RESEARCH PAPER

Depression, Anxiety and Stress in Relation to Quality of Life Among the Caregivers of Cancer Patients

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ABSTRACT

Background: Cancer is one of the leading causes of mortality worldwide and is associated with significant psychological distress not only for patients but also for their caregivers. Caregivers play an important role in providing emotional, physical, and social support to cancer patients, but the burden of caregiving may negatively affect their mental health and quality of life (QOL). The present study aimed to examine the levels of depression, anxiety, and stress among caregivers of cancer patients and to analyse their relationship with caregivers' quality of life. The study also explored the influence of gender, duration of diagnosis, and caregiver–patient relationship on quality of life.

The study used a descriptive correlational design with purposive sampling. A total of 30 caregivers aged between 22 and 76 years participated in the study. Data were collected using the Depression Anxiety Stress Scale (DASS-21) and the Caregiver Quality of Life Index-Cancer (CQOLC). Pearson product–moment correlation and independent sample t-tests were used for statistical analysis. Results revealed significant negative correlations between depression and quality of life, indicating that higher levels of depression were associated with poorer quality of life. Anxiety and stress also showed negative correlations with quality of life, although these were not statistically significant. No significant differences were found based on gender, duration of diagnosis, or relationship with the patient.

The findings highlight the importance of psychological support for caregivers of cancer patients and emphasize the need for interventions aimed at improving caregivers' mental health and overall quality of life.

Keywords: cancer, caregivers, depression, anxiety, stress, quality of life

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INTRODUCTION

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells, which may occur in almost any organ of the body. If the spread is not controlled, it may result in death (World Health Organization, 2022). Cancer has become a major public health concern worldwide, with increasing incidence and mortality rates. In India, the estimated number of new cancer cases in 2022 was approximately 1,461,427, and the burden is expected to increase in the coming years (Mathur et al., 2022).

A diagnosis of cancer affects not only the patient but also the family members who provide care and support. Family caregivers play a vital role in assisting patients during treatment, hospitalization, and recovery. However, caregiving is often associated with emotional strain, physical exhaustion, financial burden, and social disruption, which may negatively influence caregivers' psychological well-being

In India, cancer has emerged as a major public health concern. The estimated number of new cancer cases in 2022 was approximately 14,61,427, with a crude incidence rate of 100.4 per 100,000 population. It is estimated that one in nine individuals in India is likely to develop cancer during their lifetime. Furthermore, the number of cancer cases is projected to increase by about 12.8% by the year 2025 compared to 2020, indicating a growing disease burden in the country (Sathishkumar et al., 2023).

The relationship between cancer and psychological health is complex and multidimensional. A diagnosis of cancer can significantly affect an individual's mental well-being, leading to emotional distress, anxiety, depression, fear, and difficulty in adjustment. Psychological factors may also influence treatment adherence, coping ability, and overall quality of life of patients. The experience of being diagnosed with cancer often evokes strong emotional reactions such as uncertainty, fear of death, and concern about the future (Carlson & Bultz, 2003).

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Caregiving for cancer patients is considered a long-term stressful process that may lead to negative psychological and physical consequences for caregivers. Family caregivers play a crucial role in providing emotional, physical, and social support to patients during treatment and recovery. However, the continuous responsibility of caregiving can adversely affect caregivers' own health and well-being over time (Cora et al., 2012; Geng et al., 2018). Research has shown that cancer and its treatment can cause psychological distress not only in patients but also in their caregivers, who are expected to provide constant support and assistance (Kayser et al., 2007). Reviews and meta-analyses have reported that caregivers are at a higher risk of developing psychiatric problems, particularly anxiety and depression, compared to the general population. Caregivers are also more likely to seek mental health services and require psychopharmacological treatment (Cora et al., 2012).

