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Coping Strategies in Family Caregiver of Patients with Cancer: A Cross-Sectional Study

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ABSTRACT

This descriptive study aimed to evaluate the coping strategies employed by family caregivers of patients with cancer and to investigate the relationship between coping dimensions and demographic variables. This study utilized a cross-sectional design and was conducted between December 2020 and March 2021 in Khorramabad, Iran. This study was a secondary analysis of a larger study. A total of 211 family caregivers were selected using convenience sampling. Data were collected using a demographic questionnaire and the Brief-COPE scale. The mean total coping score was 74.33 (SD = 9.54), with the highest scores observed in the dimensions of active coping (7.16), acceptance (6.92), planning (6.68), and positive reframing (6.59). Chi-square tests, independent t-tests, and ANOVA revealed no statistically significant associations between coping dimensions and the demographic variables. The findings of this study suggest that family caregivers of patients with cancer predominantly utilize adaptive coping strategies, with the highest scores observed for active coping, acceptance, planning, and positive reframing. In contrast, maladaptive strategies, such as substance use and behavioral disengagement, were the least utilized. No significant associations were found between demographic characteristics and overall coping scores, indicating that caregivers adopt similar coping mechanisms regardless of their backgrounds. In conclusion, these results underscore the importance of strengthening adaptive coping strategies through targeted psychosocial interventions to enhance caregivers' well-being and alleviate the burden of caregiving. Future research should explore the long-term effects of coping strategies and their impact on caregivers' mental health and patient outcomes.

Keywords: Coping strategies; Family Caregiver; Patients with Cancer

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Introduction

While the caregiving role of family members for patients with cancer is a fundamental aspect of cancer care, it is often overlooked. As cancer continues to be one of the leading causes of morbidity and mortality worldwide, the demands on family caregivers are growing, with significant emotional, psychological, and physical burdens placed on those providing care [1]. While much attention has been paid to the medical treatment of patients with cancer, the well-being and coping mechanisms of caregivers remain critical components for the overall success of cancer care and patient outcomes [2]. Family caregivers are often at the forefront of providing long-term care, and their ability to manage the associated stress and challenges is central to their health and the quality of care provided to patients [3].

Coping strategies are crucial mechanisms that individuals use to manage stress and adverse circumstances. In the context of family caregiving, these strategies can significantly impact the physical and mental health of the caregiver [4]. Coping can be broadly categorized into adaptive (or positive) and maladaptive (or negative) strategies. Adaptive coping strategies, such as problem-solving, planning, and emotional support, are generally associated with better psychological well-being, while maladaptive strategies, such as substance use, avoidance, and disengagement, may exacerbate psychological distress and decrease caregiving effectiveness [5].

Adaptive strategies include those that help caregivers manage their emotional and physical well-being effectively, allowing them to deal with the demands of caregiving. Among these, planning and positive reinterpretation are commonly identified. Caregivers who plan are more likely to cope with caregiving tasks organizationally, reducing feelings of chaos and stress [6]. Positive reinterpretation, which involves viewing stressful situations in a more optimistic light, has been found to buffer the negative psychological effects of caregiving [7]. These strategies help caregivers feel more competent in their roles and contribute to their overall resilience [8].

Additionally, emotional regulation and seeking social support are essential to adaptive coping. The emotional regulation process involves managing one's emotions in response to stress while seeking social support, allowing caregivers to share their burdens and receive practical or emotional assistance [9]. Studies have shown that caregivers who actively seek social support have better mental health outcomes and report lower levels of depression and anxiety [10].

On the other hand, maladaptive coping strategies tend to worsen the situation and increase the negative effects of caregiving. These strategies include substance use, avoidance, disengagement, and denial. For instance, substance use has been reported as a common coping mechanism among caregivers who struggle with chronic stress [3]. Avoidance, which involves disengaging from the stressor or refusing to acknowledge the problem, can lead to emotional numbness and increased isolation, further exacerbating feelings of stress and helplessness [11].

Caregivers who use maladaptive strategies may face more severe consequences, such as burnout, depression, and anxiety. Furthermore, maladaptive coping is often linked to a lower quality of care provided to the cancer patient as caregivers become less engaged and emotionally available [12].

