
Stage of cancer	Stage 2 (a)	66 (95.7)	3 (4.3)	χ^2	0.008*
	Stage 3 (b)	66 (81.5)	15 (18.5)		

Pairwise Comparisons
-Relationship with patient: a≠b (0.1259), a≠c (0.0777), a≠d (1), b≠c (0.0012), b≠d (1), c≠d (1).*
-Duration of caregiving: a≠b (1), a≠c (1), a≠d (0.4643), b≠c (0.1015), b≠d (0.0118), c≠d (0.0807).*
-Type of cancer: a≠b (0.0023), a≠c (0.1728), b≠c (0.0159*).*

There was a significant relationship between quality of life and gender (p-value 0.045) and age (p-value 0.001). Multiple comparison test showed that caregivers of 18-30 years had poor quality of life as compared to 31-40 years (p value 0.0009), and caregivers of age 41-50 years had poor quality of life as compared to 31-40 years. (P value 0.0003). (Table 3)

Table 3: Significant associations between demographic variables and the quality of life of study participants

Variable	Category	Good QoL n (%)	Poor QoL n (%)	χ^2 / Fisher	p-value
Gender	Female	56 (53.3)	49 (46.7)	χ^2	0.045*
	Male	21 (46.7)	24 (53.3)		
Age	18–30 yrs	10 (35.7)	18 (64.3)	Fisher	0.001*
	31–40 yrs	31 (77.5)	9 (22.5)		
	41–50 yrs	27 (40.9)	39 (59.1)		
	> 50 yrs	9 (56.3)	7 (43.8)		

- Chi-square test applied where assumptions met; Fisher's exact test (†) where appropriate.
- p < 0.05 considered statistically significant

There was a significant relationship between quality of life and relationship with the patient (p-value 0.008). Multiple comparison test showed spouses experienced significantly poor quality of life, 22.2% versus siblings 0.01 % (p value 0.0012). A significant relationship was found between duration of caregiving and quality of life (p-value 0.04). Multiple comparison test showed that caregivers who had given caregiving for 6 months to 1 year had poor quality of life, 45.9% versus those who cared for more than 3 years, i.e., 0.0% (p value 0.0354). Multiple comparison test showed that caregivers who had given caregiving for more than 1 year had poor quality of life, 60.7% as compared to those who cared for more than 3 years, i.e., 0.0% (p value 0.0061). (Table 4).

Table 4. Significant Relationship between caregiving variables and quality of life of study participants

Variable	Category	Good QoL n (%)	Poor QoL n (%)	χ² / Fisher	p-value
Relationship with the patient	Parents (a)	50 (89.3)	6 (10.7)	Fisher	0.008*
	Spouse (b)	42 (77.8)	12 (22.2)		
	Siblings (c)	37 (100.0)	0 (0.0)		
	Relatives (d)	3 (100.0)	0 (0.0)		
Duration of caregiving	< 6 months (a)	3 (100.0)	0 (0.0)	Fisher	0.04*
	6–12 months (b)	46 (54.1)	39 (45.9)		
	1–3 years (c)	22 (39.3)	34 (60.7)		
	> 3 years (d)	6 (100.0)	0 (0.0)		

Pairwise Comparisons

Relationship with patient: a≠b (0.125), a≠c (0.0777), a≠d (1), *b≠c (0.0012)**, b≠d (1), c≠d (1).

Duration of caregiving: a≠b (0.2512), a≠c (0.0707), a≠d (1), b≠c (0.0891), *b≠d (0.0354), *c≠d (0.0061) (X).