Previous studies have indicated that family caregivers may experience psychological distress equal to or even greater than that experienced by cancer patients themselves. Cancer affects not only the individual patient but also the patient–caregiver relationship, suggesting the importance of understanding cancer at the dyadic level rather than focusing only on the patient or the caregiver alone (Li et al., 2018). Family caregivers provide essential support in disease management, but in doing so they often face physical strain, emotional stress, social difficulties, and financial burden. These challenges can significantly influence caregivers' psychological status, including levels of depression, anxiety, stress, and overall quality of life. Despite their important role, caregivers' mental health and quality of life are frequently overlooked, which represents a significant gap in the healthcare system (Metin, 2020).

Studies have also indicated that caregiver distress may vary depending on gender, duration of illness, and relationship with the patient. Understanding these factors is important for developing appropriate psychological interventions for caregivers.

Therefore, the present study was conducted to examine depression, anxiety, and stress in relation to quality of life among caregivers of cancer patients.

Objectives of the study

1. To assess the level of depression, anxiety and stress among the caregivers of cancer patients.
2. To assess the quality of life among caregivers of cancer patients.
3. To examine the relationship between depression, anxiety, stress, and quality of life.
4. To examine the influence of gender, duration of diagnosis, and caregiver–patient relationship on quality of life.

Hypotheses of the study

1. There would be a significant relationship between level of depression and quality of life among caregivers of cancer patients.
2. There would be a significant relationship between level of anxiety and quality of life among caregivers of cancer patients.
3. There would be a significant relationship between level of stress and quality of life among caregivers of cancer patients.
4. Male and female caregivers would differ significantly in relation to quality of life.
5. There would be a significant influence of other sociodemographic variables namely caregivers' relationship with the patient and the duration of diagnosis on quality of life.

METHODOLOGY

Research Design

The study adopted a descriptive correlational research design to examine the relationship between psychological distress and quality of life among caregivers of cancer patients.

Participants

The sample consisted of 30 caregivers of cancer patients aged between 22 and 76 years (M = 42.83, SD = 14.33). Participants were selected from the chemotherapy daycare unit of Indraprastha Apollo Hospitals, New Delhi. All participants provided informed consent prior to participation.

Sampling Method

Purposive sampling technique was used to select participants who met the inclusion criteria.

Inclusion Criteria

- Family caregivers of patients diagnosed with cancer
- Caregivers who could read and write English
- Caregivers willing to participate in the study

Exclusion Criteria

- Caregivers with severe psychiatric illness
- Caregivers who did not provide consent
- Caregivers of patients with additional severe chronic illnesses

Instruments

- **Socio demographic data sheet**

Structured socio demographic questionnaire is used to collect details of the caregivers and the patients which consisted of variables such as age, gender, education, religion, the relation between patient and caregiver, the type of cancer, the stage of cancer and the duration of diagnosis.

- **Caregiver Quality of Life Index- Cancer (CQOLC) (Weitzner et al. 1997)**

The CQOLC consists of 35 items that have a five-point Likert format that ranged from 0 (not at all), 1 (a little bit), 2 (somewhat), 3 (quite a bit) and 4 (very much): 10 items relate to burden, 7 to disruptiveness, 7 to positive adaptation, 3 to financial concerns and 8 single items to additional factors (disruption of sleep, satisfaction with sexual functioning, day-to-day focus, mental strain, informed about illness, protection of patient, management of patient's pain and family interest in caregiving).

Reliability and Validity- Test-retest reliability coefficient of 0.95 and Cronbach's α coefficient of 0.91 and an adequate validity has been reported by Weitzner et al.

- **Depression, Anxiety, Stress Scale (DASS-21) (Lovibond and Lovibond, 1995)**

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. Rating scale of 0, 1, 2 or 3, where 0 is Did not apply to me at all,1 Applied to me to some degree, or some of the time, 2 Applied to me to a considerable degree, or a good part of time, and 3 being Applied to me very much, or most of the time. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia, and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale sensitive to levels of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient.

Reliability and Validity- Cronbach's alpha of 0.959, which indicates excellent internal consistency. The Cronbach's alpha values for the subscales are 0.87 for anxiety, 0.92 for depression, and 0.89 for stress. Excellent convergent validity and a high degree of internal consistency.

