

## Hardiness and Optimism in Women with Breast Cancer

### Abstract

**Background:** Hardiness and optimism are two general health promoting factors, which enable the individuals to remain both psychologically and physically healthy despite encountering negative life events. But there is lack of knowledge about the current state of these constructs and their relationship in breast cancer patients in an Iranian context. **Materials and Methods:** This was a descriptive study which was completed in Sayyed-AL-Shohda Hospital affiliated to Isfahan University of Medical Sciences, Iran, in 2015. Two hundred and ten women with breast cancer were conveniently selected to complete the personal/demographic/illness questionnaire, Hardiness Scale, and Life Orientation Test. Data were analyzed by *t*-test, analysis of variance, and Pearson correlation with a significance level of  $p < 0.05$ . **Results:** The mean (SD) age and duration of illness were 46.73 (10.12) years and 29.48 (19.70) months, respectively. Most patients were married (86.23%), without university education (92.61%) and unemployed (85.69%). Most patients received chemotherapy as their main treatment (39.43%). Also, 61.42 and 58.10% of patients had high hardiness and optimism, respectively. There was a significant positive correlation between the score of hardiness and optimism ( $r = 0.22$ ,  $p \leq 0.01$ ). **Conclusions:** The results showed that most of the breast cancer patients had moderate to high hardiness and optimism, so healthcare providers can use these personality properties in their care planning to improve coping strategies. Also, the findings of this study can assist healthcare team in order to pay more attention to coping strategies in cancer patients during their treatment and also considering the relationship of these issues in their evaluations.

**Keywords:** Breast cancer, hardiness, nursing, optimism

### Introduction

Breast cancer is an international health problem all around the world.<sup>[1,2]</sup> In Asian countries such as Iran, the incidence of breast cancer is increasing.<sup>[3]</sup> The rate of deaths caused by breast cancer has also an increasing trend in Iran.<sup>[4]</sup> It is the second most common cause of cancer-induced mortalities in Iranian women.<sup>[5]</sup> The diagnosis of breast cancer is a significant stressor that is associated with worsened quality of life. Patients are challenged to cope as best as they can in the face of a difficult situation.<sup>[6]</sup> It puts the patient and their family under a lot of pressure. People's response to stress seems to be different, but it includes a series of psychological, emotional, and behavioral reactions. Some of these responses are understood to be involuntary reactions due to stress, while other responses are voluntary and conscious effort for overcoming stress.<sup>[7]</sup>

In the meantime, a series of moderating resources have been identified as sources

of stress resistance, which reduce the negative effects of stress on the body.<sup>[7]</sup> Characteristics such as high self-esteem, sense of control over the situation, cognitive style, the ability of problem-solving, optimism, good social support, financial resources, type of attachment style, and the level of hardiness are considered as resources of coping with stress, all of which are summarized in the form of personality. In other words, personality is considered as a major factor in the relationship between stress and health. So the way of evaluation of stressful life situations and coping mechanisms used by these people depend on their personality characteristics. Among these, important personality characteristics such as hardiness and optimism can effectively deal with stress and prevent disease.<sup>[8,9]</sup> Hardiness is defined as a combination of beliefs about self and the world, which comprises three components of commitment, control, and militancy.<sup>[10]</sup> The concept of hardiness must not be summarized only in special forces

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for withstanding a lot of stress. This structure moves the person forward and helps him in difficult conditions in order to more successfully pass the threatening events. So, hardiness is the capability of understanding the surrounding situations and the ability of decision-making favorable about oneself.<sup>[11]</sup>

The findings also showed that hardiness acts as a shield against stress in different situations of life so that those with high hardiness mostly use problem-focused coping strategies in stressful situations, while people with low hardiness use emotion-focused coping strategies.<sup>[12]</sup> The coping strategies of people with high hardiness in such situations might be more efficient and support them against stress in different life situations. For example, those with low hardiness will be affected by coronary heart disease, cholesterol, blood pressure, and cancer in the long run, whereas those with high psychological hardiness are immune from the negative effects of stress.<sup>[8,12]</sup> In this regard, Jafari and Hesampoor<sup>[13]</sup> showed that people with low hardiness, compared with high hardiness, mostly use maladaptive coping methods such as drinking, and mental imbalance. On the contrary, people with high hardiness tend to use adaptive emotional methods such as positive focus and optimism. In addition, Mahdian and Ghaffari<sup>[14]</sup> conducted a study on patients with cancer and showed that the psychological hardiness is directly associated with perceived social support and hope.