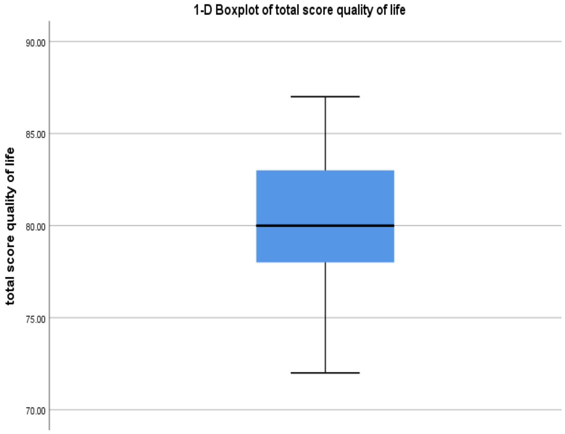

Figure 1: Box Plot Showing Quality of Life As Experienced By Participants. N=150

Participants' score for quality of life. mean, sd 80.625± 3.422, median (range) 80(72-87)

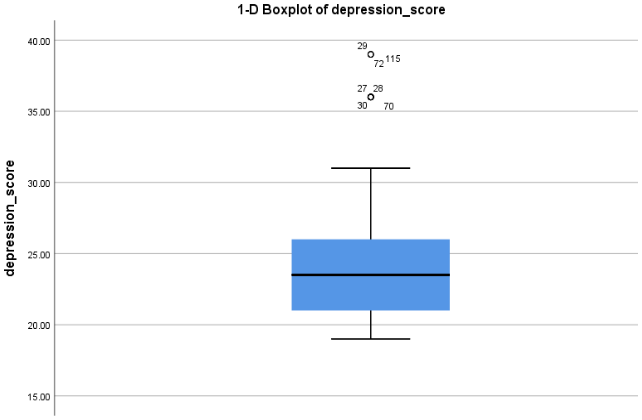

Figure 2: Box Plot Showing Distribution of Depression Score Among Study Participants

Depression score of participants mean, sd 24.4733± 4.877, median (range) 24(19-39)

Discussion

Cancer caregiving has been consistently shown to negatively impact the physical, social, and emotional well-being of caregivers. Our study revealed that caregivers of cancer patients experienced poor quality of life and moderate to severe depression. The burden was influenced by the relationship with the patient, duration of caregiving, cancer stage, caregiver age, gender, and marital status. Similar findings have been reported elsewhere, where most caregivers experienced health issues, family conflicts, and reduced quality of life.[11-13] The presence of cancer itself serves as the main stressor, while prolonged caregiving and emotional ties further intensify the burden.[14.15] In our study, most caregivers were women (70%) and within the 41–50 year age group, which is consistent with findings from other studies where the average caregiver age ranged between 31–45 years and females constituted 60–83% of participants.[11-13] Housewives and those with secondary education were most represented, aligning with literature showing that unemployed women and individuals with lower educational backgrounds often take on caregiving roles.[16] Caregivers who were spouses or parents of patients, and those providing care for more than a year, demonstrated significantly poorer quality of life and higher depression levels, consistent with international studies highlighting the cumulative impact of emotional closeness and long-term caregiving.[17-19]

Our study also showed significant associations between quality of life and caregiver characteristics such as age (p=0.001), gender (p=0.045), caregiving duration (p=0.04), and relationship with the patient (p=0.008). Female caregivers, spouses, and long-term caregivers were especially vulnerable, findings supported by other studies demonstrating higher psychological distress in similar groups.[20-22] However, we found no significant associations with marital status, occupation, or education, which mirrors some studies but contrasts with others that identified education and employment as protective factors.[23] Overall, our results underscore the importance of psychosocial interventions, particularly for female and long-term caregivers, to mitigate depression and preserve their quality of life.

Conclusions

This study highlights that caregiving has significant adverse effects on the mental and physical health of caregivers, leading to poor quality of life and high levels of depression, particularly among family members closely involved in patient care. As caregiver well-being directly influences patient outcomes, it is essential to provide structured support, timely information, and accessible mental health services for caregivers. Interventions such as financial assistance, psychosocial support, and caregiver-focused training programs are urgently needed to strengthen their capacity, reduce the burden, and improve both caregiver and patient health outcomes.

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