Variables of the study

Dependent Variable: Quality of Life

Independent Variables: Depression Level, Anxiety Level, Stress Level

Socio Demographic Variables: Gender, Duration of diagnosis, Relationship with the patient

Data collection procedure

The data collection was conducted by visiting the chemotherapy day care units of Indraprastha Apollo Hospitals, New Delhi, by taking informed consent and demographic details of the patients and their caregivers and asking the caregivers to fill out the two standardized scales that are Caregivers' Quality of Life Index-Caregivers and DASS-21. Following which a short interview was also conducted to know the qualitative aspects as well.

DATA ANALYSIS

Pearson's correlation

Pearson's correlation analysis was employed to examine the linear relationship between depression, anxiety, stress, and the quality of life of caregivers. Statistical analysis was performed using SPSS software. The data obtained from the administered questionnaires were analyzed using descriptive statistics, including Mean and Standard Deviation, followed by the calculation of the Pearson correlation coefficient to determine the strength and direction of the relationship between psychological distress variables and quality of life.

T-Test

Independent sample t-tests were conducted to determine the significant differences in the quality of life of caregivers across different levels of psychological distress. The quality of life scores were compared between caregivers with moderate and severe levels of depression, anxiety, and stress separately. In addition, t-tests were also used to examine differences in quality of life based on selected socio-demographic variables, including gender (male and female caregivers), relationship with the patient (spouse and other family members), and duration of diagnosis (less than one year and more than one year).

RESULTS

The results of the present study investigating the relationship between depression, anxiety, stress, and quality of life among caregivers of cancer patients bring valuable insights into the psychological well-being of the caregivers of cancer patients.

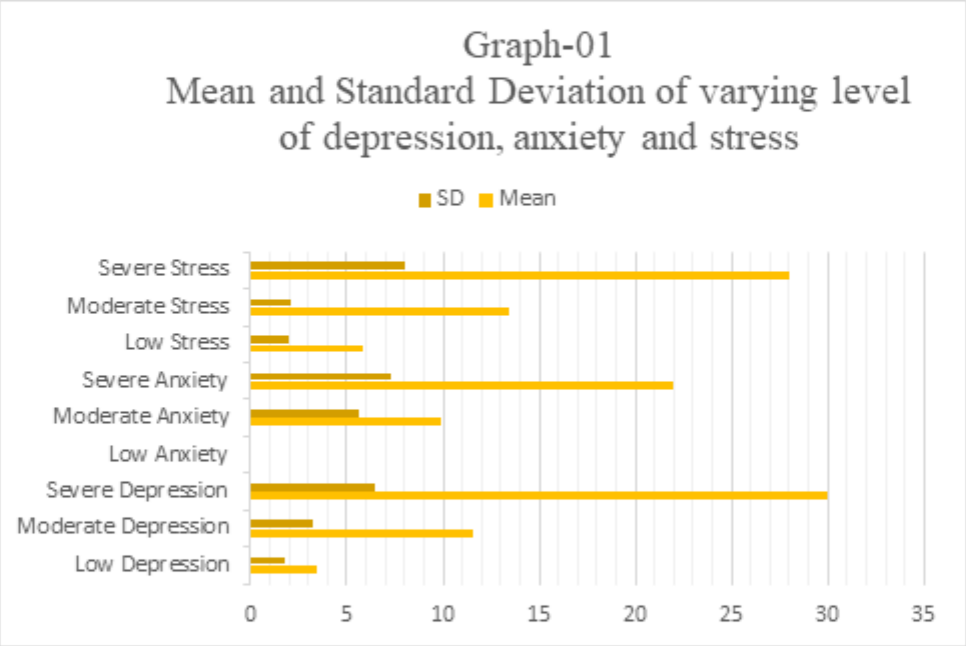

Table.1 Mean and SD of the caregivers on the varying level of depression, anxiety, and stress.

