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Prediction of Hope of Life Based on Spiritual Well-being and Psychological Hardiness in Women With Breast Cancer

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ABSTRACT

Background: Psychological factors such as hope of life can slow cancer progression by improving immune function, which results in better protection against illness and may help the body to fight cancer. It is of high importance in cancer patients, especially in women with breast cancer who may experience more stress. The present study investigated the predictability of hope of life based on spiritual well-being and psychological hardiness in women with breast cancer.

Methods: The population of this study included all women with breast cancer who were referred to Cancer Institute of Iran for follow-up in the fall of 2016. One-hundred four patients were recruited based on purposive sampling. They completed the validated questionnaires for hope, spiritual well-being, and psychological hardiness (consisting of commitment, control, and challenge subscales). Data were analyzed by using Pearson's correlation coefficient and hierarchical multiple regression.

Results: Finding indicated a significant positive relationship between hope of life and spiritual well-being as well as psychological hardiness (commitment, control, and challenge) in women with breast cancer ($P < 0.01$). Spiritual well-being explained 39.5% of the variance in hope of life ($P < 0.01$). Psychological hardiness explained 16.7% of the variance in hope of life ($P < 0.01$), and only the commitment subscale predicted hope of life ($P < 0.01$) in women with breast cancer.

Conclusions: According to this study, patients with higher spiritual well-being and higher commitment (a subscale of psychological hardiness) had greater hope of life. Psychological interventions for strengthening these factors in women with breast cancer are suggested.

Introduction

Common cancers in women are cancers of breast, skin, colon, rectum, stomach, esophagus, the hematopoietic system, thyroid, ovary, and uterus.[1] Breast cancer is the most common cancer in women, accounting for 24.4% of all malignancies.[2]

Cancer creates stress, which can significantly affect every aspect of a person's life.[3] Cancer has the greatest impact on hope in comparison with other chronic diseases and is one of the main hope-shattering factors in these patients.[4,5] Hope has been identified as an important resource for cancer patients that has an immense impact on their quality of life.[6] Cancer and its treatments cause fear and anxiety and often decrease hope in these patients.[7] Although cancer does not mean certain death, it evokes images of deformity, pain, financial and social problems, dependency, family rupture, and death, causing deep emotional problems in patients

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and their families.[8]

Breast cancer is intolerable to most women. These patients have a fear of the reaction of their spouses, if married, or worry about marriage, if unmarried. They are also concerned of being sterilized due to treatments and losing charm.[9, 10] Quality of life is seriously affected in patients with breast cancer.[11] The prevalence of depression in women with breast cancer has been reported to be 29.6%.[12] Long-term stress reduces the body's immune function and leads to faster progress of cancer cells as well as a slowed treatment process. Anything that can reduce mental problems in these patients will be effective in the recovery process and will increase their quality of life.[13] Psychotherapy can help reduce the psychological effects of cancer treatments in many ways.[14]

Hope is defined as "a cognitive set compromising agency (belief in one's capacity to initiate and sustain actions) and pathways (belief in one's capacity to generate routes) to reach goals."[15] Hopeful people can tolerate the sickness crisis more easily.[16] On the other hand, research shows that religious/spiritual coping is an important strategy among cancer patients.[17] For those patients in the last stages of their illness, spirituality and religious peace may be even more important than physical and mental health. There is a significant positive relationship between hope of life and spiritual well-being in cancer patients,[15] and individuals with high degrees of hardiness are presumed to be better able to cope with negative effects of life stressors like cancer.[18] Research has shown a significant positive correlation between hardiness and hope of life.[3]

Given the psychological, emotional, and behavioral problems in women with breast cancer, the aim of this study was to assess the association of hope of life with spiritual well-being and psychological hardiness and to predict hope based on spiritual well-being and psychological hardiness in women with breast cancer.

Methods

The population of the study included all women with breast cancer who were referred to Cancer Institute of Iran for follow-up in the fall of 2016. One hundred four patients were recruited through purposive sampling. After providing necessary explanations about the study to participants and obtaining their informed consent, the researchers completed the questionnaires for them through structured interviews.

