ORIGINAL RESEARCH ARTICLE

Impact of Comprehensive Caregiver Support on Self-Efficacy, Quality of Life and Caregiving Burden among Caregivers of Cancer Patients

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ABSTRACT

Background: Informal caregivers of cancer patients often experience reduced self-efficacy, impaired quality of life (QOL), and high caregiving burden. The aim of this study was to evaluate the impact of Comprehensive Caregiver Support on these outcomes.

Methods: A quasi-experimental non-equivalent control group design was conducted among 65 caregivers in a tertiary care hospital in North India. Participants were allocated to experimental (n=33) and comparison (n=32) groups. The intervention included deep breathing exercises, symptom management training, financial aid awareness, and device demonstration over five days. Outcomes were measured at baseline, day 7, and day 14 using CSE-8, AC-QOL, and Modified Caregiver Burden Scale. Independent t-test and repeated measures ANOVA were applied.

Results: Baseline scores were comparable between groups ($p>0.05$). At day 14, the experimental group showed significantly higher self-efficacy (68.52±3.24 vs 33.47±8.21), improved QOL (98.7±4.72 vs 55.7±6.87), and lower burden (19.36±5.85 vs 51.44±4.37) compared with controls ($p=0.01$). Large effect sizes were observed (Cohen's d 5.61–7.27). Self-efficacy positively predicted QOL ($\beta=0.627$, $p=0.001$) and negatively predicted burden ($\beta=-0.424$, $p=0.01$).

Conclusion: Comprehensive Caregiver Support significantly enhances self-efficacy and quality of life while reducing caregiving burden among cancer caregivers. Integrating structured caregiver training into oncology services may improve caregiver well-being.

Keywords: Cancer Caregivers, Self-Efficacy, Quality of Life, Caregiver Burden, Quasi-Experimental Study, Psychosocial Intervention

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INTRODUCTION

Cancer remains a pressing global health challenge that calls for sustained attention and action.[1] By 2050, the total number of cancer cases is likely to increase to 35.3 million, an upsurge of 76.6% from the 2022 estimate of twenty million.[2] Asia reported nearly fifty percent of all cases (49.2%) and the maximum percentage of cancer fatalities (56.1%) in 2022, while Europe recorded about 25% of all cases (22.4%) and 20.4% of cancer fatalities.[3]

After the cancer diagnosis, the responsibility of a caregiver starts. Family caregivers play a substantial role during the cancer treatment process.[4] Providing care for cancer patients is often difficult.[5] Caregivers sometime feel overburdened due to the complicated cancer care chores while juggling pressure at work and at home. When it comes to medical chores, they may feel unprepared and lack the support required for appropriate training.[6] Caregivers are troubled in numerous extents which vary from physical, psychological, financial and social, and the unceasing emotional suffering of witnessing a treasured one suffering the enduring consequences of cancer.[7,8] Most of the studies have found a decline in quality of life (QOL) with the surge in burden of caregiving.[7,9]

A cancer diagnosis disturbs not only the patient's Quality of life but also indirectly influences that of their family caregivers in many ways. The Quality of life of informal caregivers can be impacted by low self-efficacy in caring, which can cause people to evade caregiving responsibilities and is linked to mental health symptoms like stress, anxiety, and depression.[10] Informal caregivers of cancer patients have substantial burdens. They are prone to worsening their quality of life (QOL).[11,12]

During the initial six months, especially after the diagnosis, informal Caregivers might even feel more anxious than the patients themselves. They have more chances than patients to use specific detrimental coping mechanisms. Studies on cancer caregivers have examined the connection between stress, wellbeing, and self-efficacy and found that caregivers with higher self-efficacy had lower psychological distress and a higher QOL.[13] Self-efficacy is a crucial personal resource that empowers individuals to overcome challenges and are actively involved in health-promoting deeds during therapeutic treatment.[14]

Caregivers of cancer patients may face substantial obstacles due to numerous unmet supporting care requirements. Understanding the patient's condition, available treatments and parts of their care can bring more confidence and can enable them to effectively navigate their roles.[15] Concentrated efforts are required to lessen the burden of caregivers and advance their quality of life. This can be attained if health care professionals methodically work together with patients and family members.[16] Professionals seeking to enhance family caregivers' quality of life can focus on reducing caregiving burden and building self-efficacy.

