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ORIGINAL ARTICLE

Psychological Distress of Breast Cancer Survivors During the COVID-19 Pandemic and Related Factors: A Controlled Study

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OBJECTIVE

Although the prevalence of breast cancer is high among women, survival rates are increasing. However, breast cancer survivors (BCS) continue to experience various psychological problems after their treatments and are also exposed to additional stressors, such as the current Coronavirus disease 2019 (COVID-19) pandemic. The aim of this study was to examine the psychological distress and related factors (social support, intolerance of uncertainty, coping strategies) of BCS during the COVID-19 pandemic and the role of breast cancer diagnosis in this process.

METHODS

This study included 95 BCS and 87 healthy women. Sociodemographic Information Form and depression anxiety stress scale, social support scale, intolerance of uncertainty scale, and coping strategies short form scales were administered to the participants. T tests and regression analyses were performed to examine the relationships between the variables.

RESULTS

There was no significant difference between the two groups in terms of depression and anxiety, but the stress of BCS was lower than that of healthy women. In the regression analysis, the diagnosis of breast cancer was not a predictor for depression and anxiety, but it was a significant predictor for stress. Common predictors of increased depression, anxiety, and stress were decreased social support, increased uncertainty intolerance, and increased emotion-focused coping.

CONCLUSION

Focusing on the development of intolerance of uncertainty, social support, and problem-focused coping strategies of psychological interventions for women BCS during epidemics such as COVID-19 may reduce their psychological distress while maintaining and increasing their psychological well-being.

Keywords: Breast cancer survivors; coping strategies; coronavirus disease 2019; intolerance of uncertainty; psychological distress; social support.

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INTRODUCTION

Breast cancer is one of the most common cancer types among women and is the leading cause of cancer deaths in women.[1] The World Health Organization (WHO) reported that 685,000 women died due to breast cancer, and 2.3 million women were diagnosed with new breast cancer in 2020.[2] Today, however, with the development of conditions, mortality rates are decreasing, and survival rates are increasing due to diagnosis and treatment in the early stages.[3] Women who have completed cancer treatment and recovered continue to be cancer survivors with a diagnosis of breast cancer for the rest of their lives.[4] Breast cancer survivors (BCS) are uncertain about their future and worry about the recurrence of their disease.[5] Therefore, the most common psychological problems in survivors after treatment are depression, anxiety, and posttraumatic stress disorder (PTSD).[6,7] In addition, as today, BCS may be exposed to an extra stressor such as the Coronavirus disease 2019 (COVID-19) pandemic.

In December 2019, cases of pneumonia of unknown origin were reported in Wuhan, China, and a new type of coronavirus, 2019-nCoV (COVID-19), was identified in these cases.[8] Due to the rapid spread of the virus, it was declared an epidemic by the WHO on January 5, 2020.[9] Due to the spread of the epidemic to 114 countries, the detection of over 118 thousand cases and the death of 4,291 people, a pandemic was declared on March 11, 2020.[10] The clinical symptoms of the COVID-19 virus are a febrile respiratory disease and have serious effects that can lead to death when symptoms become severe.[8–11]

The COVID-19 virus is very stressful, as it threatens human life due to its rapid spread and increasing deaths.[12] It suppresses the immune system due to the treatment of cancer patients who continue their active treatment during the pandemic. They are among the vulnerable groups because they are at higher risk of being infected and showing more severe symptoms and even death when infected.[13] The virus is also a source of intense stress and anxiety for patients due to both the increasing death rates in cancer patients and the restrictive measures implemented to reduce transmission.[14] However, the difference between healthy and survivors' psychological distress from the physical effects of the virus is unknown because research is limited. In a study comparing 150 cancer patients and 150 healthy individuals, no significant difference was found between the groups regarding the fear of COVID-19, anxiety and stress levels. However, cancer patients performed more COVID-19-related safety behaviors, such as hand washing and avoiding public environments, than the healthy group.[15] In addition, the decisions of some states to delay nonemergency health services in health systems to reduce the risk of infection make it difficult for cancer survivors to continue their routine check-ups, or although there is no disruption in the health system, it is known that they postpone their appointments because they are afraid of being infected.[16–18] Disruption of routine controls causes the progression of a possible relapse, increasing the anxiety levels of individuals even if there is no recurrence.[19] In another study conducted with 1016 cancer survivors, half of the participants who reported fear of recurrence could not access the health care they needed.[18]

In addition, individuals worry about their own health and the health of their loved ones;[20] the restrictive decisions made lead to a more isolated life, restriction of social support resources and sudden life changes that would cause economic difficulties;[20,21] there is no definite treatment method for COVID-19 yet,[11] the virus continues to spread with various variations[22] and it contains uncertainties about when the process will end,[23] are the stressors related to social support and intolerance to the uncertainty that causes psychological distress. Depression, anxiety and stress are among the most common psychological problems in studies.[23,24–26] Additionally, being diagnosed with COVID-19 and having an infected relative increase the level of depression and anxiety.[25,27]

Although a high level of social support protects against psychological distress,[28] a high level of intolerance of uncertainty, as one of the cognitive evaluation processes, has a role in increasing psychological distress.[29] In addition, coping strategies are also important in the face of stressful events. When individuals perceive a stressful situation as manageable, the strategies they use are problem-oriented; the strategies they use when they perceive the stressful situation as threatening and cannot be changed are defined as emotion-focused coping strategies.[30] This study aims to examine the depression, anxiety and stress levels of women who survived breast cancer in the COVID-19 pandemic and the factors intolerance to uncertainty, social support, and coping strategies that may be associated with depression, anxiety and stress levels and to examine the role of BCS during the COVID-19 pandemic.

