Original Article

Coping strategies, quality of life and pain in women with breast cancer

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Abstract

Background: Breast cancer is the most common malignancy among Iranian women and is a significant stressor in women's life that may affect their coping strategies and quality of life. This study aimed to investigate coping strategies, quality of life and pain of women with breast cancer.

Materials and Methods: This was a cross-sectional study which held in Seyed-AL shohada hospital and two private offices in Isfahan, Iran. Target population was women with confirmed diagnosis of breast cancer in a recent year and between 18 and 60 years old. Data were collected via3 questionnaires (Brief cope, EORTC QLQ-C30 and Brief pain Inventory). The reliability and validity of these questionnaires were confirmed in different studies. Sixty-two patients completed the questionnaires. Analysis included descriptive statistics and Pearson correlation coefficient and *t*-test where necessary. All analysis were conducted using the SPSS version 16.0 and *P*-value of less than 0.05 considered as statistically significant.

Results: Sixty-two women with breast cancer completed questionnaires. The mean age of respondents was 45/81±6/78 years; most married (93/5%), high school-educated (41/97%), house wife (82/3%) and stage II (46/8%).

The most common coping strategies were religion, acceptance, self-distraction, planning, active coping, positive reframing and denial. Mean score for the worst pain during the past 24 hours was 6/24 ± 2/55 and for the least pain was 3/19 ± 2/17. The global health scale was 60.34 ± 21.10. Emotion-focused coping strategies were positively and significantly related to symptom aspect of quality of life ($r = 0/43$ $P \leq 0/01$) and affective interference of pain ($r = 0/36$ $P = 0/004$) and also was inversely correlated to functional health status ($r = -0/38$ $P = 0/002$). There was no significant correlation between problem-focused coping strategies and dimensions of quality of life and also different aspects of pain.

Conclusions: The findings of this study indicated that the care of breast cancer should address physical, psychological and social wellbeing and the findings point to the importance of taking individual coping strategies into account when evaluating the impact of breast cancer on psychosocial wellbeing. Description of coping strategies might be useful for identifying patients in need to particular counseling and support.

Key words: Breast cancer, coping strategies, Iran, pain, quality of life

Introduction

Breast cancer remains a major public health problem,[1] and it has the highest rank among women's cancers worldwide and breast cancer prevalence is increasing particularly in developing countries.[2] Breast cancer affects Iranian women at least 10 years earlier than women in developed countries.[3] The survival rate of women with breast cancer has increased due to effective available treatments but many of patients suffer from some psychological problems such as anxiety, depression, fear of cancer recurrence and they need proper interventions.[4]

As noted above psychosocial problem is a major challenge in patients with cancer and is defined as "multi-factorial unpleasant emotional experience of a psychological, social and spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment."[5]

Psychological problem is highly variable among people with cancer. At least one-third of the cancer population suffers from psychological problems those at higher risk tend to be women and young people.[5,6] Breast cancer is a significant stressor in women life that affects coping strategies and quality of life.[7]

Coping strategies can influence treatment outcomes and survival rates of women with breast cancer.[8]

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Coping strategies are specific effort, both behavioral and psychological that people use to combat stressful events.

Two main coping strategies are: Problem-focused and emotional-focused. Problem-focused strategies involve constructive actions for reducing or changing stressful circumstances. Emotion–focused are strategies that attempt to regulate the emotional consequences of stressful conditions and establish affective and emotional balance through control of emotion from stressful situations.[9,10]

In chronic stressful events emotion-focused strategies have negative impact on mental and physical health outcome.[11]

Delineation of coping strategies might be useful for identifying patients in need to particular counseling and support.

In addition because of important role of women in their family, it is important to pay attention about maintaining and increasing the quality of life in these patients. Studies on breast cancer survivors showed that these patients perceive benefit from their cancer treatment in long-term.[12] However pain is a disturbing symptom that affects the function and quality of life in these patients.[13] There is a consensus between physicians and patients that cancer pain is not managed properly and it is estimated that 60-90% of cancer patients especially more advanced cases suffer from pain.[14]

Because of the lack of enough information and relevant studies about copying strategies of women with breast cancer in Iran we performed this research. The objectives of this study were to explore copying strategies, quality of life, pain severity and interference of pain among women with breast cancer and to explore the relationship between them.