	Depression			Anxiety			Stress		
	Low	**Moderate**	**Severe**	**Low**	**Moderate**	**Severe**	**Low**	**Moderate**	**Severe**
N	14	9	7	3	18	9	10	10	10
Mean	3.42857	11.5556	30	0	9.88889	22	5.8	13.4	28
(SD)	1.82775	3.28295	6.4291	0	5.63486	7.28011	1.98886	2.08893	8

It is observed a clear distribution in Table-1 across the three categories of distress: low, moderate, and severe, with differing sample sizes in each group. For depression, the mean scores indicate a gradient of severity, with caregivers experiencing low levels averaging 3.43, those with moderate levels averaging 11.56, and those with severe levels reporting a mean score of 30. Similarly, for anxiety, we observe a progressive increase in mean scores from low (0) to moderate (9.89) to severe (22). The pattern is consistent for stress levels, with mean scores ascending from low (5.8) to moderate (13.4) to severe (28).

Table.02 Mean and SD of the caregivers on the different domains of QOL.

	CQOLC	**Burden**	**Disruptiveness**	**Positive Adaptation**	**Financial Concerns**	**Unspecified Domains**
N	30	30	30	30	30	30
Mean	84.3	21.9333	17.0667	18.9667	8.43333	17.9
(SD)	22.7159	9.46111	6.30781	4.32701	2.84888	6.35908

The Table-02 offers insight into the quality of life (QOL) of caregivers of cancer patients. The mean scores indicate a generally favourable QOL among caregivers, with an overall mean score of 84.3. Among specific domains, caregivers report moderate levels of burden (mean = 21.93) and disruptiveness (mean = 17.07), but also exhibit positive adaptation (mean = 18.97) despite facing financial concerns (mean = 8.43). Additionally, unspecified domains, which may encompass various aspects of caregivers' experiences, have a mean score of 17.9. The standard deviations provide insight into the variability of scores within each domain, indicating the range of experiences among caregivers.

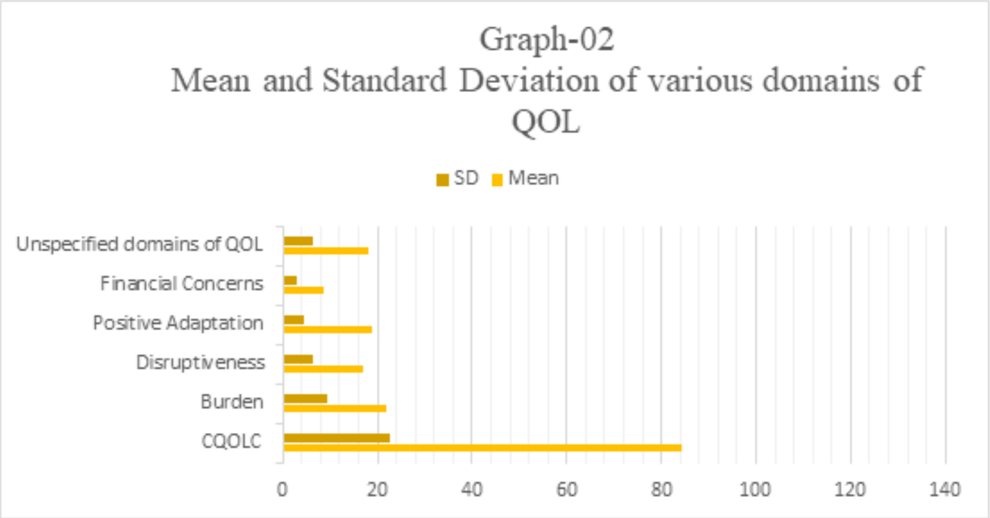

Table.03 Pearson Correlation Between Depression, Anxiety, Stress and Quality of Life

Variable	CQOLC	Burden	Disruptiveness	Positive Adaptation	Financial	Other
Depression (r)	**-0.489***	**-0.543***	**-0.277**	**-0.235**	**-0.378**	**-0.351**
Anxiety (r)	**-0.350**	**-0.358**	**-0.250**	**-0.168**	**-0.141**	**-0.319**
Stress (r)	**-0.324**	**-0.262**	**-0.341**	**-0.184**	**-0.165**	**-0.221**