Inclusion criteria:

1. Age: 25–70 years old;
2. Ability to read and write and to comprehend the sentences of the questionnaire;
3. Having stage I, II or III breast cancer;
4. At least two months since disease diagnosis;
5. Having non-metastatic cancer;
6. Lack of a concomitant disease;
7. Not use of psychiatric drugs.

Research Tools

Demographic questionnaire

Demographic data included age, education, job, and duration of disease.

Hope scale

Snyder developed this scale in 1991, which consists of 12 items. Four items measure pathways (planning to meet goal), 4 items measure agency thinking, and 4 items are fillers. It is a 5-point Likert-type scale and the score can range from 8 to 40. Kermani *et al.* estimated the Cronbach's alpha at 0.86 and reliability at 0.81 through test-retest method for this scale.[19] In this study, Cronbach's alpha was 0.75, which indicates good internal consistency.

Spiritual Well-Being Scale

This scale, which consists of 20 items, was developed by Paloutzain and Ellison in 1982. Ten items measure religious well-being and 10 items measure existential well-being. It is a 6-point Likert-type scale and scores can range from 20 to 120. Seyed-fatemi and colleagues estimated the Cronbach's alpha at 0.82 for this scale.[20] In this study, Cronbach's alpha was 0.88, indicating good internal correlation.

Short form of hardiness scale

Kobasa *et al.* developed this shortened scale with 20 items in 1982, which consists of three subscales: commitment (9 items), control (7 items), and challenge (4 items). It is a 4-point Likert-type scale with scores ranging from 9–36 for commitment, 7–28 for control, and 4–16 for challenge. Cronbach's alpha for this scale was 0.67.[21] In this study, Cronbach's alpha was 0.79 for commitment, 0.78 for control, and 0.88 for challenge subscale, which indicated good internal correlation.

Statistical analysis

Data were analyzed by using Pearson's correlation coefficient and hierarchical multiple regression. This model was used to examine the relationship between the two independent variables and the dependent variable to isolate predictors (spiritual well-being and psychological hardiness, which have a significant influence on hope of life). SPSS software (version 21) was used for data analysis.

Results

The mean (± SD) age of patients was 45.48 ± 8.6 years. Demographic data, consisting of age, education, job, and the duration of disease, are demonstrated in Table 1.

The mean (± SD) of variables for all participants and the correlation coefficients for the variables of study are presented in Table 2. Results showed a significant positive relationship between the subscales of psychological hardiness and hope of life (commitment: r = 0.673, P < 0.01; control: r = 0.511, P < 0.01; and challenge: r = 0.392, P < 0.01). Also, there was a significant positive relationship between spiritual well-being and hope of life in women with breast cancer (r = 0.593, P < 0.01).

After examining the assumptions of multiple regression analysis (i.e. normality, collinearity, and independence of errors), we conducted the regression analysis. The results of multiple regression for the prediction of hope of life based on spiritual well-being and psychological hardiness (commitment, control and challenge) are presented in Table 3.

Table 1. Demographic information of participants

Variables (N = 104)	N (%)
Age (year)	
≤ 40	31 (29.8)
41–45	23 (22.11)
45–50	23 (22.11)
≥ 50	27 (26)
Education	
High school graduate	78 (75)
BS	19 (18.3)
MS and PhD	7 (6.7)
Job	
Housewife	79 (76)
Employed	11 (10.5)
Retired	14 (13.5)
Disease duration (year)	
< 1	46 (44.2)
1–5	39 (37.6)
5–10	17 (16.3)
> 10	2 (1.9)

Table 2. Correlation matrix of descriptive analysis for all variables

Variables	Mean	SD	1	2	3	4	5
1. spiritual well-being	99.68	13.22	-				
2. hardiness (commitment)	22.97	6.51	0.521**	-			
3. hardiness (control)	17.89	4.98	0.482**	0.593**	-		
4. hardiness (challenge)	9.54	4.38	0.284**	0.478**	0.367**	-	
5. hope of life	30.87	5.52	0.593**	0.673**	0.511**	0.392**	-

**P < 0.05; **P < 0.01*

As demonstrated in Table 3, in the first step, spiritual well-being was entered in the equation and predicted hope of life (F = 66.516, P < 0.01) and explained 39.5% of the variance in hope of life (R^2= 0.395). The regression coefficient was positive and significant (β = 0.356, P < 0.01). In the second step, the subscales of psychological hardiness were entered in the equation, which increased the explanation of the variance in hope of life to 56.2% (R^2= 0.562, ΔR^2= 0.167). It means that by entering the components of psychological hardiness (commitment, control and challenge) in equation and controlling for the effect of spiritual well-being, the explanation of the variance in hope of life was increased by 16.7% (ΔF = 12.590, P < 0.001).