Materials and Methods

Participants and procedures: This was a cross-sectional descriptive study which held in Seyed-AL shohada hospital and two private offices in Isfahan in 2011. This research is part of a clinical trial study. The convenience sampling method was used. Inclusion criteria were confirmed diagnosis of breast cancer in women in a recent year and the age was between 18 and 60 years old. Recurrent and metastatic cases, those with previous or current other cancers and women with history of psychiatric disorders and chronic systemic diseases were not recruited in this study. The sample size was 28 in each group[10] with $\alpha = 0.05$ and $\beta = 0.2$. With prediction of 20% loss in each group, 34 patients were placed in each group. Sixty-eight patients completed the questionnaires, 6 participants were excluded from the study due to poor response quality. Finally sixty-two patients participated in this study. Ethical issue of this study was approved in Vice Chancellor for Research Affairs of Faculty of Medicine, Isfahan University of Medical Sciences. Each participant was informed, prior the interview, about the purpose of the study and written and informed consent was obtained from all participants. Also, the confidentiality of information was managed carefully by researchers.

Demographic characteristics like age, marital status, education and occupation and medical status like stage of cancer were recorded by a trained interviewer. The variables were measured using 3 questionnaires: Brief cope, EORTC QLQ-C30 and Brief Pain Inventory. All questionnaires were self-administered and in the case of illiterate patients, trained interviewers helped them.

Instruments

Brief COPE

Brief cope scale is a 28-item self-report measure of problem-focused and emotion-focused coping skills. The items of problem-focused scale are: Acceptance, religion, positive reframing, using instrumental support, using active coping, emotional support and humor. The emotion-focused scale consists of these items: Self-distraction, venting, self-blame, behavioral disengagement, denial and substance use. The participants were asked to respond to each item on a 4-point likert scale indicating what they generally do and feel when they experience cancer related stressful events (1 = I have not been doing this at all and 4I have been doing this a lot). It takes 10 minutes to complete the questionnaire.[15] Also the validity and reliability of this inventory for Iranian society studied and confirmed.[16]

EORTC QLQ-C30

The European Organization for Research and Treatment of Cancer Core Quality of life Questionnaire (EORTC QLQ–C_{30}) is composed of 5 multi-item function scales and 9 symptom scales and one global health scale. It has 30 items and takes 15 minutes to complete. All of the scales score from 0 to 100. A high scale score represents a higher response level. Thus a higher score for a functional scale and global health status represent a high level of quality of life but high scores for symptom scales represent high level of symptoms and problems.[17] Iranian version of the EORTC QLQ-C30 has reliability and validity to measure quality of life.[18]

Brief pain inventory

The BPI measures both pain intensity and interference of pain with the patient's life. Pain severity items on BPI are presented as horizontal lines of numbers with 0 means no pain, and 10 means pain as bad as you imagine. The BPI requires patients to rate their pain at the time of responding (pain now), and also at its worst,

least and average rating for the last 24 hours. It also includes 7 items with the same type of scaling on which participants separately rate how their pain interference with their life enjoyment, general activity, walking, mood, sleep, works and relations with others. Those items are bounded by 0 = dose not interfere and 10 = interfere completely. Two sub-dimension of pain interference were proposed: An affective sub-dimension (REM: Relation with others, Enjoyment of life and Mood) and an activity (WAWS: Walking, general activity, work and sleep). The mean of these scores can be used as pain interference score.[19]

We used Persian version of BPI that validity and reliability confirmed.[20]

The data were based on self-reports and there was the threat of social desirability bias, so we re-assured participants that their confidentiality and anonymity would be protected.

Statistical methods

In descriptive statistics, proportion was used to describe categorical and numerical variables. Mean and SD were used to describe continuous variables and for assessing the normal distribution of continuous variables Kolmogorov-Smirnov test was used. For association analysis, Pearson correlation coefficients were calculated to examine the relationships among the variables and *t*-test were used to compare means of continuous variables with normal distribution. All analysis was conducted using the SPSS program version 16.0. A *P* value of less than 0.05 was taken as statistically significant.

Results

Among 68 participants who completed the questionnaires 6 patients were excluded because they completed less than 50% of questions. 62 patients remained in our study.

Sociodemographic and medical characteristic of the participants were presented in Table 1. The mean age of patients was 45.81 ± 6.78 with the range from 32 to 60 years old. The majority of participants were married (93.5%), high school educated (41.9%) housewife (82.3%) and stage II (50.8%).

The most used problem-focused coping strategies included: Religion (7.14 ± 1.35), acceptance (6.83 ± 1.25) and planning (6.04 ± 1.48) [Table 2].

The most frequent emotion–focused coping strategies were self-distraction, (6.24 ± 1.42), denial (5.20 ± 2.17) and venting (4.88 ± 1.51).