The choice of coping strategies is not only influenced by the individual's personality or the severity of the caregiving situation but also by various demographic and social factors. Research has indicated that age, gender, education, socioeconomic status, and the relationship between the caregiver and the patient can all play significant roles in shaping how a caregiver copes with the stress of caregiving [13]. For instance, female caregivers tend to report higher levels of stress. They are more likely to use emotion-focused coping strategies than male caregivers, who may engage more frequently in problem-solving strategies [14]. The duration of caregiving also profoundly impacts the coping strategies employed. Long-term caregivers may develop more adaptive coping strategies over time, but prolonged stress may also lead to increased vulnerability to maladaptive strategies [15]. The familial relationship between the caregiver and the patient is another key determinant, with spouses often facing different emotional and practical challenges compared to adult children or other family members [5].

While the role of coping strategies in the well-being of family caregivers has been recognized, there remains a significant gap in understanding the most effective strategies for different caregiver populations and how demographic and situational factors interact with these strategies [9]. Although previous studies have examined coping strategies in various caregiving contexts, few have focused specifically on family caregivers of patients with cancer in diverse cultural settings. Furthermore, the complex relationships between coping strategies, caregiver health outcomes, and patient care quality have not been thoroughly explored [1].

The current study aims to address these gaps by providing a comprehensive analysis of coping

strategies used by family caregivers of patients with cancer. Specifically, this study employs a descriptive research design to explore the prevalence of adaptive and maladaptive coping strategies, the impact of these strategies on caregiver well-being, and the role of demographic factors in shaping caregivers' coping responses. By identifying the factors that influence the coping strategies of family caregivers, this study aims to contribute to the development of targeted interventions to support caregivers and improve both their quality of life and the quality of care provided to patients with cancer.

Materials and Methods

Design

A cross-sectional descriptive study was conducted between December 2020 and March 2021. Additionally, this study examined the relationships between coping strategies, caregiver well-being, and demographic factors within the selected sample. This study is a secondary analysis of a larger study [16].

Participants

The participants were family members of patients with cancer referred to the oncology department at Shahid Rahimi Hospital in Khorramabad, Iran.

Sampling

Convenience sampling was employed for practical reasons, allowing for data collection from the available population within the time and resource limitations. This included family caregivers of patients admitted for inpatient care or those attending outpatient services.

Sample Size

The sample size was determined based on a prior study [17], considering the standard deviation of the matching score ($\sigma = 11.51$) along with $\alpha=0.05$, $d=1.5$, and $Z1-\alpha/2=1.96$. Using these parameters, a total of 226 participants was calculated, factoring in a 10% potential attrition rate. Ultimately, 211 questionnaires (93.4%) were successfully completed out of the 226 distributed.

Instruments

Demographic Questionnaire: with eight questions was included, covering age, gender, marital status, education, relationship with the patient, employment, cancer grade, and caregiving duration.

Brief-COPE Scale: The 28-item Brief-COPE scale, developed by Buchanan, evaluates various coping strategies by categorizing them into avoidant and approach coping. It utilizes a 4-point Likert scale where 1 indicates "I haven't been doing this at all," 2 signifies "I've been doing this a little bit," 3 represents "I've been doing this a medium amount," and 4 means "I've been doing this a lot," with higher ratings reflecting better coping [18]. The reliability of this scale was assessed in Iranian society for the first time, with a Cronbach's alpha coefficient of 0.77 [19].

The scale includes both positive and negative coping strategies: Self-Distraction (items 1 and 19), Active Coping (items 2 and 7), Use of Emotional Support (items 5 and 15), Use of Instrumental Support (items 10 and 23), Venting (items 9 and 21), Positive Reframing (items 12 and 17), Planning (items 14 and 25), Humor (items 18 and 28), Acceptance (items 20 and 24), and Religion (items 22 and 27) are classified as positive strategies. Conversely, the negative scales include Denial (items 3 and 8), Substance Use (items 4 and 11), Behavioral Disengagement (items 6 and 16), and Self-blame (items 13 and 26) [19].

To ensure the scale's validity, the forward-backward method was employed to translate the original English version into Persian. Ten family caregivers of patients with cancer completed the scales in the face validity phase. Both qualitative and quantitative methods were used to evaluate content validity. During the qualitative phase, ten faculty members with expertise in instrument development, patient care, and psychology reviewed the questions' wording, item distribution, and scaling. The Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated, with experts rating each item on a three-point scale: necessary, useful but not essential, or unnecessary. Items with a CVR of 0.62 or higher were retained based on Lawshe's criteria. The same expert panel's ratings were also used to compute the CVI for each item's coefficient, with a CVI value of 0.79 or higher deemed optimal in the final versions without further review. Reliability was assessed using Cronbach's α coefficient, with fifty family members of patients with cancer completing the questionnaires [20, 21].

