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The Comparison of Three Components of Breast Cancer in Females With Cancer and Healthy Ones: Coping Styles, Psychological Capital, and Patience

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Abstract

Introduction: The growing trend of cancer incidence in the past few decades and its effects on physical, psychological, spiritual, and social dimensions both in patients and their families make cancer one of the major health hazards of the century. Of all cancers, breast cancer (BC) is the most prevalent among females. Thus, the current study aimed at comparing three components of BC between females with breast cancer and healthy ones: coping styles, psychological capital, and patience.

Methods: Totally, 100 females with BC and 100 healthy ones were selected from the available sample based on the inclusion and exclusion criteria. The data were compared in accordance with coping styles, psychological capital, and patience by multivariable analysis and independent t-test.

Results: The results revealed that there were significant differences between females with BC and healthy ones in emotion-based coping strategy ($F_{(1,198)}$ =5.20, $P \leq 0.05$), self-efficacy subscale ($F_{(1,193)} = 5.58$, $P \leq 0.01$), hopefulness ($F_{(1,193)} = 4.50$, $P \leq 0.05$), and patience ($t = 1.99$, $df = 198$, $P \leq 0.05$). Subjects with BC, compared to the healthy ones, use the emotion-based coping strategy more often and are more patient. Healthy females had a greater share of self-efficacy and hopefulness.

Conclusions: An appropriate coping style, taking advantage of patience as a religious coping style, and a high degree of psychological capital can aid patients make better recoveries. These components have major roles in cancer control.

INTRODUCTION

Despite the major breakthroughs in methods of diagnosis and treatment, cancer entails greater risk of fatality compared with other diseases due to lack of certainty in effectiveness of treatment measures. In fact, for many, cancer still means an impending death [1, 2]. Cancer is the third common cause of death in Iran. As reported by Statistical Center of Iran, breast cancer (BC) is highly prevalent in Iranian females, with 10,000 new cases annually of which 1300 cases lead to death. Studies shed light on the fact that BC trend is upward in the developed countries as well as Asian ones. BC is considered the 5th ranking cause of death among cancers in Iranian females (4 per 100,000 people) [3].

Living with any chronic disease and the actions taken to treat it can be a source of serious psychological and social distress for the patient, and females with cancer are at risk of many of such adverse effects. Evidence suggests that patients are affected by psychological

complications rather than the physical side effects of cancer, and after the end of the active treatment period, the relapse of the illness of the patient is overwhelmed for a long time. Cancer diagnosis brings about sudden consequences as fear of death, deformity, disability, isolation, failure in communications, topped by fear of financial difficulties [4], which is an emergency call for patient's coping strategy in his/her own fashion. Coyne, et al., found that people responding optimistically and flexibly to life stresses take advantage of constructive coping strategies in order to stay in the control of life events have better functioning immune system; therefore, they cope more effectively with the disease and have higher degrees of mental health [5].

Psychology used to focus on studying the mental disorder instead of concentrating on the mental health; hence, ignoring humans' potential to grow and seek perfection. The third millennium came with a new approach in psychology, namely the positive psychology with its optimistic and hopeful view of mankind. Psychological capital, which is a combined and interconnected structure and includes four components of hope, optimism, self-efficacy, and resilience [6], is a major feature of positive psychology [7]. Psychological capital enables people to cope better and more constructively in face of stressful situations, experience less tension, and have higher capabilities when faced with difficulties, achieve an enlightened view of themselves and be less affected by daily events. As a result, they have better psychological health [8]. Creed et al., pointed out that the four sources function together in an integrated system to reinforce one another and form a strong shield against stressors [9]. Thus, the protective effects of these sources are emphasized in stressful conditions. Since cancer counts as a stressful situation, the higher the psychological capital of an individual, the more effective his coping strategies; as a result, he can come to terms with cancer and its side effects more easily.

In addition to the effects of psychological capital on an individual's coping style, in recent years psychologists pay more attention to the evaluation of effectiveness of religious concepts to treat diseases. Many studies investigated and confirmed multiple aspects of religion and spirituality and their positive effects on patients with cancer. Many patients with cancer believed that religious beliefs and enjoying spiritual health provide them with a substantial source of adaptation to the disease and treatments. Many studies back the fact that among adaptive responses in patients with cancer, referring to spirituality is of great importance with a decisive role in improving their adaptation to life [10-12]. Sabet et al., reported that patience was a psychological feature and a religious coping strategy through which one can overcome daily pressures that may be traumatic, thus seeping toward mental health [13].

The main research question of the current study was whether there are significant differences in coping strategies, psychological capital, and patience between females with BC and healthy ones.

