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Evaluating the Psychosocial Burden of Cancer Therapy on Patient Support Systems: A Cross-Sectional Analytical Study.

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Abstract

Background: Cancer caregiving is associated with significant psychosocial challenges, often leading to emotional distress and reduced quality of life among caregivers. ***Objectives:*** To assess the psychosocial impact of cancer treatment on caregivers and to identify factors associated with increased caregiver burden. ***Methods:*** A hospital-based cross-sectional study was conducted among 106 caregivers of cancer patients undergoing treatment. Data were collected using a semi-structured questionnaire. Psychological distress was assessed using the Hospital Anxiety and Depression Scale, caregiver burden using the Zarit Burden Interview, and quality of life using WHOQOL-BREF. Statistical analysis was performed using the Statistical Package for the Social Sciences, with $p < 0.05$ considered significant. ***Results:*** The majority of caregivers experienced moderate to high levels of psychological distress. Anxiety was observed in 62.3% and depression in 56.6% of participants. Nearly 67.9% reported moderate to severe caregiver burden. Poor to average quality of life was noted in 73.6% of caregivers. Advanced stage of cancer ($p = 0.002$), longer duration of caregiving ($p = 0.01$), and lower socioeconomic status ($p = 0.004$) were significantly associated with higher psychosocial burden. ***Conclusion:*** Caregivers of cancer patients experience considerable psychosocial challenges, influenced by clinical and socioeconomic factors. Incorporating caregiver support strategies into oncology services is essential to improve their well-being and overall care outcomes.

Keywords: Cancer caregivers, psychosocial impact, caregiver burden, anxiety, depression, quality of life.

INTRODUCTION

Cancer is a major global public health concern and one of the leading causes of morbidity and mortality worldwide. According to the World Health Organization, cancer accounted for nearly 10 million deaths globally in 2020, with a disproportionately rising burden in low- and middle-income countries, including India[1]. Advances in cancer detection and treatment have improved survival rates; however, these gains have shifted a significant portion of care from hospital settings to homes, increasing reliance on informal caregivers making them an indispensible part of patient support system. Family caregivers play a crucial role in supporting cancer patients throughout the disease trajectory, including during diagnosis, treatment, and palliative care. They are often responsible for managing symptoms, coordinating healthcare services, providing emotional support, and handling financial and logistical challenges. While caregiving can be rewarding, it is also associated with substantial physical, emotional, social, and economic strain. Previous studies have demonstrated that caregivers frequently experience high levels of psychological distress, including anxiety, depression, and stress, which may adversely affect their overall well-being and quality of life.

The concept of "caregiver burden" encompasses the multidimensional strain experienced by caregivers, including emotional exhaustion, role disruption, and financial hardship. Zarit et al. first described caregiver burden as a measurable construct and highlighted its significant impact on mental health and daily functioning[2]. In the context of cancer, the toll is often amplified due to the unpredictable disease course, intensive treatment regimens, and fear of disease progression or recurrence. Several studies have reported a high prevalence of psychological morbidity among caregivers of cancer patients. Adelman et al. observed that caregivers frequently experience clinically significant levels of anxiety and depression, often comparable to or exceeding those of the patients themselves[3] . Similarly, Geng et al. found that more than half of cancer caregivers reported depressive symptoms, with contributing factors including advanced disease stage, financial strain, and lack of social support[4]. The type and intensity of cancer treatment also influence caregiver

experiences. Multimodal treatments such as combinations of surgery, chemotherapy, and radiotherapy often require prolonged hospital visits, increased monitoring for adverse effects, and complex decision-making. Studies by Longacre et al. and Kim and Schulz have shown that prolonged and intensive treatment regimens significantly increase caregiver stress and emotional strain[5,6].

In addition to psychological distress, caregiving can significantly impact quality of life. Caregivers often experience reduced physical health, social isolation, and occupational disruption. Weitzner et al. developed the Caregiver Quality of Life Index-Cancer (CQOLC) and demonstrated that caregiving adversely affects multiple domains of quality of life, particularly emotional and social functioning[7]. Importantly, several factors have been identified as predictors of increased caregiver burden, including advanced stage of cancer, longer duration of caregiving, and lower socioeconomic status. Grunfeld et al. and Given et al. reported that disease severity and prolonged caregiving are strongly associated with increased caregiver stress and poorer outcomes[8,9]. In low-resource settings, financial constraints further exacerbate the psychosocial impact on caregivers. Despite growing recognition of caregiver burden globally, there is limited data from India, particularly from tertiary care centers in Tamil Nadu, assessing the combined impact of clinical and socioeconomic factors on caregivers. Understanding these factors is essential for developing targeted interventions to support caregivers and improve both caregiver and patient outcomes. Therefore, the present study was undertaken to assess the psychosocial impact of cancer therapy on the support systems (caregivers) of cancer patients and to identify factors associated with increased caregiver burden in a tertiary care setting.