Another personality factor affecting coping with failures is having a positive attitude toward events or the optimism with positive mood and good ethics. According to many researchers, pessimism versus optimism can be associated with adverse behavioral and psychological consequences and lead to severe psychological distress.<sup>[15]</sup> In fact, having positive attitude to events or optimism with positive mood and good morals can also be useful and important in stress management. Therefore, we can say that optimists are more successful in solving problems in life; they are not passive against problems such as developing certain diseases, including cancer, and they are more positive compared to others.<sup>[8,14]</sup> In this regard, Norman and Brain study (2007)<sup>[16]</sup> on 655 patients with breast cancer showed that optimism has been a strong predictive index for the reduction of stress and anxiety immediately after hearing the news of cancer and during the 9-month follow-up period. There are also few studies in the field of optimism and hardiness in breast cancer patients in an Iranian society. However, some qualitative studies in this field suggest that breast cancer may gradually lead to promotion of internal forces and effective compliance with the stress caused by disease and its consequences in patients.<sup>[12]</sup> Because breast cancer patients endure many psychological changes and they are more influenced by the various stresses of life in this period, this period is very important psychologically. Therefore, to deal with stress, particularly the stresses related to disease and treatment, personality and environmental factors can be

very affective. It is required to better know the personality characteristics of individuals and the environment surrounding in order to promote their overall health.<sup>[17]</sup>

Considering the moderating role of the above personality characteristics in the stress of cancer patients, examining the relationship between hardiness and optimism will have a significant impact on the prevention, and provision of mental and physical health in this group of patients. Moreover, few studies have been conducted in the field of hardiness, optimism in cancer patients and to identify as well as the type and intensity of the relationship between the two variables. Therefore, the present study aims to detect the levels of hardiness and optimism and also address the relationship between these two variables among patients with breast cancer within an Iranian society.

## Materials and Methods

This research was a cross-sectional correlation study performed on 210 patients with cancer in 2015. Convenience sampling was performed on the patients with cancer admitted to Sayed-Al-Shohada Hospital affiliated to Isfahan University of Medical Sciences and Clinic of Imam Reza (AS). Sample size was calculated according to other similar studies<sup>[18]</sup> using power analysis considering ( $r = 0.27$ ),  $z_1 = 1.96$  and  $z_2 = 0.84$ .

The researcher initially selected the eligible individuals based on the inclusion criteria. Inclusion criteria were: age between 18 and 65 years, having the ability to read and write in Persian, having mental and physical ability to participate in the study, passing at least 6 months from the date of cancer diagnosis, being at stage 1, 2, and 3 breast cancer, not being at the final stage of life, being aware of their cancer diagnosis, and not having other medical illnesses.

The tools used in this study consisted of three parts: (1) Demographic and disease characteristics questionnaire consisted of eight items: age, marital status, family income, occupation, type of treatment (including chemotherapy, surgery, and radiotherapy) and duration of illness; (2) Abridged Hardiness Scale with 20 items to assess the degree of hardiness in people. The tool includes three subscales of commitment, control, and challenge. Each question has been marked out from one to four (1 = never and 4 = very often). Higher scores represented more hardiness. Mean scores were calculated in general and also, separately for each of subscales. The scores above and below average are considered as having high and low hardiness, respectively; (3) The Life Orientation Test (LOT) questionnaire to measure optimism which consists of 10 items and has a five-point Likert scale ranging from 0 to 4. The scoring range is from zero to 24. Higher scores indicate higher optimism. It is worth noting that scores higher and lower than average are considered as high and low optimism, respectively.

Validity of hardiness scale has been approved by Kobasa.<sup>[10]</sup> Also, its reliability was approved by using Cronbach alpha coefficient 0.80 in the study of Aminpoor and Naghadeh<sup>[19]</sup> in Iran. The validity of LOT was confirmed by Shelby *et al.*<sup>[20]</sup> on patients with breast cancer. Its reliability was also confirmed by the test-retest ( $r = 0.79$ ). Data were analyzed using Statistical Package for the Social Sciences version 13 software (SPSS Inc., Chicago, IL, USA). Descriptive statistics and inferential statistics (independent samples *t*-test, analysis of variance, and Pearson correlation of coefficient) were used.  $p$  value  $\leq 0.05$  was considered as statistical significance level.

### Ethical considerations

The study protocol and its ethical considerations were approved by the Cancer Prevention Research Center affiliated to the Isfahan University of Medical Sciences. Permission was obtained from the hospital authorities and the purpose of the study was explained to all participants and they all signed the written informed consents before participation. They were also assured of the data confidentiality and all the questionnaires were kept anonymous.

### Results

The results showed that the mean (SD) age of the patients was 46.73 (10.12) years. The time that has passed since the initiation of the disease has been 29.48 (19.70) months and the time of the last treatment was 16.51 (4.40) months. The highest percentage of patients was associated to marriage (86.23%), without university education (92.61%) and unemployed (85.69%). Also, the highest percentage of patients was receiving chemotherapy and a combination of treatments (including chemotherapy, radiotherapy, and surgery) (39.43 and 26.6%, respectively) as their main treatment.

