

A Comparative Study on Perceived Stress, Coping, Quality of Life, and Hopelessness between Cancer Patients and Survivors

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Abstract

Background and Aim: Cancer patients and survivors need to cope with many physical and emotional stressors. This cross-sectional study compared the perceived stress, coping, quality of life (QOL), and hopelessness between cancer patients and cancer survivors and examined the relationship of perceived stress with coping, QOL, and hopelessness in cancer patients and cancer survivors. **Materials and Methods:** Using a purposive sampling technique, this study was conducted in the Medical Oncology Department of a multi-specialty tertiary care teaching hospital between February and May 2018. Thirty participants (15 cancer patients and 15 cancer survivors) in the age range of 30–60 years took part in the study. Both groups were assessed by the following instruments: Perceived Stress Scale, Coping Checklist, Quality of Life-Cancer, and Beck Hopelessness Scale. **Results:** Cancer patients are using maladaptive coping strategies and experiencing psychological distress with reduced QOL than cancer survivors. Furthermore, hopelessness was positively correlated with QOL among cancer survivors. **Conclusions:** Cancer patients are found to be distressed and hopeless with significant reductions in their QOL.

Keywords: Cancer, coping, quality of life, stress

INTRODUCTION

Cancer is a life-threatening disease and receiving a cancer diagnosis is an extremely stressful experience.^[1] In India, around 2.0–2.5 million people are living with one or another kind of cancer, and 7–8 lakhs new cases get added every year to the existing burden.^[2] A diagnosis of cancer can lead to serious psychological problems because cancer is considered to be synonymous with hopelessness, unbearable pain, fear, and death. Prior studies found that psychological distress can worsen the physical manifestation of cancer.^[3]

Previous studies have indicated apparent links between stress and various medical conditions such as cardiovascular disease^[4,5] and diabetes.^[6] In recent years, several studies have established an increasingly clear link between psychosocial stress, personality types, and the development of cancer.^[7,8] Stress, often conceptualized within a “stress and coping” framework^[9] has frequently been measured as perceptions or appraisals.^[10,11] Global stress reflects the degree to which individuals appraise their lives as generally stressful, without reference to specific events or stressors. Measuring a patient’s appraisal of global

stress is important, as the cancer experience does not occur in isolation but rather in the context of the patient’s daily living. Moreno-Smith *et al.*^[12] studied the links between chronic stress, depression, social isolation, and cancer progression. They argued that chronic stress leads to tumor growth through the activation of specific signaling pathways in cancer cells and tumor microenvironment. According to Kreitler *et al.*,^[13] the quality of life (QOL) in cancer patients is affected negatively by both health stresses (related to advanced disease stage, long disease duration, and treatment) and social stresses (unemployment, recent immigration, and older age), the latter being more related to several domains of QOL than the former. In addition, they found the effects of health stresses to be mediated primarily by the experience of perceived stress. This finding indicates an important distinction between the antecedents of the QOL and mediators of the effect of antecedents.

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Coping strategies are very important mediators of the effects of stressful events on the QOL. Lazarus and Folkman^[9] defined coping strategies as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.” The coping strategies are generally divided into three types as follows: problem-focused strategies, emotion-focused strategies, and avoidance. Problem-focused coping embraces a wide array of problem-oriented strategies, whereas emotion-focused coping is aimed at regulating the emotions linked to the stressful situation. Avoidance represents an attempt to avoid stressful situations and may include either person-oriented (seeking out other people) or task-oriented (engaging in other activities) strategies.^[14] A preference of coping strategies is an acquired style, which can be influenced by exposure to the stress of cancer.^[15]

Studies on individuals with cancer describe different coping patterns. A positive relationship and full acceptance of God gave participants hope that God was in control and that the disease was from him.^[16] The results suggest that belief in God helped the participants to accept the diagnosis and cope with the disease. In another study, Taleghani *et al.*^[17] reported that breast cancer patients used strategies such as positive suggestion, hope, and intentional forgetfulness. Culver *et al.*^[18] studied the coping and distress in breast cancer patients from three ethnic populations, namely, non-Hispanic Whites, Hispanic, and African-Americans. Results indicated that non-Hispanic Caucasians reported more use of humor; Hispanic women used more venting and self-distraction, while religious coping was the common strategy among African-Americans. It was concluded that distress was consistently related to avoidance coping strategies such as denial, self-distraction, and venting. In an Indian study, Vidhubala *et al.*^[19] studied the coping preferences of the head-and-neck cancer patients and concluded that those patients employed both emotion-oriented and problem-oriented coping strategies during the illness course.