AIM AND OBJECTIVES

Aim

To evaluate the psychosocial burden of cancer treatment on caregivers of cancer patients.

Objectives

1) To assess the level of psychological distress (such as anxiety, depression, and stress) among caregivers of cancer patients undergoing treatment.
2) To evaluate the social and functional impact (including caregiver burden, role disruption, and quality of life) experienced by caregivers.
3) To identify factors associated with increased psychosocial burden among caregivers (such as patient disease stage, duration of caregiving, socioeconomic status, and type of treatment).

MATERIALS AND METHODS

Study Design and Setting

This study was a hospital-based cross-sectional analytical study conducted in the Department of Radiotherapy at a tertiary care teaching hospital in Tamil Nadu, India. The study was carried out over a period of 8 months from Aug 2025 to Mar 2026.

Study Population

The study population included the patient support system - theprimary caregivers of cancer patients undergoing active treatment (chemotherapy, radiotherapy, or surgery) at the study center. A primary caregiver was defined as an individual who provided the majority of physical, emotional, or financial support to the patient during the course of illness.

Sample Size

The sample size was calculated using the formula for estimating a proportion:

$$n=(Z^2\times p\times q)/d^2$$

Assuming a prevalence (p) of 50% for psychosocial distress among caregivers based on previous studies, with 95% confidence level (Z = 1.96) and 10% allowable error (d = 0.1):

$$n=(1.96)^2\times 0.5\times 0.5/(0.1)^2 = 96.$$

After accounting for a 10% non-response rate, the final sample size was 106 caregivers.

Sampling Technique

A consecutive sampling method was used. All eligible caregivers attending the oncology department during the study period were approached and recruited until the required sample size was achieved.

Inclusion Criteria
- Caregivers aged ≥18 years
- Primary caregivers of patients diagnosed with cancer and undergoing treatment
- Caregivers who had been involved in caregiving for at least 1 month

Exclusion Criteria
- Caregivers with a known history of psychiatric illness
- Caregivers of critically ill patients unable to participate

Study Tools and Data Collection
Data were collected using a pre-tested semi-structured questionnaire, which consisted of the following components:

1. Socio-demographic Details
Information regarding age, gender, education, occupation, marital status, and socioeconomic status (using modified BG Prasad classification) was collected.

2. Clinical and Caregiving Profile
Details of the patient (type of cancer, stage, treatment modality) and caregiving characteristics (duration of caregiving, relationship to patient) were recorded.

3. Psychological Assessment
- Anxiety and Depression were assessed using the Hospital Anxiety and Depression Scale.
- The scale consists of 14 items (7 each for anxiety and depression), scored from 0–3.
- Scores were categorized as normal, mild, moderate, and severe.

4. Caregiver Burden
- Assessed using the Zarit Burden Interview.
- It evaluates the perceived burden among caregivers and categorizes it into mild, moderate, and severe burden.

5. Quality of Life
- Measured using the WHOQOL-BREF.
- It assesses four domains: physical, psychological, social, and environmental health.

Data Collection Procedure
Eligible caregivers were identified during their hospital visits. After explaining the purpose of the study, written informed consent was obtained from all study participants. Interviews were conducted in a private setting to ensure confidentiality. Each interview lasted approximately 20–30 minutes.

Ethical Considerations
- Ethical approval was obtained from the Institutional Ethics Committee (IEC**)** prior to the commencement of the study.
- Participation was voluntary, and confidentiality was strictly maintained.
- Participants were assured that refusal to participate would not affect the patient's treatment.
- Caregivers identified with severe psychological distress were referred for appropriate counseling.
- This cross - sectional study was was conducted in accordance with the Helsinki Declaration of 1975 as revised in 2024.