Depression in relation to caregivers' QOL:

The correlation between depression and CQOL, the findings reveal a consistent negative association with overall QOL. The negative correlations indicate that higher levels of depression in caregivers are associated with lower scores in various aspects of quality of life. A significant negative correlation exists between depression and overall QOL and Burden suggesting that as depression levels increase, caregivers report feeling more burdened and experiencing lower overall quality of life. The correlations with Disruptiveness, Positive Adaptation, Financial Concerns and the other unspecified domains such as mental strain, disruption of sleep, satisfaction with sexual functioning, etc. are weaker but still negative, indicating that higher depression levels are associated with less of these domains of QOL, although these correlations did not reach statistical significance.

The moderate negative correlations observed between depression and overall QOL and various aspects of CQOL, such as Burden, are consistent with previous research. For instance, Pinquart and Sörensen's meta-analysis (2003) elucidated a strong link between caregiver depression and diminished subjective well-being, underlining how heightened depressive symptoms are predictive of poorer quality of life outcomes among caregivers. Moreover, longitudinal investigations, such as Schulz et al., study (2003), underscore the enduring toll of depression, showcasing how caregivers with elevated depressive symptoms experience exacerbated declines in health-related quality of life over time.

Anxiety in relation to caregivers' QOL:

The correlation between anxiety and CQOL, although the statistical significance at the conventional level was not attained, the observed negative trends echo broader research on caregiver well-being. Like depression, there are negative correlations between anxiety and aspects of quality of life. While these correlations are negative, indicating that higher anxiety levels are associated with lower quality of life and burden, they did not reach statistical significance at the conventional level. However, they are close to significance, suggesting a trend worth further investigation.

While findings may vary in significance, studies like Haley et al.'s (2004) cross-sectional examination elucidate a discernible connection between caregiver anxiety and compromised psychological well-being. Such insights imply that elevated anxiety levels may contribute to a nuanced deterioration in the quality of life among caregivers, warranting further investigation into underlying mechanisms.

Stress in relation to caregivers' QOL:

Stress also shows negative correlations with overall QOL and various aspects of caregiver quality of life. However, unlike depression, none of these correlations reach statistical significance, suggesting that stress may not have as strong of an impact on caregiver quality of life as depression does, at least in this sample. It is worth noting that the correlations, while not statistically significant, still indicate a negative relationship, implying that higher stress levels tend to be associated with lower quality of life for caregivers.

Its implications for caregiver well-being are well-documented in prior research. Schulz and Beach's longitudinal inquiry (1999) underscored the enduring impact of caregiver stress, demonstrating how heightened stress levels predict diminished physical health and overall quality of life over time. Additionally, Vitaliano et al.'s systematic review (2003) highlighted the pervasive consequences of chronic stress on caregiver well-being, emphasizing the potential for stress reduction interventions to enhance overall quality of life among caregivers.

In synthesis, the findings underscore the nuanced interplay between caregiver psychological well-being and quality of life outcomes. Depression has the strongest and most consistent impact on caregiver quality of life, with statistically significant negative correlations observed for overall QOL and burden. Anxiety and stress also show negative correlations with quality of life, although these correlations did not reach statistical significance in this sample. These findings underscore the importance of addressing caregivers' psychological well-being, particularly depression, to improve their quality of life and overall caregiving experience. Future research with larger sample sizes could further explore the relationships between anxiety, stress, and caregiver quality of life, potentially uncovering additional insights into the psychological factors influencing caregiver well-being.

Table.04 Comparison of Quality of Life Scores between Varying Level of Depression, Anxiety, and Stress

Variable	**Quality of Life**			**T-Test**
	N	Mean	SD	
Moderate Depression	9	82.22	18.65	2.18^{*}
Severe Depression	7	61.71	18.64	
Moderate Anxiety	18	87.83	20.77	$1.92^{@}$
Severe Anxiety	9	71.11	22.65	
Moderate Stress	10	78.9	20.84	$0.67^{@}$
Severe Stress	10	72.2	24.08	

Furthermore, comparison of quality of life (QOL) scores among caregivers experiencing varying levels (moderate and severe) of depression, anxiety, and stress provided valuable insights.

