

The Relationship between Stress Coping Styles and Quality of Life among Patients with Breast Cancer

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ARTICLE INFO	ABSTRACT
<i>Article type:</i> Original article	Background & aim: The purpose of the present study was to determine the relationship between stress coping styles and quality of life (QOL) among patients with breast cancer.
<i>Article History:</i> Received: 07-Feb-2015 Accepted: 16-Agu-2015	Methods: This descriptive correlational study was conducted on 50 patients with breast cancer, selected via convenience sampling in Kerman, Iran. To collect data Stress Coping Strategy Scale (Moss and Billings, 1982) and the EORTC Quality of Life Questionnaire (QLQ-C30, version 3.0) were used. For data analysis, Pearson's correlation coefficient and stepwise regression analysis were conducted using SPSS version 21.
<i>Key words:</i> Breast cancer Quality of life Stress-coping style	Results: The results showed a significant positive relationship between problem-focused coping strategies and two dimensions of QOL including total symptoms and functional scale ($P=0.01$). In addition, emotion-focused coping strategies had a significant negative correlation with total symptoms and functional dimension of QOL ($P=0.01$). Emotion-focused coping styles predicted a higher rate of the variance in the functional dimension of QOL compared to problem-focused coping styles (34.7% vs. 26.2%). The functional scale was significantly correlated with problem-focused coping styles ($P=0.001$ and $\beta= 0.512$), indicating the predictive value of this scale. Moreover, the functional dimension of QOL was significantly correlated with emotion-focused coping strategies ($P=0.001$ and $\beta=-0.612$), showing the significance of this scale as a negative predictor. Conclusion: Problem-focused coping styles had the most significant contribution to the functional scale of QOL. Thus it can be concluded that using problem-focused coping styles can be effective for adjusting the psychological reactions of patients and coping with the disease in the breast cancer patients.

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Introduction

Diagnosis of cancer evokes fear and anxiety in patients. This fear is intensified in women diagnosed with breast cancer and leads to a devastating emotional experience (1).

Breast cancer is the most common cancer worldwide in women contributing more than 25 percent of the total number of cancer cases diagnosed in 2012 (World Cancer Research Fund International, 2014). It is also the most common non-skin cancer affecting women in the United States. According to the American Cancer Society, about one in eight US women will develop breast cancer in her lifetime. In 2015,

an estimated 231,840 invasive breast cancer cases will be diagnosed, and about 40,290 will die from breast cancer. (2)

Anxiety, fear, depression and uncertainty are prevalent at diagnosis and distress is normally intensified with the burden of treatment. The emotional response to breast cancer is independent of the stage of the disease, as women diagnosed with non-invasive breast cancer also experience an emotional turmoil (3).

Cancer is an unpleasant and undesirable experience for any individual. This disease disrupts the patient's occupation, socioeconomic

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status and family life and deteriorates one's quality of life (QOL). Response to cancer depends on many factors including the disease itself, patient's psychological status, coping with the disease as a stressor, family and social environments, disabilities and deformities caused by the disease and the treatment process.

Although response to stress seems to vary among different people, it induces a certain set of psychological, emotional and behavioral reactions. Some of these responses are understood to be involuntary reactions due to stress, while others are voluntary and conscious efforts to overcome stress. In fact, these reactions provoke "fight-or-flight" responses in patients (4).

Today, the increase in stressors and decreased human tolerance against these factors due to changes in lifestyle have made stress a sophisticated and fundamental problem, as it is influenced by different factors and their interactions. Industrialization, continuous scientific and technological advances, population growth, distrust of traditional mores, differences in family relationships, changes in the roles of family members, dysfunctional relationships between family members, poverty, deprivation, disabilities, chronic diseases and changes in cultural and social values could be introduced as the most important stress-inducing phenomena (5).

Stress is regarded as a major problem in today's world. As estimated, 75% of patients with physical conditions experience stress, which is known as a risk factor for heart conditions and cancer as two important factors of mortality, worldwide (6) furthermore, stress as a psychological factor is among the major causes of development and persistence of physical disorders. Stress has been consistently associated with negative health outcomes including increased rates of heart disease, slower wound healing and compromised immune function (7).