Statistical Analysis
Data were entered into Microsoft Excel and analyzed using SPSS v26.
- Descriptive statistics: Frequencies, percentages, mean, and standard deviation were calculated.
- Inferential statistics:
  - Chi-square test was used to assess association between categorical variables
  - Independent t-test/ANOVA was used for comparison of means (if applicable)
- A p-value < 0.05 was considered statistically significant.

Operational Definitions
- Psychological distress: Presence of anxiety and/or depression based on HADS scoring
- High caregiver burden: Moderate to severe burden based on Zarit scale
- Poor quality of life: WHOQOL-BREF scores below the mean in ≥2 domains.

RESULTS

A total of **106 caregivers** of cancer patients undergoing treatment were included in the study. The results are presented as follows:

Table 1: Socio-demographic Characteristics of Caregivers (n = 106)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	<30	18	17.0
	30–50	56	52.8
	>50	32	30.2
Gender	Male	48	45.3
	Female	58	54.7
Marital Status	Married	88	83.0
	Unmarried	18	17.0
Education	≤Primary	28	26.4
	Secondary	46	43.4
	Graduate & above	32	30.2
Occupation	Employed	44	41.5
	Unemployed/Homemaker	62	58.5
Socioeconomic Status	Lower	36	34.0
	Middle	52	49.1
	Upper	18	16.9

Table 2: Clinical Profile of Patients and Caregiving Characteristics (n = 106)

Variable	Category	Frequency (n)	Percentage (%)
Type of Cancer	Solid tumor	78	73.6
	Hematological	28	26.4
Stage of Cancer	Early (I–II)	38	35.8
	Advanced (III–IV)	68	64.2
Type of Treatment	Radiotherapy	54	51.0
	Chemotherapy	34	32.1
	Surgery → Adjuvant RT/CT	18	16.9
Duration of Caregiving	<6 months	34	32.1
	6–12 months	40	37.7
	>12 months	32	30.2
Relationship to Patient	Spouse	46	43.4
	Child	38	35.8
	Others	22	20.8

Table 3: Psychological Distress Among Caregivers (n = 106)

Variable	Category	Frequency (n)	Percentage (%)
Anxiety (HADS)	Normal	40	37.7
	Mild	32	30.2
	Moderate	22	20.8
	Severe	12	11.3
Depression (HADS)	Normal	46	43.4
	Mild	30	28.3
	Moderate	20	18.9
	Severe	10	9.4
Stress Level	Low	38	35.8
	Moderate	44	41.5
	High	24	22.6

Table 4: Caregiver Burden and Quality of Life (n = 106)

Variable	Category	Frequency (n)	Percentage (%)
Caregiver Burden (Zarit Scale)	Mild	34	32.1
	Moderate	48	45.3
	Severe	24	22.6
Quality of Life (WHOQOL-BREF)	Good	28	26.4
	Average	50	47.2
	Poor	28	26.4
Social Impact	No significant impact	30	28.3
	Moderate impact	52	49.1
	Severe impact	24	22.6

Table 5: Factors Associated with High Psychosocial Burden

Variable	Category	High Burden n (%)	Low/Moderate Burden n (%)	p-value
Stage of Cancer	Early	8 (21.1)	30 (78.9)	0.002*
	Advanced	38 (55.9)	30 (44.1)	
Duration of Caregiving	<6 months	10 (29.4)	24 (70.6)	0.01*
	≥6 months	36 (50.0)	36 (50.0)	
Socioeconomic Status	Lower	24 (66.7)	12 (33.3)	0.004*
	Middle/Upper	22 (31.4)	48 (68.6)	
Gender	Male	16 (33.3)	32 (66.7)	0.08
	Female	30 (51.7)	28 (48.3)	

*Statistically significant ($p < 0.05$)

DISCUSSION

The present study assessed the psychosocial impact of cancer treatment on caregivers and identified factors associated with increased caregiver burden. The findings demonstrate a substantial level of psychological distress, caregiver burden, and compromised quality of life among caregivers, which is consistent with existing literature.

Sociodemographic Characteristics

In this study, the majority of caregivers were aged 30–50 years (52.8%), with a slight female predominance (54.7%). This aligns with studies by Sharma et al. and Mishra et al., which reported that middle-aged individuals, particularly females, often assume caregiving roles due to sociocultural expectations and family structure in India[10,11] . The predominance of married caregivers (83%) and those from middle socioeconomic status (49.1%) is also consistent with findings from Geng et al., who observed that family caregivers are usually spouses or close relatives with shared household responsibilities[4] .