For caregivers experiencing moderate depression reported a significantly higher mean quality of life score (M = 82.22, SD = 18.65) compared to those in the severe depression group (M = 61.71, SD = 18.64), t(14) = 2.18, $p < 0.05$. This considerable difference highlights the significant impact of depression severity on perceived quality of life, with caregivers experiencing moderate depression showing a more positive perception of their overall well-being compared to those with severe depression.

Caregivers in the moderate anxiety group exhibited a higher mean quality of life score (M = 87.83, SD = 20.77) compared to those in the severe anxiety group (M = 71.11, SD = 22.65), t(25) = 1.92, but not statistically significant. This finding underscores the impact of severe anxiety on quality of life, with caregivers experiencing moderate anxiety reporting a more positive perception of their overall well-being compared to those with severe anxiety.

Caregivers in the moderate stress group displayed a slightly higher mean quality of life score (M = 78.9, SD = 20.84) compared to those in the severe stress group (M = 72.2, SD = 24.08), t(18) = 0.67, $p > 0.05$. While the difference in quality of life between the two stress severity groups was less marked compared to depression and anxiety, it suggests a trend where caregivers experiencing moderate stress tend to perceive their overall well-being slightly more positively than those with severe stress.

Table.05 Comparison of Quality-of-Life Scores by Gender, Duration of Diagnosis, and Caregiver's Relationship with the Patient

Variable		**Quality of Life**			**T-Test**
		N	Mean	SD	
Gender	Male	19	85.47	21.33	$0.366^{@}$
	Female	11	82.27	25.9	
Duration of diagnosis	Less than 1 year	23	83.65	24.13	$0.279^{@}$
	More than 1 year	7	86.43	18.76	
Relation with the patient	Spouse	12	85.17	27.72	$0.168^{@}$
	Others	18	83.72	19.55	

Ultimately, the differences in the QOL in the caregivers were also assessed based on their sociodemographic profile such as gender, relation with the patient and the duration of the diagnosis.

Firstly, when comparing male and female caregivers, the mean quality of life score for males (M = 85.47, SD = 21.33) was slightly higher than that for females (M = 82.27, SD = 25.9), although the difference was not statistically significant, t(28) = 0.366, $p > 0.05$. This suggests that there may be a slight tendency for males to perceive their quality of life more positively compared to females, but further investigation with a larger sample size may be needed to confirm this trend.

Secondly, comparing caregivers based on the duration since the patient's cancer diagnosis (less than 1 year vs. more than 1 year). Caregivers with a cancer diagnosis of more than 1 year reported a slightly higher mean quality of life score (M = 86.43, SD = 18.76) compared to those diagnosed less than 1 year ago (M = 83.65, SD = 24.13), although the difference was not statistically significant, t(28) = 0.279, p > 0.05. This suggests that there may be a tendency for caregivers with a longer duration of cancer diagnosis to perceive their quality of life slightly more positively.

Lastly, when comparing spouse caregivers to other family caregivers, there was no statistically significant difference in quality of life between caregivers who were spouses of the patients (M = 85.17, SD = 27.72) and those who had other relationships with the patients (M = 83.72, SD = 19.55), t(28) = 0.168, p > 0.05.

This suggests that the type of relationship with the patient may not significantly influence caregivers' perception of their quality of life.

It is important to consider the limitations of the study, including the sample size and potential confounding variables not accounted for in the analysis. Future research with larger sample sizes or different methodologies may help elucidate whether these observed differences are consistent across populations or whether they vary depending on other factors.

CONCLUSION

In conclusion, this study contributes to our understanding of the nuanced relationship between psychological distresses and quality of life among caregivers of cancer patients. By highlighting the significant impact of depression, anxiety, and stress on caregiver well-being, as well as the potential influence of sociodemographic factors, these findings underscore the importance of holistic support and personalized interventions to enhance caregiver resilience and overall quality of life.

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