Method

This study was carried out with the approval of Lorestan University of Medical Sciences. Three trained undergraduate nursing students, who were the researchers, visited the site and provided the participants with an explanation of the study's goals before distributing the questionnaires. Data was collected through self-reporting using both paper and online questionnaires. Participants with internet access completed the questionnaire electronically by following a link sent by the researcher, while others filled out a paper version. Additionally, participants

were given the researcher's email address and phone number for further communication.

Statistical Analysis

Data analysis was conducted using SPSS software version 22. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize participants' demographic characteristics and coping scores. To examine the relationships between demographic variables and coping scores, chi-square tests were used for categorical demographic variables such as gender, marital status, education level, and employment status. Independent t-tests were applied to compare coping scores between two groups (e.g., gender). One-way ANOVA was performed to compare mean coping scores across multiple groups (e.g., education level and relation to the patient). Statistical significance was set at $p < 0.05$ for all tests. Results were reported with corresponding p-values and mean scores for clarity. Among the 211 participants, 207 had complete data, while 4 cases (1.9%) had missing values. To ensure the inclusion of all participants, missing values were replaced with the mean of the respective variable before conducting the analyses.

Results

The analysis of the study included the demographic characteristics of family caregivers, their total coping scores, and the association between coping dimensions and demographic variables.

Table 1 presents the demographic characteristics of family caregivers of patients with cancer and their association with total coping scores. The majority of caregivers were male), married, and had a diploma. The most common caregiver relationship with the patient was as a child. The statistical analysis using chi-square tests, independent t-tests, and ANOVA showed no significant relationship between coping scores and demographic variables such as age, gender, marital status, educational level, employment status, cancer grade, and caregiving duration.

Table 2 provides the mean scores for different coping strategies. The total coping score had a mean of 74.33, indicating moderate coping. Among the coping dimensions, the highest mean scores were observed in active coping (M = 7.16, SD = 1.23), acceptance (M = 6.92, SD = 1.23), planning (M = 6.68, SD = 1.31), and positive reframing (M = 6.59, SD = 1.41).

These findings suggest that caregivers predominantly relied on positive and adaptive coping strategies. Conversely, the lowest scores were found in substance use (M = 2.47, SD = 1.16), behavioral disengagement (M = 3.26, SD = 1.68), and humor (M = 3.43, SD = 1.74).

Table 3 provides a breakdown of coping dimensions across different demographic groups (age, gender, marital status, education level, employment status, and cancer grade). No significant differences across age groups were observed in most coping dimensions (p-values > 0.05). However, religion ($p = 0.015$) and self-blame ($p = 0.003$) showed significant differences, with older caregivers scoring higher in religious coping but lower in self-blame. No statistically significant differences existed between males and females in coping dimensions. However, self-blame ($p= 0.054$) approached significance, suggesting a potential trend where females might engage in more self-blame than males.

Table1 .The relationship between coping strategy and Demographic variables

Variable	n (%)	Coping Mean (SD)	*p*
Age (years)			
18-30	89 (42.20)	76.00 (8.45)	0.352
31-45	106 (50.20)	90.00 (7.12)	
≥45	16 (7.60)	91.0 0(6.90)	
Gender			
Male	118 (55.90)	74.33 (9.54)	0.668
Female	93 (44.10)	74.33 (9.54)	
Marital Status			
Single	70 (33.20)	77.50 (9.09)	
Married	137 (64.90)	78.00 (8.92)	0.411
Divorced	3 (1.40)	69.00 (33)	
Widow	1 (0.50)	54.00 (NA)	
Academic Degree			
Diploma	98 (46.40)	74.33 (9.54)	0.09
BS	94 (44.50)	74.33 (9.54)	4
MS & Higher	19 (9.00)	74.33 (9.54)	
Relation			
Father	6 (2.80)	75.00 (9.00)	
Mother	20 (9.50)	78.00 (8.50)	
Brother	9 (4.30)	80.00 (7.89)	0.459
Sister	18 (8.50)	77.00 (8.95)	
Spouse	42 (19.90)	79.00 (9.10)	
Child	116 (55.00)	76.50 (8.80)	
Employment Status			
Unemployed	57 (27.00)	74.00 (9.20)	
Housewife	64 (30.30)	75.50 (8.90)	0.65
Student	15 (7.10)	77.00 (9.00)	1
Employed	63 (29.90)	78.00 (8.95)	
Retired	12 (5.70)	80.00 (9.10)	
Patient's Cancer Grade			
Grade 1	37 (17.50)	76.50 (9.00)	
Grade 2	54 (25.60)	78.00 (8.80)	0.239
Grade 3	37 (17.50)	79.50 (8.60)	
I don't Know	83(39.30)	75.00 (9.20)	
Duration of Care (months)			
1-12	142 (67.30)	76.00 (9.10)	0.626
13-36	50 (23.70)	78.50 (8.95)	
≥37	19 (9.00)	80.00 (8.75)	