In this research, patients' mean (SD) hardiness score and mean optimism score were 50.7 (16.06) and 15.8 (8.81), respectively. Also, the results showed that 61.42% of patients had high hardiness and 58.10% had high optimism [Table 1]. Also, the results of the frequency distribution of research units' items of hardiness and optimism in patients with cancer are given in Tables 2 and 3.

In addition, the results of Pearson correlation showed that there is a significant positive relationship between the overall score of hardiness and each dimension separately with optimism ( $r = 0.22$ ,  $p = 0.01$ ) [Table 4]. The findings indicate that there are no significant correlations or differences between age, marital status, family income, kind of treatment, and duration of illness with hardiness and optimism, respectively ( $p \geq 0.05$ ).

### Discussion

The present study is one of the few studies which examines the status of hardiness in Iranian women with breast cancer and investigates its relationship with optimism. In this

**Table 1: Status of hardiness and optimism in patients with cancer**

Variables	Number (%)
Hardiness	
Low hardiness	81 (38.58%)
High hardiness	129 (61.42%)
Optimism	
Low optimism	88 (41.90%)
High optimism	122 (58.10%)

study, the majority of patients had high hardiness (61.42%).

Also, most of the participants responded negatively to items such as being worried about the little things and the minor issues (64%), blaming yourself for making any mistakes (57.10%), having the feeling of insecurity (53.70%), and failure to fulfill wishes (51.30%). Therefore, harder people perceive adverse situations as challenging not threatening and have a greater sense of commitment to their works and have a sense of control in their lives. Moreover, most of the patients did not believe in "Life is easier for people (70.40%)" or "They have more problems than others (51.80%)." So it is likely that women with cancer are more committed to improve the quality of their lives with great hardiness, they respond better to unpredictable symptoms of the disease or even to their treatments, and have more control over their lives. They also have greater ability to adapt to subsequent changes of the disease.<sup>[21]</sup> It is the responsibility of nurses to identify people with low hardiness, and prevent physical and mental adverse consequences by interventions at the primary level, and promote the development of hardiness in these subjects.<sup>[13]</sup>

In this study, 58.10% of research units had high level of optimism. Positive views toward events can be accompanied with positive consequences; furthermore, positive views of optimists about the future would make them cope more easily and effectively with the stressors. In other words, people who expect positive results will also get positive results. The results of this study also suggest that 34.19% of patients with cancer expressed that they expect good things happen to them more than bad things. In addition, 50.70% of patients have expected the best scenarios and results happened to them in uncertain times. In this regard, Shelby *et al.* (2008) in a study on the patients with cancer suggest that patients with positive view or with optimistic personality mostly use active coping methods at different stages of life, while people with negative attitude tend to report more avoidant behaviors such as surrendering, substance abuse, and denial of their positions.<sup>[20]</sup>

The results of Pearson correlation coefficient showed a positive correlation between the hardiness and optimism. In other words, with an increase in hardiness score in general and in each of its dimensions, the optimism score will also increase. These results were consistent with the study results of Mohamadirizi *et al.* (2017)<sup>[22]</sup> in Iran, which

**Table 2: Frequency distribution of research units according to the status of hardiness in patients with cancer**

Items	Number (%)			
	Never	Rarely	Sometimes	Very often
<b>Hardiness</b>				
<b>Commitment</b>				
Worry about the small stuff	95 (43.29)	42 (20.71)	27 (13.33)	46 (22.67)
Sleep disturbance due to preoccupation	90 (40.89)	57 (28.11)	24 (11.78)	39 (19.22)
Feeling of insecurity	77 (36.30)	36 (17.40)	32 (15.81)	65 (30.49)
Fear of not being loved by others	108 (49.82)	25 (12.28)	28 (13.80)	49 (24.10)
No easy living conditions of the family	114 (52.70)	36 (17.69)	25 (12.41)	35 (17.20)
Blaming himself for every mistake	85 (38.41)	38 (18.69)	28 (13.81)	59 (29.09)
Difficulty in expressing feelings	74 (33.01)	32 (15.79)	47 (23.21)	58 (28.09)
Having more difficulty than others in life	79 (35.53)	33 (16.27)	39 (19.20)	59 (29.10)
Fear of not getting the dream	71 (34.62)	34 (16.68)	45 (18.68)	60 (30.02)
<b>Control</b>				
Worry about making mistakes in carrying out the work	71 (31.00)	43 (22.90)	42 (20.39)	54 (26.01)
Worry about the unfinished work	70 (31.00)	33 (16.32)	33 (16.28)	74 (36.49)
Concerned about the lack of accuracy in performing tasks	78 (39.59)	52 (24.71)	30 (12.30)	50 (24.60)
Fear of stupid behavior in my work	97 (47.77)	34 (13.60)	34 (16.60)	45 (22.21)
Concerned about the poor living conditions	65 (28.60)	24 (11.79)	45 (22.20)	76 (37.41)
Concerned about reaching the right positions at work	51 (25.10)	29 (13.59)	38 (15.70)	92 (45.61)
Uncertainty about the purpose of life	85 (37.91)	32 (15.88)	30 (14.72)	64 (31.49)
<b>Challenge</b>				
Concerned because of problems	56 (24.11)	23 (11.29)	25 (12.32)	106 (52.18)
Concerned about the lack of suitable entertainment	67 (33.00)	40 (16.00)	27 (10.28)	81 (39.92)
Worry not to meet requirements	54 (26.58)	17 (8.400)	29 (14.33)	103 (50.70)
Concerned about the lack of suitable future career	84 (40.38)	27 (14.10)	23 (11.30)	72 (35.52)