Table 1: Socio demographic and medical characteristics of women with breast cancer (*n*=62)

Variables	*N* (%)
Age (years) mean (SD), range	45/81 (6/78), 32-60
Marital status	
Single	1 (1/6)
Widowed	2 (3/2)
Married	58 (93/5)
Divorced	1 (1/6)
Educational status	
Illiterate	5 (8/1)
Primary school	17 (27/4)
Secondary school	11 (17/7)
High school	36 (41/9)
University	3 (4/8)
Occupation	
House wife	51 (82/3)
Teacher	4 (6/5)
Retired	3 (4/8)
Hair dresser	3 (4/8)
Clerk	1 (1/6)
Stage	
IA	1 (1/6)
IB	4 (6/8)
IIA	14 (23/7)
IIB	16 (27/1)
IIIA	10 (16/9)
IIIB	9 (15/3)
IIIC	5 (8/5)
Missing	3 (4/8)

Quality of life scores were listed in Table 3.

58.1% of patients took analgesic for pain relieving, 3.2% used narcotics, 6.5% alternative medicine, and 32.3% did not use any medication.

The mean score of affective sub-dimension of pain interference was 4.33 ± 2.69 and for activity sub dimension it was 4.59 ± 2.59.

Pain during the past 24 hours had most interfered in mood (5.30 ± 3.16) and normal working (4.82 ± 3.36) of patients [Figure 1].

The correlation coefficients among coping strategies, quality of life and pain are presented in Table 4. All tests were two-tailed and conducted at 0.05 significance. Emotion–focused strategy was positively and significantly related to symptom aspect of quality of life and affective interference

Table 2: Mean and standard deviation of coping strategies of women with breast cancer

Variables	Mean	SD	Range
Problem-focused			
Acceptance	6/83	1/25	4-8
Religion	7/14	1/35	2-8
Planning	6/08	1/48	2-8
Positive reframing	5/72	1/71	2-8
Using instrumental support	4/77	2/03	2-8
Active coping	5/77	1/25	3-8
Using emotional support	4/37	1/85	2-8
Humor	3/56	1/86	2-8
Emotion-focused			
Self- distraction	6/24	1/42	3-8
Venting	4/88	1/51	2-8
Self-blame	3/93	2/02	2-8
Behavioral disengagement	4/85	1/58	2-8
Denial	5/20	2/17	2-8
Substance use	3/01	1/88	2-8

Table 3: EORTC QLQ-C_{30} scales of women with breast cancer (n=62)

	Mean±SD
Functional scales	
Physical	72/52±17/47
Religion	72/52±17/47
Role	69/34±22/01
Cognitive	62/90±29/47
Emotional	49/64±28/62
Social	75/26±29/06
Symptom scales/items	
Fatigue	46/05±28/05
Pain	40/91±27/07
Nausea	25/00±30/73
Dyspnea	40/91±27/07
Sleep disturbance	39/78±35/62
Appetite loss	31/18±33/53
Constipation	19/35±32/80
Diarrhea	5/9±16/55
Financial impact	66/66±34/14
Global Health scale	60/34±21/10

of pain and inversely and significantly correlated to functional status of quality of life.

Functional and global health scales were negatively related to symptom scale and all 3 sub scales of pain. We also found there was positive moderate association between functional and global scale of quality of life. Our results showed no significant correlation between problem-focused

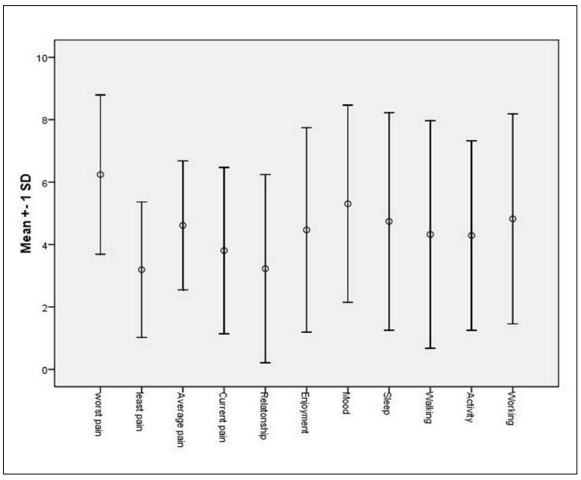

Figure 1: Subscales of pain in women with breast cancer (n = 62)

strategy and quality of life and also 3 aspects of pain. In t-test analysis women with less than 8 years education used more emotion–focused strategy (P = 0.031).