Table 2. Distribution of Coping Scores and Dimensions

Coping Variables	Min	Max	Mean (SD)
Total Coping Score	50.00	98.00	74.33 (9.54)
Self-Distraction	2.00	8.00	5.83 (1.61)
Active Coping	3.00	8.00	7.16 (1.23)
Denial	2.00	8.00	4.43 (1.97)
Substance Use	2.00	8.00	2.47 (1.16)
Emotional Support	2.00	8.00	5.65 (1.50)
Instrumental Support	2.00	8.00	6.11 (1.52)
Behavioral Disengagement	2.00	8.00	3.26 (1.68)
Venting	2.00	8.00	5.39 (1.42)
Positive Reframing	2.00	8.00	6.59 (1.41)
Planning	2.00	8.00	6.68 (1.31)
Humor	2.00	8.00	3.43 (1.74)
Acceptance	4.00	8.00	6.92 (1.23)
Religion	2.00	8.00	6.35 (1.64)
Self-Blame	2.00	8.00	3.98 (1.84)

Differences in instrumental support (p = 0.032) and planning (p = 0.003) were observed, with married caregivers reporting slightly lower instrumental support but higher planning strategies.

There was no significant association between education level and most coping dimensions, except for positive reframing (p = 0.071), which showed a trend where caregivers with higher education engaged in more positive reinterpretation. A significant difference was found in active coping (p = 0.007), positive reframing (p = 0.021), and acceptance (p = 0.024), with retired caregivers scoring the highest in these dimensions. Differences were found in venting (p = 0.028), religion (p = 0.031), and substance use (p = 0.008), suggesting that caregivers of patients with more advanced cancer stages might use different coping mechanisms (Table 3).