Stress coping skills have several cognitive and behavioral components. Generally, coping is described as efforts to enhance adaptation with the environment or avoid negative consequences under stressful circumstances. Skills such as creative thinking, problem-solving, flexible

behaviors and giving proper feedback in any given situation, can be useful, depending on the nature of the situation and the individual's vulnerabilities and capabilities (8).

Two coping strategies have been identified including problem-focused coping style, which comprises of direct behavioral and mental practices in the environment to change or modify threatening conditions, and emotion-focused coping style, which includes activities or thoughts to control undesirable emotions arisen by stressful conditions (9). Rather than discussing the nature of stress and its significance, recently, the focus has shifted to the role of individual's psychological dimension in facing stressors or emotional changes due to these factors, since appropriate treatment measures can help the person cope with stress (10).

In recent years, in addition to survival rate and life expectancy of breast cancer patients, QOL of these patients has become a subject of interest for researchers. More than two decades ago, "health-related QOL" was proposed as a significant component, in addition to treatment and other factors (11). Overall, according the World Health Organization, QOL is a multidimensional concept, defined as an individual's understanding of life, values, goals, standards and personal interests.

Sense of security, emotional conflicts, personal beliefs, goals and tolerance for frustration all influence one's perception of self (positive or negative) (12). When an individual is pleased with his/her life and can cope with his/her condition as a patient, he/she has more energy for self-care, can increasingly feel better and healthier and have a better QOL (13).

QOL helps clinical teams consider patients' emotions, and if necessary, revise the treatment plan or apply other interventions (14). Examination of cancer patients' QOL in medical studies is essential, since it helps specialists determine patients' living conditions and adverse effects of the disease on QOL; moreover, it can shed light on many obscure points (15).

However, evidence indicates that problem- and emotion-focused coping strategies vary in terms of the effects they have on mental and physical health of individuals. Problem-focused strategies are associated with problem-solving, thus, having positive effects on one's mental

health. Researches have indicated a negative relationship between emotion-focused strategies and poor health (16).

An individual adopts emotion-focused strategies to overcome stressful situations where he/she cannot tolerate or is incapable of managing the situation. Therefore, cancer patients mostly adopt these strategies to deal with the consequences of trauma (17, 18). Those who believe that cancer is uncontrollable and related to external factors usually consider their coping efforts as fruitless (19). Therefore, they hardly use problem-focused strategies for dealing with stress.

On the other hand, those with high self-esteem are confident of their ability to confront cancer; therefore, they are less likely to apply emotion-focused strategies. They mainly use problem-focused coping skills, which have considerable impacts on improving their QOL (20). In fact, cancer patients who use these coping strategies experience improvements in pain, depression, QOL and self-efficacy (21, 22).

Interventions designed to improve patients' ability to cope with stress can improve their QOL (23). These interventions have the potential to improve health outcomes in patients having a stressful experience (24). Research shows that cancer patients with emotional distress are more preoccupied, leading to the prevalent use of emotion-focused strategies in coping with cancer (25).

As previous studies have indicated, when a situation is deemed to be manageable, people usually resort to problem-focused strategies, while in less controllable situations; emotion-focused strategies are applied (13). In fact, when the stress level is high, the ability to face and solve problems is completely impaired or decreased. Therefore, under stressful circumstances, emotion-focused strategies are normally applied.

Threatening situations are considered important by many people. When an individual uses a variety of coping strategies and focuses excessively on the event, the attention is possibly shifted from the problem to the emotions associated with it. This is the reason why under important and stressful circumstances, emotion-focused strategies are mostly applied (26). Management and alleviation of psychological

symptoms, following physical conditions, not only enhance patients' skills and their fighting spirit, but also increase the efficiency of the immune system and recovery and reduce the physical symptoms (27).

In the present study, we aimed to examine the relationship between different coping styles (problem-focused and emotion-focused styles) and QOL (total QOL, functional scale and symptom scale). We also attempted to determine the relationship between coping styles and QOL in breast cancer patients, specify the association between each style and QOL and find out which coping style plays a more significant role in QOL of these patients.