Discussion

The problem–focused copying strategies which most often used by the subjects in this study were religion, acceptance and planning. These finding are consistent to research by Haiati[21] and research of coping strategies of patients with diabetes in Turkey.[22]

Coping theorists often emphasized on the benefits of problem-focused coping, such as acceptance, positive reframing and turning to religion. Some studies show that increase religious coping decreases depression, anxiety and increases adaptation the illness process, life satisfactory and quality of life.[23]

People use different coping strategies that depend on the individuals, circumstance and cultures[24] for example; seeking social support was the most used coping strategies among breast cancer survivors in Thailand.[25] In Iran one qualitative study in women with newly diagnosed breast cancer showed that religious approach and spiritual fighting, thinking about the disease (positive thinking, hope, intentional forgetfulness; negative thinking: Hopelessness, fear), accepting the fact of the disease (active and passive acceptance), social and cultural factors and finding support from others were the main ways of coping.[26]

We distinguished that self-distraction, denial and avoiding were the most used emotion-focused coping strategies and patients, who used more emotion–focused strategies had more physical health symptom and pain affected some important aspects of their life like relationship with others, enjoyment of life and mood, so higher level of these

Table 4: Correlation between coping strategies, quality of life and pain in women with breast cancer (n=62)

Problem-focus	Problem-focus	Emotion-focus	Functional scale	Symptom scale	Global health	Worst pain	Affective interference	Activity interference
Pearson correlation	1	−0.148	−0.056	−0.110	0.115	0.079	−0.133	−0.008
Sig. (2-tailed)		0.251	0.665	0.397	0.372	0.543	0.304	0.952
Emotion-focus								
Pearson correlation		1	−0.380**	0.435**	−0.235	0.194	0.359**	0.205
Sig. (2-tailed)			0.002	0.000	0.066	0.132	0.004	0.109
Functional scale								
Pearson correlation			1	-0.715**	0.552**	-0.302*	−0.479**	−0.490**
Sig. (2-tailed)				0.000	0.000	0.017	0.000	0.000
Symptom scale								
Pearson correlation				1	−0.458**	0.266*	0.386**	0.429**
Sig. (2-tailed)					0.000	0.037	0.002	0.001
Global health								
Pearson correlation					1	-0.263*	−0.342**	−0.326**
Sig. (2-tailed)						0.039	0.007	0.010
Worst pain								
Pearson correlation						1	0.493**	0.579**
Sig. (2-tailed)							0.000	0.000
Affective interference								
Pearson correlation							1	0.758**
Sig. (2-tailed)								0.000
Activity interference								1
Pearson correlation								
Sig. (2-tailed)								

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level

strategies were associated with decreased functional status of quality of life.

Literatures reveal that coping through emotion–focused strategies may be useful in short-term and uncontrollable situation but in chronic and persistent stressful events these strategies may have negative mental and physical health outcomes. Women use emotion – focused strategies more than men.[11] Use of emotional coping relates to lower medical regimen adherence and greater viral load in HIV-positive individuals, more risky behaviors in HIV-positive injection users, greater pain and delayed recovery of function following surgical procedures and emotional coping predicts progression and mortality rate among patients with cancer.[27-30] Emotional coping during experimentally imposed stress also associated with tumor development in animal models.[31]

We distinguished women with less than 8 years education that used more emotion-focused strategies and in some studies it showed that better educated respondents relied more on problem-focused and less on emotional coping.[24] However Statnton *et al.* tested the hypothesis that coping through emotional approach enhances adjustment and health status for breast cancer patients on 92 patients within 20 weeks following medical treatment and 3 months later. They concluded that coping through expressing emotions surrounding cancer had fewer medical appointments for cancer-related morbidities, enhanced physical health and vigor, and decreased distress during the next 3 months compared with those low in emotional expression. Expressive coping also related to improve quality of life for those who perceived their social contexts as highly receptive.[32] In our study the functional scales of quality of life were higher in social subscale and lower in emotional subscale. In symptom scales the higher score (worse condition) and lower score (better condition) were attributed to fatigue and diarrhea respectively that these results are consistent with a study in Sweden but the Swedish patients had more favorable quality of life that is may be because of difference in socioeconomic state and comprehensive medical services.[33] In current study pain affected the mood and normal working more and this results are similar to the results of some other studies but the stage of cancer should consider in comparing the studies.[34]

There were no significant correlation between problem-focused and quality of life and different aspect of pain may

be due to small convenient sampling, so there was the threat of selection bias and limited generalizability.

Other limitation was the length of the questionnaires that were pretty long, which could have led to fatigue, but participants were allowed plenty of time in peaceful conditions.

In brief our findings point to the importance of taking individual coping strategies into account when evaluating the impact of cancer on physical and mental health outcomes to help identifying patients who require special counseling and supporting and planning for appropriate level of nursing care for these patients. Also knowing how Iranian women cope with diagnosis of breast cancer is necessary to nurses involved in the process of healing and can be used to design a nursing approach to improve appropriate coping in Iranian women suffering from breast cancer, and can provide healthcare professionals better understanding of these women as they face this diagnosis.

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