Original Article

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Psychological Well-Being of Patients with Breast Cancer and Its Relationship with Emotional Intelligence

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ABSTRACT

BACKGROUND AND OBJECTIVE: Breast cancer is the most common and the most influential type of cancer in women, which causes deep excitement and severe emotional problems. Considering the increase in survival rates, patients with breast cancer continue to live longer with this disease and its complications and stresses, compared with patients with other types of cancer, which may affect the psychological well-being of this group of patients. This study was conducted to determine the psychological well-being of women with breast cancer and its relationship with emotional intelligence.

METHODS: This cross-sectional study was conducted among 90 women with breast cancer who referred for treatment or counseling to one of the hospitals of Shahid Rajaee in Babolsar, Ayatollah Rohani in Babol and the Cancer Counseling and Screening Center in Babol, using convenience sampling. In addition to demographic questions, Bradberry & Greaves's Emotional Intelligence Questionnaire (possible range = 0 – 140) and Ryff's Psychological Well-being Scale (possible range = 0–108) were completed.

FINDINGS: The mean age of the participants was 45.98±9.74 with an age range of 24 – 70 years. The mean score of psychological well-being was 75.01±12.10 and the mean score of emotional intelligence was 77.14±19.53 and psychological well-being had a significant relationship with emotional intelligence ($r = 0.45$, $p < 0.001$). The results showed that emotional intelligence explains and predicts 20% of psychological well-being changes ($\beta = 0.48$). Among the demographic characteristics, only the relationship between education and psychological well-being was significant ($r = 0.18$, $p = 0.070$).

CONCLUSION: The results of the study showed that emotional intelligence of women with breast cancer predicts a part of their psychological well-being.

KEY WORDS: *Cancer, Breast, Emotional intelligence, Mental health*.

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Introduction

Cancer is one of the most important diseases of the current century and is the second leading cause of death after cardiovascular disease (1). Breast cancer is one of the most common and worrying health problems of women in the world and accounts for 30% of women's cancer (2 and 3). More than 1.1 million women worldwide are diagnosed with breast cancer each year, and more than 410,000 of them die from the disease (4). The rate of breast cancer in Iranian women is 27.5 per 100,000 (5).

The standardized incidence rate in developed countries is 86, in less developed countries is 27, and the global average is 38 per 100,000. This rate is 28 per 100,000 in Mazandaran province (6). The five – year survival rate in these patients is 48 – 84% in different centers and the overall survival rate is 71% (5). This indicates that these people continue to live longer than others with other types of cancers, and they have to suffer the disease and its short – term and long – term complications for a longer period, and this may affect the psychological well-being of this group of patients (7).

The results of a study by Zamani et al. showed that cancer patients have lower quality of life and psychological well-being than diabetics and patients with multiple sclerosis (8). Research has also shown that psychological well-being has a significant effect on the perception of breast cancer symptoms in affected women (9). Well-being is a factor that forms the physical, mental, and social dimensions of human beings in positive ways. When a person's well-being decreases, the person may experience psychological problems such as loneliness, isolation, and depression (10). Molaei usali et al. in their research concluded that psychological well-being has a direct relationship with quality of life (11).

Therefore, paying attention to the psychological well-being of patients with breast cancer is very important. Psychological well-being, according to Ryff et al., includes dimensions such as self-acceptance, individual growth, the purpose in life, positive relationships with others, environmental mastery (the ability to effectively manage personal life and the surrounding world), and the sense of autonomy (12). An autonomy occurs when one considers himself to be responsible for the consequences of his activity (10). Individual growth means that individuals must continuously grow in different aspects of life to achieve high levels of mental function (12). Self-acceptance is a kind of insight that makes a person aware of his weaknesses and strengths (13).

The sense of well-being has emotional and cognitive components; people with a high sense of well-being, experience positive emotions, and have a positive assessment of the incidents (14). Emotional intelligence is one of the emotional components affecting psychological well-being. From Bar-On's perspective, emotional intelligence is a group of non-cognitive skills, talents and abilities that can increase individual's ability to cope with environmental pressures and constraints (15).

People with high emotional intelligence are more capable of controlling stress factors and can manage mental pressure (16).

Rey et al. found that emotional intelligence was a significant predictor of the quality of various dimensions of life (17). Rajabpour et al. in their study acknowledged the relationship between emotional intelligence and physical adaptation and emotional adaptation in cancer patients (18).