**Table 3: Frequency distribution of research units according to the status of optimism in patients with cancer**

Items	Number (%)				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
<b>Optimism</b>					
In uncertain times, I usually expect the best	57 (26.60)	53 (24.10)	34 (16.71)	33 (16.30)	33 (16.30)
It's easy for me to relax	32 (15.78)	30 (14.80)	36 (17.68)	66 (29.11)	44 (22.63)
If something can go wrong for me, it will	63 (30.63)	64 (31.47)	36 (19.75)	26 (9.80)	21 (10.40)
I'm always optimistic about my future	77 (37.90)	79 (38.91)	32 (12.29)	9 (4.38)	12 (6.52)
I enjoy my friends a lot	87 (39.40)	76 (38.90)	16 (7.89)	11 (6.40)	17 (8.41)
It's important for me to keep busy	59 (25.11)	35 (17.72)	25 (12.28)	40 (19.71)	51 (25.08)
I hardly ever expect things to go my way	57 (24.60)	53 (26.07)	34 (16.73)	33 (16.30)	33 (16.30)
I don't get upset too easily	32 (15.81)	30 (14.76)	36 (17.72)	66 (29.11)	44 (22.69)
I rarely count on good things happening to me	40 (19.71)	48 (23.60)	45 (22.4)	47 (22.40)	30 (11.79)
Overall, I expect more good things to happen to me than bad	69 (34.00)	64 (28.49)	23 (11.28)	30 (14.33)	24 (11.81)

**Table 4: The relationship between score of hardiness in general and each of the dimensions with the score of optimism in patients with cancer**

Variables	r value	p value
Control and optimism	0.14	0.01
Commitment and optimism	0.33	0.05
Challenges and optimism	0.22	0.07
Total score of hardiness and optimism	0.22	0.01

showed there was a significant positive correlation between hardiness and its subgroups, including commitment, controlling, and challenge with optimism.

These results may indicate that people with a high level of optimism will feel more commitment in their lives and daily activities because they look at the events with higher feeling of control and challenging attitude and consider them as a chance in life. In contrast, people with a low level of optimism are passive against failures

or life-threatening conditions and try to escape from the situation, or even they will lose their feeling of control in some cases. In addition, people with a high level of optimism consider stressful situations as a challenge to overcome stress, not to avoid or escape from it, and try to increase commitment and control emotions to overcome the challenge successfully.<sup>[15]</sup>

Also the characteristic of hardiness may act as a filter to stressors and maintain positive experiences for the optimists; therefore, the obvious benefits of this event is that they can confront stressors and use health-protecting behaviors. This process is very clever, purposeful, and deliberate.<sup>[18]</sup> In this regard, Bigalke study results showed that hardiness has a significant positive correlation with self-esteem, sense of coherence, self-efficacy as well as optimism in parents of children with cancer.<sup>[23]</sup> Also, in the study conducted by Wilkinson and Kitzinger (2000),<sup>[24]</sup> positive thinking had a significant impact on physical and mental health of women with breast cancer so that a significant decrease in mortality was observed in patients who had received positive thinking training.

Results of this study should be considered along with its limitations. First, the cross-sectional design of the study has made our ability to assign causality impossible. In addition, we could not determine the state of the two personality characteristics of hardiness and optimism before being affected by cancer as well as comparison to the status quo due to administrative problems.

## Conclusion

According to the results of this study, healthcare team will be able to have better and more comprehensive understanding of personality characteristics of cancer patients, because hardiness indicators including commitment, control, and challenge as well as optimism may affect the individual's response to treatment plan or nursing care. So, it is possible to increase cancer patients' hardiness through interventional procedures such as consultation.

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## Conflicts of interest

Nothing to declare.

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