METHODS

The current causal-comparative study was conducted on 200 females within the age range of 25-75 years; 100 subjects were patients with BC under treatment in Cancer Research Center at Shohada-ye-Tajrish Hospital, Tehran, Iran in 2017 and 100 healthy females matched by age with the patients with BC. The statistical population consisted of all patients with BC under treatment in Cancer Research Center. Convenience, random sampling method was used. Inclusion criteria were confirmed pathological diagnosis, in clinical stages of 1, 2, 3, and either during or after the treatment; age 25-75 years. Demographic data were collected using a check list and three standard questionnaires as follows:

1. The ways of coping questionnaire (WOCQ) was developed by Folkman and Lazarus in 1985 and contains 66 items and measures eight question- and emotion-based coping strategies. The eight patterns are of two categories of question- and emotion-based strategies [14]. The questionnaire consisted of the following strategies: direct coping (eight items), distance (eight items), self-control (nine items), social support (eight items), accountability (eight items), avoidance (eight items), planned problem-solving (nine items), and positive revaluation (eight items). The scoring range for the questionnaire is 0 to 198 and all the subscales were collect for scoring. They reported a range of 0.66 to 0.79 internal consistency (IC) coefficients for each set of coping strategies. The reliability of the WOCQ in Iran was investigated by Dejkam et al., with Cronbach's alpha coefficient of 0.79 [15].

2. The Luthans psychological capital questionnaire: The questionnaire was developed by Luthans et al., in 2007 [7]. It contains 24 items including four subscales of hopefulness (six items), self-efficacy (six items), optimism (six items), and resilience (six items). The scoring range for the questionnaire is 24-120.The score corresponding to each subscale was calculated separately and then, their sum was calculated as the total psychological capital. The validity of the instrument was

confirmed by Luthans et al., [7] using factor analysis. The maximum likelihood ratio Chi-square test was 24.6. Confirmatory fit index (CFI) and (the root mean square error of approximation) RMSEA were 0.97 and 0.08, respectively [7].

The Luthanz questionnaire in Iran was standardized by Nouran and Younessi (2016). To verify its reliability, the IC coefficient was used in two Cronbach's alpha and theta [16]. The results showed that the reliability coefficient was acceptable (Cronbach's alpha =0 .945 and theta 0.952).

3. Patience questionnaire: This scale was developed by Sabet et al., [13] based on three sources (Quran and its interpretations, hadith, and ethics) and contains 48 items based on the three sources that are scored based on a five-option Likert scale (always, usually, often, sometimes, rarely). The three categories are: 1) Patience in the hardships (24 items), 2) Patience against sin (10 items), and 3) Patience with obedience (14 items). The scoring range for the questionnaire is 0 to 192. The items are randomly arranged. Sabet et al., [13] reported the reliability of 0.866 and validity coefficient of 0.93 for this instrument.

Analysis Method

Data were analyzed using descriptive and inferential indices. Descriptive statistics indices of the current study included mean, standard deviation, individual scores in three variables of coping styles, mental capital, and patience. The inferential statistical method used in the current study included independent T value and multivariate analysis of variance (MANOVA) for data analysis to determine the difference between the two groups of females with BC and healthy ones.

RESULTS

To achieve the results, the mean and SD of the study variables were then calculated with SPSS and the results showed that the mean scores of problem-oriented coping style in females with BC and healthy ones were 36.83 and 37.92, respectively. The mean scores of emotional coping style in females with BC and healthy ones were 40.35 and 37.42, respectively. The average total scores of psychological capital in females with BC and healthy ones were 87.89 and 90.22, respectively. The average scores of self-efficacy, hopefulness, optimism, and resilience in females with BC were 22.36, 22.62, 21.01, and 22.15, and those of the healthy females were 23.93, 23.75, 21.42, and 21.30, respectively. Also, the mean scores of patience rate in females with BC and healthy ones were 120.21 and 112.32, respectively.

According to the results, the mean ± standard deviation (SD) age of females with BC was 45.45 ± 9.50 years, while 45.02 ± 9.24 years for the healthy group. To determine the normal distribution, frequency percentage, and level of significance of their distribution were evaluated and the results on Table 1 showed that in both groups most of them were married and had a high school diploma.

Table 1: Distribution of Frequency Percentage and Level of Significance in the Two Groups According to Marital Status and Education Level

Variable	Healthy Females, %	Females With Breast Cancer, %	P Value
Marital Status			0.016
Single	13	8	
Married	70	86	
Divorced	12	2	
Widowed	5	4	
Education			0.065
Illiterate	4	8	
Below High School	24	23	
Diploma	30	41	
Bachelor's Degree	25	22	
Master's Degree and Above	17	6	

To study the significance of differences in observation in Table 2 and compare the mean of coping styles and psychological capital subscales in the two groups, MANOVA was used and the results were analyzed with SPSS.