The result of a study that investigated the relationship between emotional intelligence and psychological well-being in students showed that the higher the emotional intelligence of female students, the higher their psychological well-being (19). Banihashemian et al. also showed that there is a significant relationship between emotional intelligence and general health (20).

Individuals who focus on their feelings and identify and understand them, and rebuild their mood, can minimize the effects of stressful events and easily confront them, and therefore benefit from more physical and mental health (21).

Considering the increase in the number of breast cancer patients and the importance of psychological problems due to its impact on all aspects of life of people, particularly women, and the lack of a published report on the psychological well-being of breast cancer patients in Iran, this study was conducted to investigate the psychological well-being of women with breast cancer and predict psychological well-being based on emotional intelligence and its components.

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Methods

After being approved by Ethics Committee of Islamic Azad University of Sari (IR.IAU.SARI.REC.1395.23), this cross-sectional study was conducted among women with breast cancer who referred for treatment or counseling to one of the hospitals of Shahid Rajaee in Babolsar, Ayatollah Rohani in Babol and the Cancer Counseling and Screening Center in Babol, using convenience sampling.

To calculate the sample size, the questionnaires were first completed for 30 people of the target population according to the study protocol and then the results were entered into SPSS software. The initial results showed the correlation between research variables to be 0.366 and, according to the degree of association and considering 5% Type I and Type II Errors (alpha and beta), the data entered Gpower 3 software for calculating the sample size, and 87 samples were finally estimated with the highest statistical power.

With the opinion of the statistician in this study, 90 people were included in the study. After obtaining permission from Babol University of Medical Sciences, we referred to the mentioned hospitals and medical centers to have access to the subjects. Considering ethical issues and completing written consent, questionnaires were provided to patients with breast cancer who could read or wright and declared their consent for participating in the study. Three questionnaires were used to collect information. The demographic questionnaire includes age, marital status, education, occupation, place of residence (city or village), and duration of the disease.

The Bradburry-Graves questionnaire was used to measure emotional intelligence. The scale has 28 items with answers including never, rarely, occasionally, usually, almost always, and always, based on a 6-point Likert scale. The questionnaire consists of two parts: the first part includes self-awareness and self-management skills, which is related to the individual (individual ability), and the second part includes social awareness and relationship management, which focuses on the relationships of the individual with others (social capability). The method of grading the test is based on Likert method (0 – 1 – 2 – 3 – 4 – 5), and the total score the subject obtains in each of the questions forms the total score of the test. The highest score is 140 and the lowest score is zero. The closer the score to 140, the higher the emotional intelligence. The test was validated by Ganji et al. He evaluated the validity of this questionnaire through the implementation of the Bar-On Emotional Intelligence Questionnaire and confirmed it. He also measured the reliability of this questionnaire using the Cronbach's alpha method and reported a reliability coefficient of 83% (22).

The Ryff questionnaire was used to measure psychological well-being. The original version of the questionnaire has 84 questions, and since the test is very long, the 54 and 18 item versions were prepared. This questionnaire assesses the six main components of the psychological well-being pattern (self-acceptance, positive relationships with others, autonomy, environmental mastery, purposeful life, and individual growth). Scoring is based on the 6-point Likert scale (1 = totally disagree to 6 = totally agree). The total psychological well-being score is obtained from the total score of 18 items (23).

Considering the physical condition of the patients, a questionnaire with 18 questions was used in this study. The validity of the scale was correlated with Bradborn's emotional balance, Nugarten's life satisfaction, and Ruzenberg's self-esteem. Correlation between the results of the Ryff test and each of the above scales was acceptable (24). In Iran, the internal consistency was measured using Cronbach's alpha in a research with subjects who were university students. The results for the subscales of environmental mastery was 0.69 %, personal growth was 0.74 %, positive relation with others was 0.65 %, purposeful life was 0.73 %, self-acceptance was 0.65 %, autonomy was 0.6 % and the total score was 0.94 % (25). The results were collected and coded using SPSS Ver.22 software, and were analyzed using Pearson correlation coefficient and linear regression tests, while $p < 0.05$ was considered significant.

Results

Ninety patients with breast cancer participated in this study, with an average age of 45.98±9.74 and an age range of 24–70 years old, while more than half of the patients were under 50 years old (table 1). The mean emotional intelligence was 77.14±19.53 and

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psychological well-being was 75.1±12.10. Among the components of emotional intelligence, the component of relationship management was the highest (23.38±7.76) and social awareness was the lowest (14.73±3.5) average.

Among the components of psychological well-being, environmental mastery and purposeful life were the highest (13.38±2.9) and the lowest (11.33±2.71) average (table 2).