The regression coefficient for the commitment subscale was positive and significant (β = 0.415, P < 0.01). The results demonstrated that spiritual well-being as well as the commitment subscale of psychological hardiness predicted hope of life in women with breast cancer.

Discussion

The aim of this study was to investigate the role of spiritual well-being and psychological hardiness in prediction of hope of life in patients with breast cancer. Hope is increasingly considered as important for coping with a disease such as cancer, and it enables people to cope with difficult and stressful situations and suffering,[22] Therefore, it is important

Table 3. Hierarchical multiple regression for the prediction of hope of life based on spiritual well-being and psychological hardiness in women with breast cancer

	b	SE	β	t	P value
Step 1 (spiritual well-being)					
Spiritual well-being	0.149	0.034	0.356	4.391	0.001
F(1, 102) = 66. 516, P < 0.01 R2 = 0.395					
Step 2 (psychological hardiness)					
Commitment	0.352	0.079	0.415	4.481	0.001
Control	0.078	0.098	0.070	0.820	0.414
Challenge	0.072	0.096	0.058	0.735	0.453
F(4, 99) = 31.74, P < 0.001 R^2 = 0.562					
ΔF = 12.59, P < 0.001 ΔR^2 = 0.167					

to study the predictors of hope of life in patients with cancer. The present study indicated that there was a significant positive relationship between spiritual well-being and hope of life, and spiritual well-being had a major contribution to predicting hope of life (39.5%) in women with breast cancer. This finding is consistent with the results of other studies. Rostamizadeh showed a significant positive relationship between spiritual well-being and hope in people with metastatic cancer, people with treatable cancer, and healthy persons.[23] The findings of the study by Shohani *et al.* showed the role of religious beliefs in hope, and religious beliefs could predict 12% of the variance in hope in cancer patients.[4] Yeganeh reported a significant positive correlation between religious orientation and hope in women with breast cancer.[24] Fallah *et al.* showed that spiritual therapy significantly increased the level of hope and mental health in women with breast cancer.[25] Baljani *et al.* demonstrated the important role of religious and spiritual well-being in hope in cancer patients.[16] Considering the result of the present study that spiritual well-being predicted hope of life and explained 39.5% of the variance in hope of life, the importance of spiritual well-being (consisting of religious well-being and existential well-being) in prediction of hope in patients with breast cancer is further emphasized.

The results of the current study also showed a significant positive relationship between psychological hardiness (commitment, control, and challenge) and hope of life, and hardiness explained 16.7% of the variance in hope of life. However, the regression coefficients showed that only commitment subscale predicted hope of life in patients with breast cancer. These findings are consistent with some previous studies. The study by Sanei *et al.* showed a significant positive correlation between hardiness and hope in women with breast cancer.[26] Ghasempour *et al.* and Naderi *et al.* also demonstrated a significant positive correlation between hardiness and hope of life.[27, 28] Pollock and Duffy showed that hardiness is the main predictor of psychological and physiological compatibility.[29] Craft showed that hardiness had a positive impact on coping with cancer and increased patient's tolerance against disease.[30] Temoshok and Fox found that people with higher scores on hardiness scale show more resistance to the disease and survive longer than other patients.[31] The results of our study showed the role of psychological hardiness in prediction of hope in breast cancer patients.

According to the results of this study, hope of life is greater in patients with breast cancer who have higher spiritual well-being and psychological hardiness (commitment). Therefore, psychological interventions for improving spiritual well-being and psychological hardiness are suggested in order to increase hope of life and quality of life in women with breast cancer. Given the importance of quality of life and addressing the psychological, emotional, social, spiritual, and functional aspects of cancer, further research is essential in the field of psych-oncology to explore the psychological, social, behavioral, clinical and ethical aspects of breast cancer for helping cancer patients and their families better adapt to cancer.

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