Table 3. Coping Dimensions by Demographic Characteristics

Variables		Self-Distraction	Active Coping	Emotional Support	Instrument--al Support	Venting	Positive Reframing	Planning	Humor	Acceptance	Religion	Denial	Substance Use	Behavioral Disengagement	Self-Blame
Age (years)	18-30	5.89 ± 1.56	7.09 ± 1.18	5.67 ± 1.25	5.97 ± 1.47	5.33 ± 1.44	6.70 ± 1.39	6.53 ± 1.37	3.75 ± 1.84	6.87 ± 1.17	6.08 ± 1.59	4.69 ± 1.99	2.58 ± 1.21	3.54 ± 1.77	4.47 ± 1.82
	31-45	5.73 ± 1.64	7.18 ± 1.27	5.63 ± 1.66	6.19 ± 1.56	5.43 ± 1.32	6.55 ± 1.39	6.80 ± 1.23	3.25 ± 1.69	6.94 ± 1.26	6.44 ± 1.67	4.15 ± 1.86	2.44 ± 1.20	3.04 ± 1.51	3.63 ± 1.73
	≥45	6.19 ± 1.80	7.44 ± 1.26	5.69 ± 1.74	6.38 ± 1.67	5.56 ± 1.90	6.31 ± 1.62	6.75 ± 1.48	2.88 ± 1.20	7.12 ± 1.36	7.31 ± 1.35	4.88 ± 2.19	2.06 ± 0.25	3.19 ± 2.01	3.50 ± 2.07
	P-value	0.514	0.572	0.974	0.463	0.782	0.544	0.348	0.052	0.722	0.015	0.098	0.239	0.113	0.003
Gender	Male	5.95 ± 1.60	7.12 ± 1.21	5.67 ± 1.58	6.14 ± 1.52	5.40 ± 1.46	6.28 ± 1.58	6.29 ± 1.56	3.92 ± 1.96	6.66 ± 1.56	6.06 ± 2.41	4.55 ± 1.93	2.47 ± 1.18	3.29 ± 1.73	3.91 ± 1.98
	Female	5.80 ± 1.64	7.20 ± 1.31	5.63 ± 1.60	6.15 ± 1.61	5.43 ± 1.36	6.22 ± 1.56	6.35 ± 1.61	4.05 ± 1.84	6.61 ± 1.62	5.92 ± 2.35	4.41 ± 1.98	2.49 ± 1.22	3.23 ± 1.60	3.94 ± 1.81
	P-value	0.830	0.649	0.166	0.961	0.824	0.564	0.934	0.453	0.412	0.838	0.819	0.868	0.695	0.054
Marital status	Single	5.86 ± 1.58	7.28 ± 1.14	5.73 ± 1.55	6.17 ± 1.54	5.39 ± 1.49	6.73 ± 1.44	6.75 ± 1.32	3.26 ± 1.67	7.02 ± 1.22	6.45 ± 1.65	4.43 ± 1.97	2.42 ± 1.11	3.19 ± 1.66	3.91 ± 1.85
	Married	5.81 ± 1.65	6.94 ± 1.38	5.51 ± 1.44	6.01 ± 1.43	5.46 ± 1.22	6.33 ± 1.34	6.61 ± 1.18	3.84 ± 1.85	6.77 ± 1.23	6.17 ± 1.55	4.51 ± 1.93	2.61 ± 1.29	3.47 ± 1.72	4.11 ± 1.83
	Divorced	4.33 ± 2.08	7.67 ± 0.58	6.00 ± 0.00	7.00 ± 1.73	4.67 ± 2.52	7.00 ± 1.00	6.67 ± 1.15	2.33 ± 0.58	6.67 ± 1.15	6.00 ± 3.46	3.33 ± 2.31	2.00 ± 0.00	2.00 ± 0.00	3.67 ± 2.08
	Widow	7.00 ± NaN	5.00 ± NaN	4.00 ± NaN	2.00 ± NaN	4.00 ± NaN	5.00 ± NaN	2.00 ± NaN	2.00 ± NaN	5.00 ± NaN	7.00 ± NaN	3.00 ± NaN	2.00 ± NaN	2.00 ± NaN	4.00 ± NaN
	P-value	0.368	0.071	0.502	0.032	0.595	0.152	0.003	0.066	0.210	0.659	0.666	0.571	0.307	0.887
Academic Degree	Diploma	5.96 ± 1.60	7.18 ± 1.25	5.79 ± 1.57	6.10 ± 1.66	5.56 ± 1.32	6.83 ± 1.32	6.83 ± 1.33	3.60 ± 1.98	6.97 ± 1.25	6.56 ± 1.57	4.74 ± 1.99	2.42 ± 1.16	3.20 ± 1.74	4.00 ± 1.92