Self-efficacy, defined as one's belief in their capability to execute responsibilities and achieve goals is positively associated with QOL. Additionally, mental stress can hinder self-management and motivation, making it more difficult to engage in health-promoting behaviors and worsening health-related QOL.[17,18]

An integrative body-mind training technique for handling stress and psychosomatic illnesses is breathing exercises, sometimes mentioned to as "deep breathing" or "diaphragmatic breathing". By contracting the diaphragm, expanding the abdomen, and lengthening the inhale and exhalation, diaphragmatic breathing lowers the frequency of breathing.[19]

In Indian setting, there are limited research studies that focused on the Self-efficacy of caregivers to manage symptoms of their family member having cancer. Only a handful of previous trainings have addressed caregivers-burden management and suggested measures to improve Quality of life. Therefore, the following study aims to test the impact of 5 days individualized caregivers programme (Comprehensive Caregiver Support) encompassing bundle of interventions including deep breathing exercise, awareness on management of side effects of chemotherapy and radiation therapy and demonstration of patient care devices on self-efficacy, quality of life and caregiving-burden.

METHODOLOGY

The study followed a quantitative research approach. A quasi-experimental design, specifically a non-equivalent control group with pre-test and post-test was employed to assess the effect of Comprehensive Caregiver Support on the self-efficacy, quality of life and caregiving-burden of individuals caring for cancer patients. Ethical clearance for the study was obtained from the Ethics Committee of MM (Deemed to be University), Mullana, Ambala, Haryana (Ref no. IEC-3021, dated 30/10/2024).

The study took place in the Oncology ward of MMIMS&R Hospital, Mullana (Ambala), Haryana which is a multispecialty hospital located in North India. The sample size was determined using Cohen's D formula based on the findings of the pilot study. Based on power analysis, the estimated effect size was 0.8 and recommended sample size for each group was 26, resulting in a total of 52 eligible caregivers of cancer patients. In this study, a total of 70 patients were recruited to account for a possible attrition rate.

A convenience sampling technique was employed to select a sample of 70 caregivers of cancer patients. These participants were divided into two groups: An Experimental Group and a Comparison Group. The study included participants who were unpaid adult caregivers; being able to dedicate at least three hours daily to caregiving; capable of reading and writing in Hindi or English and willing to take part in the study.

In this study, Independent Variable was Comprehensive Caregiver Support provided to the family caregivers of patients suffering from cancer. Dependent variables were self-efficacy, Quality of life and caregiving burden among caregivers. The tools used for data collection were standardized self-efficacy for caregiving (CSE-8)[20], Quality of life (AC-QOL)[21], caregiving-burden (Modified caregiver burden tool)[22].

CSE-8 is a standardized tool consisting of 8 items, which are related to the Self- efficacy of caregivers. These items were in the form of 10-point rating scale. Respondents had to circle the number that corresponds with how sure he/she was to do the tasks regularly at the present time. Higher number indicates higher self- efficacy. The possible range of scores was 8 to 80 with higher scores indicating greater self-efficacy.[20]

The Adult Carer Quality of Life Questionnaire (AC-QOL) is a 40-item instrument that measures the overall quality of life for adult carers, and subscale scores for eight domains of quality of life. Scores on the overall questionnaire had a possible range of 0 to 120 with higher scores indicating greater quality of life.[21]

Modified Caregivers Burden Scale is comprised of 22 items to measure the caregiving burden among the caregivers of Cancer patients. The response alternatives were on the scale of 1 to 4. The maximum possible score was 88 and minimum score was 22 with higher scores indicating higher burden.[22]

Due permission was taken from the authors beforehand. Experts in the field of medicine and nursing ensured the content validity of the tools and the intervention. Internal Consistency of CSE-8, AC-QOL, Modified Caregivers Burden tool was measured using Cronbach alpha formula and was found to be 0.83, 0.71 and 0.88. Stability of the Self-efficacy (CSE-8), Quality of life (AC- QOL) and caregiving-burden (Modified Caregivers Burden) tools were also measured by Pearson coefficient correlation formula and it was found to be 0.94, 0.76, 0.82 respectively which indicated that all the tools used in the study were reliably measuring the critical attributes.