Table 1. Frequency of demographic characteristics of women with breast cancer (N=90)

Variable	Groups	N(%)
Age (years)	< 50	57(63.3)
	≥ 50	33(36.7)
Education	Elementary	24(26.7)
	Post Elementary School	16(17.8)
	High school	36(40)
	University	14(15.6)
Place of residence	City	56(62.2)
	Village	34(37.8)
Marital status	Married	75(83.3)
	Single *	15(16.7)
Occupation	Employed	12(13.3)
	Housewife	78(86.7)
Duration of cancer (year)	1	55(61.1)
	2	20(22.2)
	3 ≤	15(16.1)

*** Unmarried, widow, divorced**

The results of the test showed a significant positive relationship between psychological well-being and emotional intelligence. In other words, patients with more emotional intelligence have higher psychological well-being (p=0.000, r=0.45).

The psychological well-being of emotional intelligence dimensions had the highest relationship with social awareness (r=0.41) and had the least positive correlation with self-management (r=0.36). Among the dimensions of psychological well-being, individual growth had most significant correlation with emotional intelligence (r=0.5).

However, dimensions of psychological well-being had a significant relationship with emotional intelligence, but there is no significant relationship between purposeful life and emotional intelligence (r=0.07) (table 3).

Table 2. The mean and standard deviation of components of psychological well-being and emotional intelligence in women with breast cancer (N=90)

Scale	Scale range	Mean±SD
Psychological well-being	1 – 108	75.01±12.10
Self-acceptance	1 – 18	12.27±3.09
Positive relationships with others	1 – 18	13.22±3.21
Autonomy	1 – 18	11.8±2.17
Environmental mastery	1 – 18	13.38±2.9
Purposeful life	1 – 18	11.33±2.71
Individual growth	1 – 18	12.98±3.66
Emotional Intelligence	0 – 140	77.14±19.53
Self-awareness	0 – 30	18.23±4.97
Self-management	0 – 45	22.46±6.44
Social Awareness	0 – 25	14.73±3.53
Relationship Management	0 – 40	23.38±7.76

To show the relationship between psychological well-being and emotional intelligence and demographic variables in the regression model in the first stage, the results of linear regression analysis in a separate single-variable study showed that emotional intelligence alone can predict 20% of the changes in criterion variable (psychological well-being).

In addition, for each one unit increase in emotional intelligence score, 0.28 point is added to psychological well-being, which is statistically significant (p<0.001). Moreover, for each one year increase in education, the psychological well-being score increases by 0.57 points (p=0.070), and the rest of the demographic variables did not show significant correlation (table 4). In the second stage, to show the results of multivariate analysis (adapted effects), the simultaneous correlation between psychological well-being and emotional intelligence with the presence of all variables in the results model shows that emotional intelligence with all variables in the model can predict 28% of the changes in criterion variable (Psychological well-being).

In addition, due to insignificant demographic variables in multivariate analysis (table 4), backward modeling was also used in linear regression. All demographic variables were excluded from the model due to lack of significant statistical relation with psychological well-being and in the final model, only

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the emotional intelligence variable was still related to psychological well-being in the presence of other variables, which was identified as a strong and independent predictor. For each one unit increase in emotional intelligence score, 0.31 units are added to the psychological well-being score (p<0.001).

Table 3. Pearson correlation coefficient of components of emotional intelligence with different dimensions of psychological well-being in women with breast cancer (N=90)

Components	Psychological well-being	Individual growth	Purposeful life	Environmental mastery	Autonomy	Positive relationships with others	Self-acceptance
Self-awareness	0.39 **	0.42 **	0.15	0.27 **	0.22 *	0.32 **	0.13
Self-management	0.36 **	0.44 **	0.03	0.28 **	0.11	0.28 **	0.24 *
Social Awareness	0.41 **	0.41 **	0.09	0.26 *	0.32 **	0.28 **	0.25 *
Relationship Management	0.40 **	0.43 **	0.03	0.25 *	0.27 **	0.38 **	0.22 *
Emotional Intelligence	0.45 **	0.50 **	0.07	0.33 **	0.23 *	0.37 **	0.25 *

***p<0.05, ** p<0.01**

Table 4. The relationship between psychological well-being and variables in the study (single and multivariate analysis) in women with breast cancer (N=90)