Clinical Profile and Treatment Modalities

Most patients in the present study had solid tumors (73.6%) and advanced-stage disease (64.2%), similar to findings by Kim and Schulz, who reported that caregiver burden is higher in advanced cancer due to increased care demands and uncertainty of prognosis[6]. Notably, a higher proportion of patients underwent radiotherapy-based multimodal treatment (51%), followed by chemotherapy and surgery. Multimodal treatment approaches have been associated with prolonged treatment duration and increased caregiving demands. Longacre et al. highlighted that intensive and prolonged cancer treatments significantly increase caregiver stress due to frequent hospital visits and side-effect management[8] .

Psychological Distress

A high prevalence of anxiety (62.3%) and depression (56.6%) was observed among caregivers in this study. These findings are comparable to those reported by Adelman et al., who found anxiety and depressive symptoms in more than half of cancer caregivers[3] . Similarly, Pitceathly and Maguire reported significant psychological morbidity among caregivers, especially in those caring for patients with advanced disease[12]. The proportion of caregivers experiencing moderate to severe stress (64.1%) in the present study is consistent with Bevans and Sternberg, who emphasized that caregiving is associated with chronic stress due to emotional, financial, and physical demands[13] .

Caregiver Burden and Quality of Life

In this study, 67.9% of caregivers experienced moderate to severe burden, which is comparable to findings by Zarit et al., who originally developed the caregiver burden scale and demonstrated similar levels of burden in chronic illness caregiving[2] . Studies by Rhee et al. and Ugalde et al. also reported that cancer caregivers frequently experience significant burden affecting their physical and emotional well-being[14,15]. Regarding quality of life, 73.6% of caregivers reported poor to average quality of life. This is consistent with Weitzner et al, who found that caregiving negatively impacts multiple

domains of quality of life, including psychological and social functioning[7]. . The disruption of daily routines and social roles contributes significantly to this decline.

Factors Associated with Psychosocial Burden

The present study identified advanced stage of cancer, longer duration of caregiving, and lower socioeconomic status as significant predictors of higher caregiver burden. Caregivers of patients with advanced-stage cancer showed significantly higher burden ($p = 0.002$), which is in agreement with Grunfeld et al., who reported that disease severity is a major determinant of caregiver stress[14]. Similarly, Given et al. found that caregiving burden increases with disease progression and symptom severity[9] Duration of caregiving was also significantly associated with increased burden ($p = 0.01$). This finding is supported by Kim et al., who demonstrated that prolonged caregiving leads to cumulative stress and burnout[16]. Lower socioeconomic status was another significant factor ($p = 0.004$), consistent with findings from Geng et al., who reported that financial strain exacerbates caregiver distress, particularly in low-resource settings[4]. Although female caregivers showed higher burden compared to males, the association was not statistically significant ($p = 0.08$). This is in contrast to some studies (e.g., Pinquart and Sörensen) that reported significantly higher burden among females, possibly due to gender-based role expectations[17] . The lack of significance in the present study may be due to sample size or cultural variations.

Implications

The findings of this study highlight the need for integrating caregiver support into oncology care. Psychological counseling, social support systems, and financial assistance programs should be incorporated into routine cancer management to reduce the distress endured by caregivers and improve overall treatment outcomes.

CONCLUSION

The present study highlights the substantial psychosocial burden experienced by caregivers of cancer patients undergoing treatment. A significant proportion of caregivers reported varying degrees of anxiety, depression, and stress, indicating that caregiving extends beyond physical responsibilities to include considerable emotional strain. Moderate to severe caregiver burden was observed in the majority, reflecting the challenges associated with prolonged caregiving, financial constraints, and uncertainty regarding patient outcomes. The study also demonstrates that factors such as advanced stage of cancer, longer duration of caregiving, and lower socioeconomic status are significantly associated with higher psychosocial burden. These findings emphasize the need for early identification of at-risk caregivers and implementation of supportive interventions. Integrating caregiver-focused services, including psychological counseling, support groups, and health education, into routine oncology care can improve both caregiver well-being and patient outcomes. Addressing caregiver needs should be considered an essential component of comprehensive cancer care.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

Rasi.S : Conceptualization, Data curation, Formal analysis, Investigation, Writing – original draft preparation, Writing – review & editing. K.L. Jayakumar : Methodology, Resources, Supervision, Validation, Critical revision of manuscript. All authors read and approved the final manuscript.

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