Independent t-test was used to compare mean scores of total psychological capital and patience in females with BC and the healthy ones. The results were calculated with SPSS and data on Table 3 showed that T value, degree of freedom (df), and P value of total score of psychological capital were -1.73, 172.12, and 0.085, respectively and the T value, df, and P value of patience were 1.99, 198, and 0.048, respectively.

Before the multivariate analysis of variance, its assumptions were investigated. The mbox test showed that homogeneity of variance-covariance matrix was observed ($P > 0.05$, $F = 1.002$). Also, the results of homogeneity of variances by Leven test showed that both in problem- based coping style ($F = 0.19$, $P > 0.05$) and emotion-oriented style ($P > 0.05$, $F = 0.94$) homogeneity of variances was assumed.

The results of the Pillai's trace showed a significant

Table 2: Descriptive Indices of the Study Variables Total Scores in Healthy Females and the Ones With Breast Cancer

Variable	Healthy Females, mean ± SD	Females With Breast Cancer, mean ± SD
Problem-Based Coping Strategy	37.92 ± 9.13	36.83 ± 9.64
Emotion-Based Coping Strategy	37.42 ± 8.64	40.35 ± 9.49
Self-Efficacy	23.93 ± 3.17	22.36 ± 4.12
Hopefulness	23.75 ± 3.13	22.62 ± 4.62
Optimism	21.42 ± 3.17	21.01 ± 3.94
Resilience	21.30 ± 4.03	22.15 ± 2.75
Total Score of Psychological Capital	90.22 ± 7.42	87.89 ± 11.20
Patience	112.32 ± 30.04	120.21 ± 25.81

Table 3: Comparison of Psychological Capital and Patience in the Two Study Groups

Group	Females With Breast Cancer, mean ± SD	Healthy Females, mean ± SD	T Value	Degree of Freedom	P Value
Psychological Capital	87.89 ± 11.20	90.22 ± 7.42	-1.73	172.12	0.085
Patience	120.21 ± 25.81	112.32 ± 30.04	1.99	198	0.048

Table 4: The Difference Between Females With Breast Cancer and Healthy Ones in Coping Styles and Subscales of Psychological Capital

Comparative Variable	Sum of Squares	Degree of Freedom	Mean of Squares	F	P Value
Problem-Based Coping Strategy	59.40	1	59.40	0.67	0.413
Emotion-Based Coping Strategy	429.24	1	429.24	5.20	0.024
Self-Efficacy	117.69	1	117.69	8.58	0.004
Hopefulness	70.82	1	70.82	4.50	0.035
Optimism	36.32	1	36.32	3.01	0.084
Resilience	12.55	1	12.55	0.97	0.325

difference between females with BC and healthy ones in the combined variable resulting from the coping styles of the problem-and-emotion (trice pylori = 0.032, $P < 0.05$, $F_{(2, 197)} = 12.3$).

Now, for the purpose of knowing the difference between the two groups in terms of variables, results of MANOVA are presented in Table 4.

Based on MANOVA results (Table 4) between the two groups in the emotion-oriented coping style, $P = 0.024$, $F_{(1,198)} = 5.20$. Also, data on Table 4 show $F_{(1,198)} = 0.67$ and $P = 0.413$ between the two groups in the problem-oriented coping style variable. The results of MANOVA (Table 4) showed $F_{(1,193)} = 5.58$ and $P = 0.004$ between the two groups in the self-efficacy scale. The results showed $F_{(1,193)} = 4.50$ and $P = 0.035$ between the two groups in the hopefulness scale. The information illustrated on Table 4 showed $F_{(1,193)} = 3.01$, $P = 0.084$ between the two groups in the optimism scale and $F_{(1,193)} = 0.97$, $P = 0.325$ in resiliency.

Normality of the variables was investigated and the results showed that the distribution of skewness and kurtosis of all variables ranged 2+ to 2, and it can be said that the distribution of these variables was symmetric and normal.

DISCUSSION

The current study results revealed significant differences between the two groups in emotion-based coping strategy, self-efficacy subscale, hopefulness, and patience. The females with BC, compared with the healthy subjects, used the emotion-based coping strategy more often and were more patient. Healthy females had a greater share of self-efficacy and hopefulness. The findings of the current study shed light on the fact that females with BC tend to use emotion-based coping strategies more than the healthy subjects. In case of problem-based coping strategies, no significant difference was observed between the two groups, which was in line with the findings of Ursaru et al., Ebadi Vashmehsara et al., Zahed et al., and Lloyd-Williams et al., [17-20].