Description of Intervention (Comprehensive Caregiver Support)

Comprehensive Caregiver Support is a multicomponent intervention consisted of training of caregivers on Deep breathing exercise, symptom management, financial aids and patient care devices handling. It comprised of Deep breathing session for 10 minutes twice a day from day 2 to day 14 (Morning & Evening) and Symptom management training for 15 minutes daily till day 6 were continued. The bedside demonstration of patient care (Catheter Care, Tracheostomy Care, Nasogastric tube feeding, dressing of wound, Urinary Catheter Care) as per the need of patient was given for 15 minutes on day 5. Session on Government policies and schemes regarding financial aid Cancer pension for cancer patients was given for 15 minutes to the caregivers on day 6. Study participants were made aware of the state wise government cancer pension scheme and procedure to access the pension. (Table 1)

A pilot study was done in November 2024 to assess the practicability for the main study. Data collection for the final study took place between December 2024 and February 2025. Written informed consent was attained from all participants and they were guaranteed the privacy of their responses. Participants were selected for both groups after obtaining consent in Hindi, explaining the purpose of the study, and confirming both the availability of the caregiver and the hospitalization status of the patient. To prevent contamination of data between groups, data collection for the Comparison Group was completed before initiating data collection from the Experimental Group. Pre-test was taken on day 1st of enrolment & Post-test was conducted on the 7th and 14th days.

Pre-test included assessment of demographic characteristics, self -efficacy, QOL and caregiving burden of caregivers of cancer patients. Intervention to the Experimental group started from day 2nd day that consisted of Deep breathing exercise session for 10 minutes twice a day (Morning & Evening) and Symptom management training {Shortness of Breath, Nausea/Vomiting, Diarrhea} for 15 minutes. On day 3rd, Deep breathing exercise session for 10 minutes twice a day (Morning & Evening), Symptom management training {Mucositis, Dryness of mouth, Anorexia & Constipation} was given to the caregivers of cancer patients for 15 minutes. At day 4, Deep breathing exercise session for 10 minutes twice a day (Morning & Evening) was given along with Symptom management training {Patient Pain and Fatigue among caregivers} and awareness session on Government policies and schemes regarding financial aid Cancer pension for cancer patients was given for 15 minutes. On day 5th, Deep breathing exercise session and Bed side demonstration of patient care (Catheter Care, Tracheostomy Care, Nasogastric tube feeding, dressing of wound, Urinary Catheter Care) as per the need of patient was given for 15 minutes. On day 6th, Deep breathing exercise was repeated for 10 minutes. Bed side re-demonstration of patient care devices (Tracheostomy Care, Nasogastric tube feeding, dressing of wound, Urinary Catheter Care) was taken from the caregivers of cancer patients for 15 minutes following which post-test 1st was taken on 7th day and deep breathing was repeated in morning- evening session for 10 minutes by caregivers up to 2nd post-test. The 2nd post-test was taken on 14th day or day of discharge. (Table 1 and Table 2)

SPSS 20.0 software was employed for analysis of data. Frequencies, percentages, and means were calculated under descriptive statistics. Parametric tests were used for the analysis of data. The chi square test was applied to ascertain whether or not the two groups were homogenous based on the clinical factors of the patients as well as the demographic characteristics of patients and caregivers. The mean score of self-efficacies, Quality of life and caregiving-burden before and after the intervention were compared using an independent t-test and Repeated measures ANOVA. The Pearson correlation of coefficient was utilized to analyze the relationship between the study variables.

RESULTS

The results showed that the mean age of family Caregivers were 40.09±15.2 years in Experimental group and 35.9±13.2 years in Comparison group. Most of the patients' caregivers in the Experimental group (66.7%) and Comparison group (56.2%) were the children of cancer patients and male. None of the caregivers were using any relaxation technique. Majority of the caregivers did not have previous experience in caregiving to the cancer patients. Experimental group and Comparison group were found to be homogeneous and comparable with respect to Caregivers sample characteristics at baseline.