QOL is a multi-dimensional construct, determined by both objective factors and individual subjective assessment such as personal goals, expectations, standards, concerns, and experiences, in relation to their own culture and value systems.^[20] The onset of life-threatening illness such as cancer is a stressful experience that can affect the QOL of patients.^[21] Some studies found medical variables such as adjuvant therapy, stage of disease, stoma presence, problems with fecal control, less physical activity, and noncancer comorbid conditions to be associated with a poorer QOL.^[22] A poorer QOL has been found to be correlated with a younger age at the time of diagnosis, lower social support, and lower income status.^[22] Studies on predictors of the QOL in newly diagnosed melanoma and breast cancer patients suggest an association between behavioral escape-avoidance and a worse QOL.^[23]

Hope is an important factor in increasing motivation. In the presence of a disease, it prevents the feeling of desperation

and helplessness as well as helping patients to feel better and maintain the cancer treatment. A strong feeling of hopelessness is known to have the potential to cause new cancer to emerge and to die because of the illness.^[24,25] Hopelessness, which is often considered closely related to the construct of pessimism^[26] has predicted the incidence and mortality of serious illness such as cancer.^[27] Previous studies conducted by Northouse *et al.*^[28] revealed that hopelessness predicted poor adjustment and lower mental health-related QOL in women with breast cancer.

There is also growing interest in understanding the psychosocial concerns and QOL among cancer survivors. Due to increases in early detection and advances in cancer treatments, an increasing number of cancer patients will be long-term survivors. As a result, the population of long-term cancer survivors accounts for approximately 30% and 65% of all cancer patients in developing countries and the USA, respectively.^[29,30] An individual is considered a cancer survivor from the time of diagnosis, through the balance of his or her life. Family members, friends, and caregivers are also strongly impacted and hence included in this definition.

Most of the researches have focused on psychological symptoms among cancer survivors. Several studies found that cancer survivors report greater distress and more mental health symptoms relative to those with no cancer history.^[31,32] While some cancer survivors find it hard to cope with the psychological consequences of cancer and deal with existential issues such as fear of death, isolation, rejection, meaninglessness, life questions and threats to self-identity, others experience hardly any problems in dealing with the aftermath of their disease. Some even report improved psychological well-being after cancer. They derive meaning from the cancer experience, feel more resilient, experience life more fully in the present or reprioritize their lives.^[33-35]

With this background, the present study was conceptualized to examine the impact of stress on coping, QOL and hopelessness in cancer patients. Living under the influence of stress factors that are associated with being diagnosed with cancer demands the development of coping strategies that help the patient regain a sense of balance.^[36] Adapting to cancer is similar to adapting to a major stress event and can be analyzed from the point of view of the intensity of the strain on the adaptive resources of the individual^[9] and on the coping resources or on self-efficacy.^[37] The various negative impact of stress in cancer patients deteriorates their QOL.^[20] Several study findings have shown associations between cancer adaptation and coping.^[38] Cancer patients use both adaptive and maladaptive coping strategies to deal with stress. Maladaptive coping strategies affect QOL^[39] and similarly, hopelessness is associated with poor QOL^[40] in cancer patients. Despite the increasing need to investigate the psychological distress in cancer patients and cancer survivors, research on stress, coping, QOL and hopelessness in this population are scarce in India. Therefore, the present study was undertaken with the following objectives: (a)

to compare the perceived stress, coping, QOL and hopelessness between cancer patients and cancer survivors and (b) to examine the relationship of perceived stress with coping, QOL and hopelessness in cancer patients and cancer survivors.

MATERIALS AND METHODS

Participants

A cross-sectional study was carried out in the Department of Medical Oncology, Sri Ramachandra Institute of Higher Education and Research from February to May 2018. A total of 30 study participants were recruited that included 15 cancer patients and 15 cancer survivors. Of the 23 cancer patients judged as eligible, 8 declined participation stating that they were unwilling to participate in the study, and finally, 15 patients gave their consent. Patients were eligible for selection if they were: (a) aged 30–60 years diagnosed with Stage I–II cancer and currently undergoing radiotherapy, (b) survivors who have lived beyond 1 year from diagnosis with no evidence of disease and regularly attending the OPD for follow-up. Those who have psychiatric illnesses and other physical illnesses that precluded their participation in the study were excluded from the study. The sampling strategy was primarily purposive in nature. All participants were informed of the purpose of the study and provided with written informed consent. Before commencing the study, we obtained approval from the Institute's Ethics Committee. The study sample was assessed using the following instruments:

Measures

Perceived Stress Scale

The PSS-10 developed by Cohen *et al.*^[10] was used for measuring the perception of stress. The PSS-10 was designed to measure the level of perceived aspects of one's life which was uncontrollable, overloading, and unpredictable. Six of the items are negative and the remaining four are positive. Each item was rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often). In scoring the measure, the four positive items are reversed scored, and then all the items are summed (range from 0 to 40). A higher total score indicates more perceived stress. A score of 14 or more is indicative of the presence of perceived stress.^[41] The levels of stress are arbitrarily divided as follows: low perceived stress: 0–13, moderate perceived stress: 14–26, and high perceived stress: 27–40. Reliability coefficients using Cronbach's alpha ranged from 0.86 to 0.92.