To confirm the hypothesis, it can be argued that cancer diagnosis brings about sudden consequences such as fear of death, deformity, disability, isolation,

failure in communications, and being topped by fear of financial difficulties. As a result, the patient is in urgent need of coping with the disease in her own way, and as Pargamnet et al., believes, life finds a more significant meaning at times of pressure and trauma; therefore, coping is defined as seeking meaning for life [21]. Based on the obtained results in the current study, patients tend to use emotion-based strategies more often than the healthy individuals; it shows that patients attempt to regulate emotions related to the disease rather than pinpointing particularly on the cause of stress and applying a logical, solution-based approach. Based on the findings of a study by Lloyd Williams et al., [20] and regarding the fact that emotions are evoked deeply due to a fatal disease such as cancer as well as the patients' complete engagement with the disease and other related problems such as anxiety and depression, using the emotion-based strategies seems quite natural, but it should be borne in mind that although such an approach is useful in the short run, coping with the problem and devoting scrupulous attention is more useful in the long run. Halpern et al., concluded in his research that problem-based approach is similar to a mental fender against pressures [22]. People are highly recommended to apply such a strategy at times of difficulty especially in the case of incurable diseases.

The current study also found that regarding the psychological capital, there was no significant difference in average psychological capital score between the two groups ($t = -1.73$, $df = 172.12$, $P > 0.05$), and that females in the healthy group had higher scores on self-efficacy index ($F_{(1,193)} = 5.58$, $P \leq 0.01$) and hopefulness ($F_{(1,193)} = 4.50$, $P \leq 0.05$). The two groups were not significantly different in optimism ($F_{(1,193)} = 3.01$, $P > 0.05$) and resilience ($F_{(1,193)} = 0.97$, $P \leq 0.05$). The findings of the current study were consistent with those of Ho et al., and Coyne et al., [5, 23].

As shown by numerous studies earlier, patients with cancer have lower levels of mental health and experience higher levels of hopelessness, depression, anxiety, and other mental problems when compared with healthy individuals [24-28]. Furthermore, their self-confidence, due to their disease, surgery, or mastectomy, which damage their beauty and femininity, decreases. Also, chemotherapy, radiotherapy, and other treatments with their side effects hinder their physical and economic strength leading to further drop in their self-efficacy (self-confidence). Based on the results of the current study, the level of education was lower in females with BC than the healthy ones. The number of females with higher education in the patients' group was lower, which represented lower social class in this group, another cause of decrease in their self-confidence. In a study, Coyne et al., concluded that people that respond positively to life stresses and are in control of their life have better-functioning immune systems and most probably better health and face life stresses more effectively [5]. Coyne et al., also pointed out that females with BC, in comparison to healthy ones, have lower scores on self-efficacy [5]. According to Barbara, hope is expecting positive results from life events and is a kind of trust in present, future, and a meaningful life [29]. Patients with cancer, due to their problems induced by the disease couple with the probability of recurrence and death, lack hope and need professional help to improve their mental health status.

The current study also found that females with BC have definite values of patience compared with healthy ones ($t = 1.99$, $df = 198$, $P \leq 0.05$).

Evidence to back this hypothesis is the fact that cancer adversely affects psychological, emotional, physical, spiritual, and social dimensions of the patient and the family [30-34] and that females after cancer diagnosis should tolerate difficulties of the disease as well as its social, familial, cultural, economic, etc. consequences, which needs a great deal of patience. The stages of the disease including the surgery, chemotherapy, radiotherapy, hormone therapy, etc. cause a lot of pain, which may result in greater patience even in people with low patience prior to the disease.

Akbari et al., concluded that the hallmarks of patients such as belief in God, spirituality, religion, understanding of the meaning of death, cultural beliefs, education levels, family cohesion, and past experiences are all in response to effective cancer [3]. According to a study conducted by Hosseini et al., spiritual healing leads to a change in the expression of the patient's gene expression, which suggests the effect of spirituality on improving the physical condition of patients [34]. Evidence shows that after cancer diagnosis, patients seek a new meaning for life and a renewed faith, which aids them throughout the process [10-12], and that patience is an effective way to cope with crises in life and helps them adapt themselves more easily with challenging circumstances. An appropriate coping style, taking advantage of patience as a religious coping style, and a high degree of psychological capital can aid patients make better recoveries. These components

have major roles in cancer control.

The current study was conducted on patients with cancer covered by the Cancer Research Center, most of them were from medium to low socioeconomic groups and the participants in the study were females and a research sampling method was available. Therefore, generalizing its results should be done cautiously. Also, the study population was only in the age range of 25-75 years; therefore, it is necessary to act with caution in generalizing the results to others. Due to the limited ability to collect data by the researcher, it seems that future studies should be better focused on a larger and more comprehensive population and all age groups in order to properly generalize the results to the whole society.

Further studies should be conducted on patients with other cancers to generalize the results to the entire community of patients with cancer. Also, due to the length of the patient's treatment process, it was not possible to study them after their improvement.

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CONFLICT OF INTEREST

The authors declared no conflict of interest.

ETHICS APPROVAL

The current study was approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran (interception code: 8514).

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