Most of the cancer patients in the Experimental group (72.7%) and Comparison group (84.4%) were male. Nearly half of the cancer patients in Experimental group (48.5%) and Comparison group (40.6%) were in the 54-65 years of age. Majority of the cancer patients in Experimental group (93.9%) and more than half of them in Comparison group (65.6%) were married. None of the patients in both the groups had registered for Cancer pension scheme. Majority of the cancer patients in Experimental group (90.9%) and in the Comparison group (93.8%) were admitted in the hospital under Ayushman Scheme and most of them had Ayushman Scheme as a source of expenditure on health services. Both the groups were found to be comparable and homogenous at 0.05 level of significance except for Marital status (p=0.001) & Average Expenditure on health services per month (p=0.04). (Table 4)

Prior to administration of Comprehensive Caregiver Support, the two groups were comparable and homogenous regarding Self efficacy, Quality of life and Caregiving-burden score prior to Comprehensive Caregiver Support administration. The difference in the marital status and expenditure on health of cancer patients did not impact on the baseline self-efficacy, quality of life and caregiving burden of caregivers. (Table 5)

The mean change in self-efficacy, Quality of life and Caregiving-burden scores on the 7th & 14th day following the administration of Comprehensive Caregiver Support was found to be statistically significant at 0.05 level of significance. The calculated effect size implies that the Comprehensive Caregiver Support is highly effective in improving the Self-efficacy, Quality of life and to minimize the Caregiving burden among caregivers in Experimental group. (Table 5)

Table 1: Schedule of Comprehensive Caregiver Support

Type of Intervention Caregivers	Duration	Intervention Days								
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Up to 14 days	Day 14
Deep breathing	10 min twice/day	Pre-test	+	+	+	+	+	Post-test 1	+	Post-test 2
Symptom management training	15 min/day		+	+	+	+	+		-	
Awareness session on financial aid	15 min/day		-	-	-	-	+		-	
Demonstration of patient care devices	20 min/patient		-	-	-	+	-		-	
Re-demonstration of patient care devices	20 min/ patient		-	-	-	-	+		-	

Table 2: Components of Comprehensive Caregiver Support

Components	Details
Strategies to manage Shortness of Breath-	Management of Acute Condition, Prevention of dyspnea.
	Deep breathing exercise procedure
Nutritional management-	Dietary Advice to Manage Nausea/Vomiting, Constipation, Diarrhea, Anorexia, swallowing problem.
	Management of Mucositis, Dry mouth, Prevention of bed sore
Management of Fatigue:	The activity-rest cycle involves Caregivers 'of cancer patients taking naps in the middle of the morning and mid-afternoon for no more than 15 to 20 minutes each.
Pain management:	Management of analgesics, non-drug interventions.
Awareness regarding financial aid: Cancer	pension scheme, Government policies regarding financial aid
Demonstration of patient care devices-	Ileostomy/Colostomy Care, Nasogastric tube feeding, Dressing care, Urinary Catheter care

Table 3: Sample Characteristics of Caregivers of Cancer patients (N=65)

Sample Characteristics	Experimental Group (n=33) (%)	Comparison’ Group (n=32) (%)	Chi square	df	p value
Age (Years)					
18-29	10(30.3)	12(37.5)	2.23	4	0.69^{NS}
30-41	8(24.2)	9(28.1)			
42-53	6(18.2)	7(21.9)			
54-65	7(21.2)	3(9.4)			
66-77	2(6.1)	1 (3.1)			
Relationship with patient.					
Parents	1(3)	0(0)	4.19	4	0.38 ^{NS}
Sibling	2(6.1)	1(3.1)			
Child / Kin	22(66.7)	18(56.2)			
Spouse	8(24.2)	11(34.4)			
Family/Relatives	0(0)	2(6.2)			
Gender					
Male	24(72.7)	18(56.2)	1.92	1	0.2 ^{NS}
Female	9(27.3)	14(43.8)			
Education Qualification					
Non-literate	3(9.1)	6(18.8)	7	5	0.22 ^{NS}
Primary	10(30.3)	8(25.0)			
Middle	6(18.2)	1(3.1)			
High secondary	6(18.2)	7(21.9)			
Graduate	5(15.2)	9(28.1)			
Post graduate	3(9.1)	1(3.1)			
Occupation					
Labour	4(12.1)	1(3.1)	4.27	6	0.64^{NS}
Self employed	3(9.1)	2(6.2)			
Government job	2(6.1)	1(3.1)			
Private job	7(21.2)	5(15.6)			
Farmer	3(9.1)	2(6.2)			
Unemployed	5(15.2)	8(25)			
House wife	9(27.3)	13(40.6)			
Monthly Family Income (Rs)					
≤10,000	10(30.3)	6(18.8)	2.20	3	0.52 ^{NS}
10000-20000	18(54.5)	17(53.1)			
20000-30000	3(9.1)	6(18.8)			
> 30000	2(6.1)	3(9.4)			
Residential area					
Urban	9(27.3)	5(15.6)	1.30	1	0.3 ^{NS}
Rural	24(72.7)	27(84.4)			
Marital Status					
Married	24(72.7)	23(71.9)	0.006	1	0.9 ^{NS}
Unmarried	9(27.3)	9(28.1)			
Type of family					
Joint	19(57.6)	20(62.5)	0.16	1	0.68 ^{NS}
Nuclear	14(42.4)	12(37.5)			
History of medical illness	4(12.1)	3(9.4)	0.1	1	0.7^{NS}
Relaxation technique used - No	33(100)	32(100.0)			
Previous experience as a caregiving experience	7(21.2)	2(6.2)	3.04	1	0.1 ^{NS}
Caregivers involved in patient care					
One	21(63.6)	22(68.8)	0.19	1	0.66^{NS}
Two	12(36.4)	10(31.2)			
Average time of caregiving per day (hours)					
<6 (3to4 hrs)	3(9.1)	6(18.8)	1.2	1	0.26 ^{NS}
≥6	30(90.9)	26(81.2)			
Caregiver is sole earning member.	9(27.3)	8(25.0)	0.04	1	0.83^{NS}
Rented room facility near to hospital.	1(3.0)	1(3.1)	-	1	0.98 ^{NS}
Distance of Residence from hospital (km)					
≤100	5(15.2)	11(34.4)	3.2	1	0.09 ^{NS}
>100	28(84.8)	21(65.6)			