Materials and Methods

In this analytical, descriptive study, the study population consisted of 50 breast cancer patients, referring to an oncology center in Kerman, Iran in 2014. The inclusion criteria were as follows: 1) lack of severe behavioral or mental disorders, 2) prior experience of breast cancer for at least three months, and 3) willingness to participate in the study. Patients who did not meet the inclusion criteria were excluded from the study.

Census sampling was applied for selecting the study samples. The researcher in addition to gathering patients' demographic characteristics (e.g., age, occupational status, marital status, educational level and duration of breast treatment), used two questionnaires in order to assess subjects' QOL and coping styles.

The coping style questionnaire consisted of 8 phrases on problem-oriented coping style and 11 phrases on emotion-oriented style, rated on a Likert scale (ranging from "never" to "a lot"). In addition, some questions were graded reversely based on their negative charge.

The coping style questionnaire was developed based on Moss and Billings (1982) questionnaire. The validity and reliability of this scale were confirmed by these researchers (28). In addition, its reliability was evaluated through split-half method and Spearman and Brown's formula (0.78) (29). In the present study, the reliability of this scale was calculated to be $r=0.79$ and $r=0.87$ for problem-oriented and emotion-oriented styles, respectively. To assess QOL, the third version of QOL questionnaire by

the European Organization for Research and Treatment of Cancer was utilized. This questionnaire consists of 30 items on three dimensions of QOL including the functional scale (i.e., physical function, role functioning, feelings, cognitive function and social functioning), the symptom scale (i.e., fatigue, pain, nausea and vomiting, shortness of breath, diarrhea, constipation, insomnia, decreased appetite and financial difficulties caused by the disease and treatment) and total QOL.

The score of each subscale is determined on a range of 0-100. In functional and total QOL scales, higher scores represent recovery or higher QOL, while in the scale of symptoms; higher scores indicate the presentation of more symptoms or problems. Kahrazei, Danesh and Azadfallah demonstrated the reliability of the third edition of the Farsi version of this questionnaire for measuring QOL in cancer patients. Therefore, this instrument can be applied in epidemiological and clinical cancer research, as well.

The internal consistency of the questionnaire was confirmed using Cronbach's alpha coefficient. In terms of reliability, the majority of scales were shown to be reliable, except for fatigue ($\alpha= 0.67$), pain ($\alpha= 0.65$) and nausea and vomiting ($\alpha= 0.63$). Cronbach's alpha for other scales was estimated above 0.76, which is desirable (30).

Results

The present findings showed that the patients were within the age range of 20-79 years, and the majority (54%) was 40-59 years old. In terms of occupational status, the majority of participants (76%) were unemployed. Most of the samples were married (74 %) and had

elementary level education (76%). The demographic characteristics of the subjects are presented in Table 1.

The average scores of problem- and emotion-focused coping skills were 1.11 ± 0.20 and 2.07 ± 0.31 , respectively. Regarding QOL scales, scores of total QOL, functional scale and symptom scale were 37.62 ± 10.26 , 30.72 ± 7.78 and 68.24 ± 9.17 , respectively. The descriptive statistics in participants are presented in Table 2.

Based on variance analysis, problem-focused coping strategies had a significant positive relationship with total QOL and functional scale of QOL ($P=0.01$). In addition, emotion-focused coping strategies had a significant negative correlation with total QOL and functional dimension of QOL ($P=0.01$). The results also revealed a significant positive relationship between emotion-focused coping strategies and the symptom scale ($P=0.05$).