Coping Checklist

The Coping Checklist (CCL), developed by Rao *et al.*,^[42] was used to assess the coping strategies used by the participants. The CCL comprised of 70 items describing a broad range of behavioral, emotional, and cognitive responses that may be used to handle stress. Items are scored dichotomously, Yes/No, each item indicative of the presence or absence of a coping behavior. There are seven subscales: problem solving, denial, positive distraction, negative distraction, acceptance, religion/faith, and social support seeking. The test–retest reliability for a 1-month period is 0.74 and the internal

consistency for the full scale is 0.86. Higher the score better the coping and vice versa.

Quality of Life-Cancer

The QOL-cancer (QOL-C), developed by Vidhubala *et al.*,^[43] was used for measuring the QOL. The QOL-C is a 38-item questionnaire with ten factors, namely, psychological well-being, self-adequacy, physical well-being, confidence in self-ability, external support, pain mobility, optimism and belief, interpersonal relationship, and self-sufficiency and independence. These factors have every aspect of an individual's life relevant to the cancer envisaged. The Cronbach's alpha of 0.90 and split-half reliability of 0.74 showed the reliability of the tool. The maximum score for the questionnaire was 152 and the minimum score was 38. The norms for the scale are as follows: 88 and below-significantly poor QOL, 89–108-below average QOL, 109–132-average QOL, 133–144-above average QOL, and above 144-significantly high QOL.

Beck Hopelessness Scale

Hopelessness was assessed with 20-item Beck Hopelessness Scale (BHS) developed by Beck *et al.*^[44] BHS was designed to measure three major aspects of hopelessness: feelings about the future, loss of motivation, and expectations. The scale assesses hopelessness by measuring participants' negative expectancies regarding future events. Each item response is assigned a score of 0 (hopeful) or 1 (hopeless). Thus, the total BHS score can range from 0 to 20, a higher score indicating greater hopelessness. Beck and Steer^[45] score the measure as follows: 0–3, minimal range; 4–8, mild hopelessness; 9–14, moderate hopelessness; and 15 and above, severe hopelessness. The internal consistency ranged from 0.82 to 0.93.

Procedure

All participants who gave written informed consent were interviewed. Their sociodemographic details were collected, and they were assessed using the PSS-10, CCL, QOL-Cancer and BHS scales. All the assessments were made by the second author. The interview was completed in a single session and lasted for 45 min to 1 h. All the collected data were analyzed using IBM Statistical Package for the Social Sciences Statistics 16.0 (Chicago, IL, USA) and $P < 0.05$ was accepted as statistically significant. Comparisons were made using the Mann–Whitney U-test. Associations between the different variables were studied using correlation coefficient.

RESULTS

The sociodemographic profile of the study group is shown in Table 1. The age range of the participants was 30–60 years. Mean age (standard deviation) of the participants in both group one and group two were 38.60 (6.93) and 52.07 (6.37) years, respectively. Most of the cancer patients were males (73.3%), married (93.3%), had completed higher secondary (33.3%), and employed (80%). The most common type of cancer was breast cancer (26.7%).

Table 2 shows the scores obtained by the two groups on the measures of PSS, CCL, QOL-C and hopelessness scale. The

Table 1: Sociodemographic characteristics of the study group

Variables	Cancer patients (n=15), n (%)	Cancer survivors (n=15), n (%)
Age (years), mean±SD	38.60±6.93	52.07±6.37
30-45	13 (86.7)	3 (20.0)
46-60	2 (13.3)	12 (80.0)
Gender		
Males	11 (73.3)	6 (40.0)
Females	4 (26.7)	9 (60.0)
Education		
High school	9 (60.0)	9 (60.0)
Higher secondary	5 (33.3)	1 (6.7)
Graduation +	1 (6.7)	5 (33.3)
Occupation		
Employed	12 (80.0)	10 (66.7)
Unemployed	3 (20.0)	5 (33.7)
Marital status		
Single	1 (6.7)	-
Married	14 (93.3)	15 (100)
Income (per month) (Rs.)		
<10,000/-	2 (13.3)	2 (13.3)
10,000-20,000/-	10 (66.7)	11 (73.3)
21,000-25,000/-	3 (20.0)	2 (13.3)
Cancer site (%)		
Breast	26.7	
Gastric	13.3	
Cervical	6.7	
Other	53.3	