NS= non-significant

Table 4a: Sample Characteristics of Cancer patients

Sample Characteristics	Experimental Group (n=33)(%)	Comparison Group (n=32) (%)	Chi square	df	p value
Gender					
Male	24(72.7)	27(84.4)	1.3	1	0.25^{NS}
Female	9(27.3)	5(15.6)			
Age(years)					
30-41	3(9.1)	1(3.1)			
42-53	6(18.2)	6(18.8)			
54-65	16(48.5)	13(40.6)	2.7	4	0.59^{NS}
66-77	8(24.2)	11(34.4)			
>77	0(0)	1(3.1)			
Religion					
Hindu	24(72.7)	24(75.0)			
Muslim	5(15.2)	4(12.5)	0.09	2	0.95^{NS}
Sikh	4(12.1)	4(12.5)			
Marital Status					
Married	31(93.9)	21(65.6)			
Unmarried	1(3)	0(0)	11.2	2	0.001*
Widow/ Widower	1(3)	11(34.4)			
Average Expenditure on health services/month (Rs)					
≤5000	11(33.3)	20(62.5)			
5000-15000	11(33.3)	10(31.2)			
15000-25000	5(15.2)	2(6.2)	9.9	4	0.04*
25000-35000	4(12.1)	0(0)			
>35000	2(6.1)	0(0)			
Frequency of Hospital visit/month.					
≤2 times	5(15.2)	7(21.9)			
>2 times	28(84.8)	25(78.1)	0.48	1	0.48^{NS}
Beneficiary under Government Pension scheme					
No	16 (48.5)	12(37.5)			
Yes	17(51.6)	20(62.5)	1.3	2	0.5^{NS}
Old age pension	15(45.5)	19(59.4)			
Government Employee pension	2(6.1)	1(3.1)			

NS= non-significant; *Significant

Table 4b: Clinical Characteristics of Cancer patients (N=65)

Sample Characteristics	Experimental Group (n=33) (%)	Comparison Group (n=32) (%)	Chi square	df	p value
Type of Cancer					
Reproductive	10(30.3)	5 (15.-6)			
Gastro- Intestinal	12(36.4)	16 (50)			
Respiratory	5 (15.2)	6 (18.8)			
Endocrine	1 (3)	1 (3.1)	3.64	6	0.72^{NS}
Blood & lymph	1 (3)	2 (6.2)			
Urinary	3 (9.1)	1 (3.1)			
Nerve Sheath	1(3.1)	1 (3.1)			
Stage of Cancer					
Stage 1	4(12.1)	4(12.5)	0.6	3	0.89^{NS}
Stage 2	7(21.2)	7(21.9)			
Stage 3	17(51.5)	14(43.8)			
Stage 4	5(15.2)	7(21.9)			
Type of Treatment					
Chemotherapy and Radiation therapy	25(75.8)	31(96.9)	6.2	2	0.04*
Chemotherapy and Surgery	2(6.1)	0(0)			
Radiation therapy and Surgery	6(18.2)	1(3.1)			
Months of being diagnosed.					
0-3months	11(33.3)	10(31.2)			
4-7months	9(27.3)	16(50)			
8-11 months	2(6.1)	2(6.2)	5.39	4	0.24^{NS}
12-15 months	4(12.1)	1(3.1)			
>15 months	7(21.2)	3(9.4)			
Patient having any Care Device					
No	25(75.8)	23(71.9)			
Yes	8(24.3)	9(28.1)			
Ryle's Tube	3(9.1)	2(6.2)	0.8	4	0.93^{NS}
Urinary Catheter	1(3)	2(6.2)			
Colostomy	2(6.1)	3(9.4)			