Variables	Multivariate Analysis (Adaptive Effects)		Single-variable analysis (raw effects)	
	P-value	B (CI-%95)*	P-value	B (CI-%95) *
Emotional Intelligence	0.000	0.31 (0.19 – 0.43)	0.000	0.28 (0.16 – 0.39)
Age (year)	0.668	- 0.06 (- 0.33 – 0.21)	0.483	- 0.09 (- 0.35 – 0.16)
Education (years)	0.262	0.43 (- 0.33 – 1.19)	0.075	0.57 (- 0.06 – 1.20)
Location (city / village)	0.160	3.63 (- 1.46 – 8.73)	0.713	0.97 (- 4.28 – 6.23)
Being employed (employed/non-employed)	0.569	2.74 (- 6.80 – 12.29)	0.715	- 1.33 (- 8.58 – 5.91)
Marital status (married / other)	0.083	- 5.77 (- 12.31 – 0.77)	0.499	- 2.33 (- 9.15 – 4.49)
Duration of the disease (3> / 3≤)	0.420	1.98 (-2.89 – 6.86)	0.689	1.05 (-4.17 – 6.28)

*** B: Regression Slope, CI = Confidence Interval**

Discussion

The results of this research show that there is a significant relationship between psychological well-being and emotional intelligence. Our results were consistent with the study of John Prem Rabindranath on patients with head and neck cancer, suggesting that there is a significant relationship between emotional intelligence and psychological well-being (26). In explaining the relationship between emotional intelligence and psychological well-being, it can be said that people with high emotional intelligence are more likely to have better mental capabilities in understanding the situations and responding to tensions and pressures of the internal and external (and sometimes unwanted) environment (27). These people also have the ability to manage their feelings and emotions when faced with problems, and so they take measures against the problems of daily life and the psychological problems and pressures, leading to increased successes, satisfaction and optimism, and thus increased happiness and well-being (28). High emotional intelligence can improve the general quality of life and personal and social success of an individual and is an important factor in determining the successes of life and psychological well-being (29). It seems that people with higher emotional intelligence and more awareness of their emotions can cope with cancer and its negative emotional consequences such as fear, anxiety with proper emotional management, and adapt themselves to their situation. People with high emotional intelligence are more capable of controlling stressors and managing mental pressure (8). In addition, the relationship between psychological well-

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being and dimensions of emotional intelligence showed that social awareness had the highest correlation, while self-management had the lowest correlation with emotional intelligence.

Then, individual development of psychological well-being sub-components had the most relationship with emotional intelligence. The results of this study showed that there is no significant relationship between psychological well-being and its dimensions with demographic variables (age, marital status, occupational status, and years of illness).

These results seem to be due to the small sample size. Psychological well-being only had a significant relationship with education, which may be due to the fact that people with higher education have more positive relationship with others and have a more targeted community and life. In general, the results of the studies are different in this regard. No research was found to be dedicated to the relationship between demographic information and psychological well-being. Therefore, the results of the similar studies were used. Vashmehsara Ebadi et al. did not find significant differences between married and single men and women with cancer in terms of emotional intelligence (31). Consistent with the results of previous studies, Ghaderi et al. concluded that the correlation between mental health and marital status was not significant (32). Therefore, although there was no significant relationship between demographic variables and mental health of cancer patients in most researches, yet there has been relationships in some studies.

Apart from probabilities such as the effect of cultural and religious factors, the number of samples and the method of sampling, and many other influential factors on this issue, it seems that there is a need for more transparency in this regard. This research was faced with some limitations. Relying on the results of self-reported data that allows patients to distort reality, not using medical records of patients and not entering important information such as the severity of the disease, the small sample size, and the lack of a comparison group are the research weaknesses. Therefore, it is recommended that similar studies be carried out in women and men with cancer and other diseases in different regions of Iran with bigger sample size and with pathological variables in order to maximize the possibility of generalization of the results. Furthermore, given the prevalence of psychological disorders in chronic patients, especially cancer, the importance of strengthening the resources of psychological well-being, including family and community support, seems necessary in women with cancer. Considering the results of this research regarding the existence of a positive relationship between emotional intelligence and psychological well-being and other researches on the effect of education on increased emotional intelligence (33), curriculums for teaching the techniques of using emotional intelligence with psychological well-being should be considered as workshops for women with breast cancer. Regarding the high prevalence of psychological disorders in chronic patients, especially cancer, the importance of strengthening the resources of psychological well-being, including family and community support, seems necessary in women with cancer.

In addition, these findings suggest cancer treatment and support centers to promote the emotional intelligence of women with breast cancer, especially in the areas of social awareness and relationship management, to improve the psychological well-being of women with breast cancer, especially their individual growth.

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