SD: Standard deviation

Table 2: Comparison of perceived stress, coping, quality of life, and hopelessness between the two groups

Variables	Mean±SD		Comparison (P; MU)
	Group I (n=15)	Group II (n=15)	
Perceived stress	22.13±2.72	9.67±2.53	0.001; 0.000
Coping	33.27±4.18	55.13±4.02	0.000; 0.000
QOL	86.40±11.17	116.60±4.44	0.000; 0.000
Hopelessness	9.33±4.37	4.00±1.78	0.000; 23.000

SD: Standard deviation, MU: Mann-Whitney U-test, QOL: Quality of life

Mann–Whitney U-test indicated significant group differences between the cancer patients and the cancer survivors. Comparison of scores for the two groups revealed that cancer patients had shown moderate levels of perceived stress and hopeless feelings, displayed maladaptive coping styles more often with significant decline in the QOL than the other group.

The relationship between perceived stress, coping, QOL, and hopelessness (as measured by PSS-10, Coping Check List, Quality of Life-Cancer and Beck Hopelessness Scale) among cancer patients was examined [Table 3]. Hopelessness was negatively correlated with QOL ($r = 0.74$, $P < 0.01$). Among cancer survivors, hopelessness was positively correlated with QOL ($r = 0.64$, $P < 0.05$).

DISCUSSION

The purpose of this study was to compare the perceived stress, coping, QOL, and hopelessness between cancer patients and cancer survivors and to examine the relationship of perceived stress with coping, QOL and hopelessness in cancer patients and cancer survivors. We found that cancer patients had shown moderate stress and hopeless feelings, used maladaptive coping strategies more often with reduced QOL than the other group. Cancer patients in this study obtained a moderate score of 22.13 on the PSS. The psychobiological mechanisms that affect cancer progression are thought to be related to psychological stress.^[46] Psychological stress has a strong impact on accelerating the growth of various types of malignant tumors.^[47] It has been suggested that the processes of psychological stress include cancer and treatment as independent factors, and that sociodemographic factors, coping, adaptation, personality factors, medical factors, socio-environmental factors, and life stressors are mediators and/or moderators of the processes.^[23,48] It is suggested that these affect both QOL and survival. Furthermore, the presence of other (noncancer) life events at the time of the illness influences the cancer-related stress processes because patients often need to make efforts to cope with them, and this may influence or interfere with coping with cancer or affect the health outcomes.^[48]

Coping style is an important resource of psychological adjustment for cancer patients to combat destructive emotions and stress. Prior studies of cancer patients demonstrated that acceptance coping was positively associated with QOL, while denial and self-blame negatively correlated with this outcome.^[49,50] Results of the current study indicated that cancer patients have adapted maladaptive coping strategies more often than the adaptive ones. The above finding is congruent with those of previous studies which reported that patients with chronic diseases (such as cancer) displayed positive and problem-focused coping styles less than other coping styles.^[51,52] Several coping patterns emerged as significant prospective predictors of QOL. Previous studies reported that cancer patients using adaptive strategies reported better functional, emotional, and physical well-being, and higher overall QOL.^[53,54] According to an interactive model of stress, a person's perception of illness is influenced by both the perceived external threat and the individual's assessment of ability to deal with the stressors.^[9] It is possible that patients who use adaptive strategies perceive a greater sense of control in the stressful situations of cancer diagnosis and treatment.^[55] Such patients may be more able to initiate other active coping behaviors, gain a sense of acceptance, and therefore experience better QOL.

In contrast, greater disengagement (avoiding problems or giving up the attempt to cope) appear to be a negative outcome. In this study, we found that cancer patients predominantly used maladaptive strategies (such as self-blame and behavioral disengagement) to cope with cancer-related issues. Similar

Table 3: Correlation between perceived stress, coping, quality of life, and hopelessness

	Perceived stress	Coping	QOL	Hopelessness
Perceived stress		-0.059	-0.248	0.337
Coping	-0.059		0.506	-0.246
QOL	-0.248	0.506		-0.744**
Hopelessness	0.337	-0.246	-0.744	

** $P < 0.01$. QOL: Quality of life

findings have been observed among gynecologic cancer patients who were using escape/avoidance strategies^[56] and disengagement strategies by the breast cancer patients.^[57]

These maladaptive strategies may permit a patient to maximize active coping responses without being overwhelmed by distress over a short-term period. In the long-run, maladaptive coping strategies are detrimental because they preclude the patient's ability to face the reality of their life situation and to develop more adaptive copying responses.^[54,58] Patients using maladaptive coping strategies are, particularly at risk for poor QOL^[59] and similar findings have been observed in the present study also.