NS= non-significant; *Significant

Table 5: Self-Efficacy, Quality of life and Caregiving-burden Scores of Cancer patients' Caregivers (N=65)

Variable and Study time Point	Experimental Group	Comparison Group	Mean Difference Between Groups	p value	Effect Size (Cohen's d)
Self-efficacy					
Baseline	33.39±9.71	33.81±7.88	0.41	0.8^{NS}	
Post-test 1 (7th day)	65.21±1.83	33.44±8.25	31.77	0.01*	5.31
Post-test 2 (14th day)	68.52±3.24	33.47±8.21	35.04	0.01*	5.61
Quality of life					
Baseline	57.94±11.91	60.31±6.71	2.37	0.3 ^{NS}	
Post-test 1 (7th day)	85.30±3.61	57.31±7.47	27.99	0.01*	4.77
Post-test 2 (14th day)	98.7±4.72	55.7±6.87	42.91	0.01*	7.27
Caregiving Burden					
Baseline	47.27±9.65	50.22±4.18	2.94	0.1 ^{NS}	
Post-test 1 (7th day)	28.21±8.67	51.41±4.40	23.19	0.01*	3.37
Post-test 2 (14th day)	19.36±5.85	51.44±4.37	32.07	0.01*	6.21

Table 6: Linear Regression between Pre-test Self Efficacy and QOL and Caregiving Burden among Caregivers of Cancer patients

Dependent Variable	Independent Variable	Beta coefficient	p Value	R Square
Quality of life	Self-Efficacy	0.627	0.001	0.323
Caregiving Burden	Self-Efficacy	-0.424	0.01	0.242
Caregiving Burden	Quality of life	-0.55	0.001	0.307

A significant positive correlation was seen between Self -Efficacy and Quality of life score (r=0.56. p=0.001). However, a negative relationship was found between Self-efficacy and Caregiving Burden scores (r=-0.49. p=0.001) and between Caregiving Burden and Quality of life score (r=-0.55. p=0.001).

The linear regression between self-efficacy and Quality of life indicates that 32.3% (R=0.323) of the variance in the quality of life of caregivers is determined by self-efficacy. It also suggests that one unit increase in self-efficacy will improve the Quality of life by 0.627 units. The linear regression between the self-efficacy and caregiving burden of Cancer Patients Caregivers indicates that 24.2% (R=0.242) of the variance in the level of Caregiving Burden of Cancer Caregivers is determined by level of Self efficacy. It also suggests that Self efficacy increases for one unit, the level of Caregiving Burden will decrease by 0.424 units. The linear regression between the Quality of life and Caregiving Burden of Cancer Patients Caregivers indicates that 30.7% (R=0.307) of the variance in the level of Caregiving Burden of Cancer Caregivers is determined by level of Quality of life. It also suggests that if the level of Quality-of-Life increases for one unit, the level of Caregiving Burden will decrease by 0.55 units. (Table 6)

DISCUSSION

In the study, the mean age of family caregivers was 40.09±15.2 years in Experimental group and 35.9± 13.2 years in Comparison group. Hendrix CC et.al reported that the mean age of caregivers in Experimental group and Comparison group was 56.2±12.7 and 54.4±13.7 years respectively.[23] Around 72.7% of the cancer patients' Caregivers (24/33) in Experimental group and 56.2% (18/32) in Comparison group were male which is consistent with the findings of Mollica MA et. al, which showed most caregivers of patients having cancer were male i.e. 66.4% (426/641).[24]

In the present study, 27.3 % of the cancer patients' caregivers (9/33) in Experimental group and 40.6 % (13/32) in Comparison group were housewives which is consistent with the study conducted by Nayak MG and George A which showed that 37% of the cancer patients' caregivers (37/100) in Experimental group and 53% (53/100) in Comparison group were housewives.[25]