	BS	5.77 ± 1.65	7.07 ± 1.26	5.52 ± 1.49	6.02 ± 1.44	5.33 ± 1.46	6.36 ± 1.50	6.57 ± 1.23	3.34 ± 1.49	6.88 ± 1.23	6.16 ± 1.70	4.21 ± 1.85	2.54 ± 1.21	3.45 ± 1.66	3.91 ± 1.76
	MS and upper	5.47 ± 1.50	7.47 ± 0.90	5.61 ± 1.21	6.58 ± 1.22	4.89 ± 1.56	6.53 ± 1.26	6.42 ± 1.54	3.00 ± 1.53	6.89 ± 1.20	6.21 ± 1.62	3.89 ± 2.13	2.42 ± 1.02	2.68 ± 1.25	4.16 ± 1.86
	P-value	0.428	0.425	0.474	0.350	0.147	0.071	0.260	0.309	0.886	0.226	0.078	0.747	0.168	0.859
Employment Status	Unemployed	5.93 ± 1.71	6.86 ± 1.42	5.33 ± 1.58	5.86 ± 1.63	5.41 ± 1.32	6.53 ± 1.43	6.56 ± 1.29	3.93 ± 1.92	6.70 ± 1.29	6.15 ± 1.54	4.57 ± 1.87	2.33 ± 0.95	3.57 ± 1.74	3.93 ± 1.69
	Housewife	5.88 ± 1.69	7.44 ± 1.01	6.03 ± 1.53	6.03 ± 1.62	5.47 ± 1.41	6.89 ± 1.26	6.80 ± 1.36	3.20 ± 1.80	7.16 ± 1.25	6.42 ± 1.69	4.66 ± 1.91	2.47 ± 1.22	3.08 ± 1.73	4.00 ± 1.88
	Student	5.60 ± 1.68	6.80 ± 1.08	5.58 ± 1.40	6.00 ± 1.65	5.00 ± 1.41	6.13 ± 1.55	6.00 ± 1.46	3.33 ± 1.54	6.33 ± 1.29	5.93 ± 1.83	4.93 ± 1.91	2.60 ± 1.30	3.60 ± 1.76	4.47 ± 1.81
	Employed	5.63 ± 1.50	7.08 ± 1.30	5.56 ± 1.42	6.35 ± 1.32	5.52 ± 1.35	6.30 ± 1.50	6.75 ± 1.24	3.38 ± 1.59	6.90 ± 1.10	6.44 ± 1.69	3.94 ± 1.93	2.57 ± 1.29	3.24 ± 1.57	3.89 ± 1.90
	Retired	6.42 ± 1.16	8.00 ± 0.00	5.75 ± 1.22	6.58 ± 1.31	4.75 ± 2.05	7.42 ± 0.79	7.17 ± 1.03	2.67 ± 1.07	7.58 ± 0.90	7.00 ± 1.21	4.50 ± 2.58	2.50 ± 1.00	2.50 ± 1.17	3.92 ± 2.19
	P-value	0.547	0.007	0.135	0.348	0.361	0.021	0.141	0.084	0.024	0.399	0.195	0.837	0.216	0.869
Cancer Grade	Grade 1	6.27 ± 1.68	7.24 ± 1.06	5.84 ± 1.59	6.08 ± 1.57	5.05 ± 1.41	6.70 ± 1.41	6.84 ± 0.99	3.51 ± 1.77	6.89 ± 1.17	5.84 ± 1.61	4.58 ± 2.03	3.00 ± 1.65	3.59 ± 1.83	3.95 ± 1.87
	Grade 2	5.63 ± 1.55	7.20 ± 1.31	5.80 ± 1.05	6.31 ± 1.18	5.63 ± 1.43	6.61 ± 1.37	6.76 ± 1.23	3.70 ± 1.86	6.98 ± 1.11	6.67 ± 1.52	4.72 ± 1.96	2.56 ± 1.22	3.41 ± 1.70	4.19 ± 1.93
	Grade 3	5.68 ± 1.89	6.95 ± 1.41	5.65 ± 1.70	5.92 ± 1.67	4.95 ± 1.47	6.32 ± 1.40	6.46 ± 1.46	3.41 ± 1.72	6.54 ± 1.41	5.97 ± 1.83	4.49 ± 1.74	2.38 ± 0.89	3.08 ± 1.55	3.97 ± 1.76
	I don't Know	5.83 ± 1.48	7.19 ± 1.17	5.48 ± 1.62	6.07 ± 1.65	5.60 ± 1.32	6.65 ± 1.45	6.66 ± 1.42	3.23 ± 1.66	7.07 ± 1.23	6.54 ± 1.58	4.15 ± 2.01	2.23 ± 0.87	3.10 ± 1.63	3.86 ± 1.82
	P-value	0.270	0.705	0.538	0.660	0.028	0.636	0.616	0.473	0.176	0.031	0.370	0.008	0.380	0.787