According to the results demonstrated in tables 4 & 5, problem-focused coping style could predict 26.2% of the variance in the functional dimension of QOL. Emotion-focused coping style

Table 1. Demographic characteristics of participants in the study

Characteristics	Number (percentage)	
Age (years)	20-39	7(14.0)
	40-59	27(54.0)
	60-79	16(32.0)
Occupational status	Employed	12(24.0)
	Unemployed	38(76.0)
Marital status	Married	37(74.0)
	Widowed	3(6.0)
	Divorced	10(20.0)
Educational level	Elementary	29(68.0)
	Middle school	20(40.0)
	High school	1(2.0)

Table 2. Descriptive statistics in participants

Index Variables	Subscales	N	Mean	SD
Coping strategies	Problem-focused	50	1.11	0.20
	Emotion-focused		2.07	0.31
Quality of life	Total quality of life	50	37.62	10.26
	Functional scale		30.72	7.78
	Symptom scale		68.24	9.17

Table 3. Correlation coefficient analysis of descriptive characteristics associated with the total score of coping strategies and quality of life

Variables	Total quality of life	Functions	Symptoms
Problem-focused coping strategies	P<0.007 r=0.377	P<0.001 r=0.512	P>0.078 r=-0.252
Emotion-focused coping strategies	P<0.001 r=-0.492	P<0.001 r=-0.612	P<0.025 r=0.316

Table 4. Stepwise regression analysis of predictive psychological variables and quality of life

Model	B	SD	β	t	R	R2	R2 change	Sig.
Functional scale	0.013	0.003	0.512	4.12	0.512	0.262	0.262	0.001

Dependent variable: Problem-focused coping strategies

Table 5. Stepwise regression analysis of predictive psychological variables and quality of life

Model	B	SD	β	t	R	R2	R2 change	Sig.
Functional scale (QOL)	-0.025	0.005	-0.612	-5.3	0.612	0.374	0.374	0.001

Dependent variable: Emotion-focused coping strategies

could predict 37.4% of the variance in the functional dimension of QOL. The functional scale was significantly correlated with problem-focused coping style ($P=0.001$, $\beta=0.512$), indicating the positive predictive value of this scale.

Moreover, the functional scale of QOL was significantly correlated with emotion-focused coping style ($P=0.001$, $\beta=-0.612$), showing its negative predictive value. Therefore, problem-focused coping style had the most significant contribution to the functional scale of QOL ($\beta=0.512$). In other words, problem-focused coping style was the most powerful predictor of QOL.

Discussion

Breast cancer patients encounter different kinds of physical, mental and psychological stressors. The results of this study suggested that the use of effective coping strategies plays an important role in stress reduction. As Terry stated, to prevent the development and durability of stressful events, which cause physical and mental disorders and anxiety, problem-focused coping skills should be applied. The results indicated that problem-focused coping strategies had a significant positive relationship with total QOL and the functional scale of QOL. Moreover, a significant negative relationship was observed between emotion-focused coping strategies, total QOL and the functional scale of QOL. The results also revealed a significant positive correlation between emotion-focused coping strategies and symptom scale. However, with regard to

different scales of QOL, problem-focused coping skills played a more significant role, compared to emotion-focused coping skills. In other words, if problem-focused coping styles are promoted, the patients' QOL will increase, as well. Pei Ying Chen and Hui-Chen Chang found that problem-focused coping styles improve QOL through creating resistance against stress. Moreover, use of appropriate coping strategies lead to higher adaptability of individuals with stressful situations and improve their ability to adjust to stressful events (31).

This belief could lead individuals to consider themselves responsible for their own lives and be motivated to pursue their goals. In fact, individuals equipped with efficient coping skills are likely to access a set of helpful strategies (32).

Caitlin et al. (33) found that individuals with a high tolerance threshold have more satisfaction with life due to the use of active and effective coping styles. These coping styles increase individuals' efforts for successful adaptation. The ability to cope with stress and reinterpret annoying experiences to reduce or modify the associated negative effects is among the characteristics of individuals with such effective coping styles. As a result, these individuals psychologically and physically remain healthier and are more satisfied with life (1). Previous studies have confirmed this issue and have shown higher levels of satisfaction with life in psychologically and physically healthy individuals (32).

Therefore, recognizing effective mental factors in cancer not only prevents re-

occurrence of the disease, but also improves patients' QOL and their life span through psychological training, besides medical treatments.

Conflict of Interest

The authors declare no conflicts of interest.

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