30.3% of the cancer patients' caregivers (10/33) in Experimental group and 25.0% (8/32) in Comparison group had received primary education which is consistent with the study conducted by Nayak MG and George A which reported that 31% of the cancer patients' caregivers had received primary schooling.[25]

The baseline mean Self-efficacy score of Caregivers in the Experimental and Comparison group were 33.39±9.71/80 and 33.81±7.88/80 respectively. Van Hof KS et al reported that the self-efficacy of informal caregivers of head and neck cancer patients in Netherlands was 31.8 ±4.6/40.[13] The difference in the self-efficacy scores may be due to the difference in the study settings.

The baseline mean caregiving-burden score in Experimental and Comparison group was 47.27± 9.65/88 and 50.22±4.18/88 respectively. Rha SY et al. found that the family caregivers of cancer patients experience a moderate burden, while around one-quarter stated a high burden.[26]

The mean Quality of life among caregivers of cancer patients was moderately affected in Experimental (57.94±11.91/120) and Comparison group (60.31± 6.71/120). Akpinar NB and Yurtsever S reported that the family members caring for cancer patients had low quality of life.[27] The present study identified a negative relationship between Caregiving Burden and Quality of life score which is similar to the findings of Akpinar NB and Yurtsever S, 2018 which reported that the higher caregiver burden was related to lower quality of life among caregivers of outpatient cancer patients.[27] The caregiving burden places caregivers at risk of facing a deterioration in the quality of life (QOL).

Comprehensive Caregiver Support was found to be effective in enhancing Self-efficacy, Quality of Life and the reduction of the Caregiving-burden at the 7th and 14th day in post-intervention. The improvement in self-efficacy and reduction in caregiving burden improved the self-reported quality of life amongst cancer caregivers. Gabriel IO reported that the psychosocial intervention brought an improvement in the QOL and decline in the burden of the caregivers of females with breast cancer.[28] A higher level of self-efficacy is related with improved QoL.[13]

When caregivers feel confident in their skills, they perceive caregiving as less overwhelming. Confidence reduces stress and fosters resilience, which improves emotional and physical well-being. The awareness on managing the symptoms or side effects associated with a condition increases optimism, confidence and perceived self-efficacy among the caregivers and helps them to manage the symptoms.[29]

Bandura A Self-Efficacy Theory suggests that people's beliefs in their ability to execute tasks impact their motivation, effort and resilience.[14] Caregivers with strong self-efficacy are more likely to use effective coping strategies which decreases perceived burden and boosts their quality of life. Conversely, low self-efficacy amplifies burden and diminishes well-being.[13] Diaphragmatic breathing decreases negative subjective and physiological outcomes and improves cognitive functions among healthy adults.[19]

The caregiving burden puts cancer patients' caregivers at risk of experiencing a decline in their quality of life (QOL). Poor physical health, insufficient social support, low patient functionality and cognitive impairment are among the factors that put the caregiver at risk for a negative outcome.[26]

Based on the study findings, several implications can be drawn towards nursing practice. Hospital authorities should devise policies focused on assessment of self-efficacy and quality of life of the caregivers. Comprehensive Caregiver Support can be integrated as a regular intervention in the oncology units to empower the caregivers in meeting the demands of caregiving while balancing their psychosocial and emotional health. A major strength of this study was the use of standardized tools for data collection and the two-time assessment of the dependent variables post intervention.

However, the study has few limitations in terms of the sample recruitment from a single site and the non-utilization of blinding technique which could have biased the study findings. The caregivers were not randomly assigned to experimental and comparison groups which could have led to selection bias in the study. The short duration of the follow-up period raises concerns about the long-term effectiveness and sustainability of Comprehensive Caregiver Support interventions.

CONCLUSION

Informal caregivers have reduced quality of life and unfitting self-efficacy towards the care of cancer patients which increases the perception of caregiving as a burden. There is a close relationship between self-efficacy, burden & quality of life amongst cancer caregivers. Comprehensive Caregiver Support is a short, customized caregiving program that has demonstrated effectiveness in enhancing self-efficacy, improving quality of life, and reducing caregiving burden among caregivers of cancer patients. However, its impact has been observed primarily in the short term, and the long-term sustainability of these benefits remains uncertain.

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Availability of Data: The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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