Hopelessness is characterized as a pessimistic cognitive style. Feelings of hopelessness are common reactions of patients as they approach the terminal phase.^[60] In this study, we found that cancer patients reported moderate level of hopelessness. Prior studies have shown that the fear and uncertainty caused by the notion of cancer, the long duration of the treatment, and negative thoughts constitute a risk factor in terms of depression and hopelessness.^[61] A patient who is faced with a mortal disease feels depressed and experiences hopelessness. Furthermore, the fact that the disease is chronic and fatal might be the most important factor in patients' negative feelings. The feeling that hopes have been destroyed or that a dilemma cannot be resolved makes hopelessness common in cancer patients.^[25]

The negative correlations observed between QOL and hopelessness are in line with findings in previous studies^[62,63] demonstrating that hopelessness has a negative impact on QOL. The current findings indicated that the diagnosis of cancer has generated hopeless feelings in cancer patients against the disease and caused them to reflect on the existence of an uncertain future. Therefore hope, which could be a propellant in achieving better QOL, whether regarding cure or preparation for a dignified death, remains in significantly low levels complicating the process of coping among those experiencing cancer. Feelings of uncertainty about the treatment being carried out, fear over the spread of the disease and also the feelings of impending death causing hopeless feelings^[64] in cancer patients are associated with poor QOL.^[40]

Among cancer survivors, hopelessness was positively correlated with QOL.^[65,66] The current findings revealed that cancer survivors are found to be optimistic and hopeful.

Prior studies reported that cancer survivors, who are more optimistic and hopeful for the future, cope better with cancer and even experience personal growth.^[53,67] Hope, a positive psychological factor has been found to help patients adapt to and give meaning in cancer, maintain a high level of well-being, and give directions and reason for survival.^[68] Prior studies found that hope played a substantial role in preventing the impairments in QOL^[69] and had beneficial effect on QOL.^[70] Despite experiencing catastrophic events, cancer survivors in the current study, manifested remarkable resilience in the face of illness. Resilience, as a positive psychological construct played a significant role in treating cancer correctly and promoting favorable psychological health^[71] thereby resulted in a better QOL in cancer survivors. Factors, such as age and marital status, have been associated with resilience outcomes. Several studies reported that older survivors reported better QOL than younger survivors.^[72,73] Marital status has also been implicated. Cancer survivors with partners have reported more positive psychological functioning than those who were single.^[66,74] Results of the current study indicated that majority of the cancer survivors were older (80%) and they reported better QOL than the cancer patients. Moreover, all of them were married and living with their partners shows that the presence of supportive interpersonal relationships has the potential to influence the well-being in cancer survivors.^[75]

The findings of the current study have practical implications for health-care management. Our findings highlight that cancer patients are experiencing significant psychological stress and hopeless feelings and using maladaptive coping strategies quite often which are associated with reduced QOL. There is an urgent need for them to explore psychological interventions to encourage patients combating psychological distress by a more positive and active coping style. Recent findings by Fawzy *et al.*^[76] shows that psychoeducational interventions reduce psychological distress and enhance effective coping and suggest a positive effect on immune cell functioning and survival in cancer patients. In addition, we can implement behavioral interventions that encourage patients to use more adaptive coping mechanisms and prevent the perpetuation of maladaptive strategies. Developing earlier interventions related to coping and stress management may be a way to foster resilience outcomes in patients with cancer across the cancer continuum.

Our work has several limitations that warrant consideration. First, we performed this study at a single treatment center and the participants were selected by convenience sampling which may limit the representation of the study. Second, the sample size is small, and majority of the participants were women with breast cancer. Third, the coping strategy tested here is based on one model and other coping models need to be explored. Fourth, the study is cross-sectional and the relationship between the variables may be different in longitudinal studies. Future research should focus on developing interventions to facilitate the use of certain coping strategies for cancer

patients under palliative care and to determine the impact of these interventions on their QOL, mood, and end-of-life care.

CONCLUSIONS

To conclude, cancer patients displayed maladaptive coping styles more frequently and experiencing psychological distress with significant decline in the QOL.

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Conflicts of interest

There are no conflicts of interest.

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