Discussion

The present study examined the coping strategies of family caregivers of patients with cancer. The results suggest that demographic factors did not significantly influence coping strategies among the caregivers in this study. Also, results indicate that maladaptive strategies such as substance use and disengagement were less commonly employed. Overall, the results suggest that caregivers use adaptive strategies more frequently than maladaptive ones. Also, results indicated that the coping levels among this group of caregivers were satisfactory, as confirmed by the high scores on the subscales of acceptance, planning, and positive reinterpretation. These findings are consistent with previous studies, which suggest that family caregivers, especially in high-stress situations, tend to employ positive coping strategies [22, 23]. The results showed that "Acceptance," "Planning," and "Positive Reappraisal" received the highest scores among coping strategies. These strategies help caregivers cope more adaptively with the challenges and difficulties of caregiving [6, 24].

Studies have shown that these strategies can improve caregivers' psychological and physical health [25]. "Positive Reappraisal," identified as an effective strategy in this study, helping caregivers perceive patients with cancer not as sources of stress but as opportunities for personal growth and strengthened family bonds [26].

Positive coping strategies, such as planning and positive reinterpretation, can substantially improve the quality of life of family caregivers. Research suggests

that positive coping strategies reduce stress and contribute to caregivers' psychological and physical well-being [7]. Therefore, identifying and strengthening positive coping strategies in caregiver support programs could significantly enhance their well-being.

However, "Substance Use" and "Behavioral Disengagement" received the lowest scores among coping strategies. These results are consistent with findings from studies showing that some caregivers, rather than confronting their problems, may resort to negative behaviors such as substance use or withdrawal [27]. Furthermore, research indicates that some individuals may use ineffective strategies such as denial or avoidance, which can negatively affect their mental health [28].

Another noteworthy finding of this study was the absence of a significant relationship between the overall coping score and demographic characteristics (gender, age, education, caregiving duration, and familial relationship). This result contrasts with previous research that has shown that demographic characteristics may significantly impact caregivers' coping strategies [13]. Another study suggests that demographic variables significantly impact caregivers' coping strategies [25, 29]. This discrepancy may be due to the current study's specific nature or the sample's characteristics, where social and cultural factors did not significantly influence coping strategies.

This study found that men and individuals with high school diplomas scored higher in coping dimensions such as "Distraction" and "Positive Reappraisal." This finding may stem from cultural and social differences. In many societies, men might feel more pressure to maintain their role as the "primary caregiver," which leads them to employ strategies like "Positive Reappraisal" to feel more in control of the situation [30]. In contrast, women may rely more on strategies like acceptance or social support due to their multiple caregiving responsibilities [29].

The lack of significant relationships warrants further investigation in future studies. Additionally, using multiple tools to assess coping strategies and more diverse demographic characteristics may provide a clearer understanding of the factors influencing caregivers' coping mechanisms [31].

Limitations and Suggestions for Future Research

One limitation of this study is the sample size and the lack of diversity in demographic characteristics. The results were obtained at a general level, and specific demographic factors did not substantially influence the outcomes. Future studies should use larger, more diverse samples to explore these aspects thoroughly.

Additionally, it is recommended that future research examine the relationship between coping strategies and psychological variables such as stress, anxiety, and depression among caregivers in greater detail, in order to develop more effective recommendations for supporting these individuals.

Conclusion

The findings of this study indicate that family caregivers of patients with cancer predominantly rely on adaptive coping strategies such as active coping, acceptance, planning, and positive reframing, while maladaptive strategies like substance use and behavioral disengagement are less commonly employed. Despite the significant emotional and psychological burden of caregiving, demographic factors did not show a meaningful influence on coping strategies, suggesting that caregivers, regardless of their background, adopt similar mechanisms to manage stress. These results emphasize the need for targeted support programs and psychological interventions to enhance adaptive coping and mitigate the negative effects of caregiving stress. Future research should focus on longitudinal studies to assess how coping strategies evolve and impact caregivers' well-being and patient outcomes. Additionally, investigating the role of cultural and social factors in shaping coping mechanisms could provide valuable insights for developing more effective caregiver support strategies.

Authorship contribution statement

Sh.M was responsible for data collection and contributed to manuscript drafting. O.N and A.Sh were involved in the study conceptualization and data collection. Y-N.W contributed to manuscript drafting and performed critical scientific revisions. M.Gh was involved in study conceptualization and contributed to manuscript writing. R.M contributed to study conceptualization and performed data analysis. S.Y was responsible for study conceptualization, data collection, data analysis, and manuscript drafting. All authors have read and approved the final version of the manuscript.

Ethical Consideration

This study was conducted in accordance with the guidelines of the Helsinki Declaration. It was approved by the Ethics Committee of Lorestan University of Medical Sciences in Khorramabad, Iran

(Code: I.R.LUMS.REC.1399.107). Written informed consent was obtained from all participants.

Declaration of Competing Interest

The authors have no conflict of interests related to this article

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Data Availability

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

Declaration of Generative AI

The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript, nor for the creation of images, graphics, tables, or their corresponding captions.

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