MATERIALS AND METHODS

Study Population

The study group of this study consisted of 95 women BCS aged between 26 and 74 (mean=49.86), diagnosed between 1997 and 2018 (mean=2013.84), living with the diagnosis of cancer for 2–23 (mean=6.16) years, who completed active cancer treatments before the COVID-19 pandemic period and whose routine controls continued at Istanbul University Oncology Institute. The control group consisted of 87 healthy control women (HCs) aged 26–69 years (mean=47.60) who were selected by a convenience sampling method to be equivalent to the study group in terms of age and economic status. Being younger than 18 years old, not being literate, having a mental or cognitive disorder and having a diagnosis of psychosis were the exclusion criteria of this study.

Scales

Information Form Related to Sociodemographic, Breast Cancer and COVID-19 Pandemic Process

This form was prepared by the researchers and included three parts. In the first part, there were questions describing the sociodemographic characteristics of the participants, such as age, education level and monthly income. In the second part, there was information that determined the year the study group was diagnosed with breast cancer. In the third part, there were questions that included the descriptive information of the participants about the COVID-19 process, and in addition, the study group's access to health services during the COVID-19 period and the questions in which they scored their disease concerns compared to the past (Table 1).

Depression Anxiety Stress Scale (DAS-21)

It was developed to measure the level of negative psychological states of individuals in the last week, including depression, anxiety and stress. It consists of 21 items in total and is in 4-point Likert type as "Never (0)" and "Always (3)".[31] The Turkish version of the DAS-21 was adapted by Bilgel and Bayram.[32] The Cronbach's alpha internal consistency coefficient was found to be 0.92 for the depression dimension, 0.86 for the anxiety dimension and 0.88 for the stress dimension. In this study, the Cronbach's alpha reliability values of the scale were calculated as.88 for depression, 0.76 for anxiety and 0.86 for stress.

Social Support Scale (SSS)

Torun used the SSS developed by Krespi (1993)[33] to measure the level of social support of individuals.[34] It consists of 19 items in total and is scored on a 5-point Likert scale ranging from "Never (0)" to "Always (4)." As the scores obtained from the scale increase, the level of social support also increases. The Cronbach's alpha internal consistency coefficient of the total score of the scale was calculated as 0.92. The item loads of the 3 subdimensions vary between 0.44 and 0.76 for the informational and material support subdimension, between 0.52 and 0.76 for the emotional support subdimension, and between 0.56 and 0.68 for the togetherness support subdimension. Dimensions explain 57.1% of the total variance. In this study, the total score of the scale was used, and the Cronbach alpha reliability value was calculated as 0.96.

Intolerance of Uncertainty Scale (IUS-12)

Based on the 27-item Uncertainty Intolerance Scale developed by Freeston et al. (1994)[35] to measure individuals' cognitive, emotional, and behavioral responses to uncertain situations, a short 12-item form of the IUS-12 was developed by Carleton et al. (2007).[36] The scale, which consists of 2 subdimensions, anxiety for the future and inhibitory anxiety, is a 5-point Likert-type scale of "Not suitable for me (1)" and "Completely suitable for me (5)." The higher the scores, the higher the level of intolerance to uncertainty. The Turkish version of the IUS-12 was adapted by Sarıçam et al.[37] Cronbach's alpha reliability coefficient of the total score of the scale was determined to be.88. It was determined as.84 for the anxiety for the future subdimension and.77 for the inhibitory anxiety subdimension. In this study, the total score of the scale was used, and the Cronbach alpha reliability value was calculated as 0.92.

Coping Strategies Scale Short Form

It was developed to measure the coping strategies individuals use in the face of stressful events. It consists of a total of 28 items and is answered on a 4-point Likert scale ranging from "I never do this (1) to "I do this a lot (4)."[38] The scale has 14 subdimensions, but there are also studies in the literature in which this scale is used for problem-focused coping and emotion-focused coping.[39] The Turkish adaptation of the scale was made by Tuna, and Cronbach's alpha internal consistency coefficient was calculated to be between.33 and.91 for all dimensions.[40] In this study, the scale was used in a 2-factor structure, and the Cronbach alpha reliability coefficient was calculated as 0.84 for problem-focused coping and 0.73 for emotion-focused coping.

Process

After obtaining the necessary approval from the Ministry of Health to be able to work on the COVID-19

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Table 1 Information on the sociodemographic characteristics, the diagnosis of breast cancer and the COVID-19 pandemic process of the participants

	BCS (n=95)		HC (n=87)		p
	n	%	n	%	
Sociodemographic characteristics					
Age (mean±SD)	49.86±9.31		47.60±10.04		0.12
Education level					
Literate	4	4.2	–	–	
Primary school	32	33.7	11	12.6	
Middle school	12	12.6	13	14.9	
High school	24	25.3	23	26.4	
University	20	21.1	35	40.2	
Graduate	3	3.2	5	5.7	
Economical situation (mean±SD)	(n=93) 3805.91±2423.94		4324.71±1800.92		0.11
Information about the disease					
Year of breast cancer diagnosis (mean±SD)	6.16±5.16		–		
Information on the Covdi-19 pandemic process					
COVID-19 diagnosis					
Yes	12	12.6	20	23.0	
No	83	87.4	67	77.0	
COVID-19 diagnosis in loved one					
Yes	63	66.3	76	87.4	
No	32	33.7	11	12.6	
Death of loved one due to COVID-19					
Yes	31	32.6	43	49.4	
No	64	67.4	44	50.6	
COVID-19 vaccine					
Yes	62	65.3	66	75.9	
No	33	34.7	21	24.1	
Access to health services during COVID-19 process					
Yes	74	77.9	–	–	
No	21	22.1	–	–	
Anxiety level of being sick easier in the COVID-19 process (0–10) (mean±SD)	4.42±2.80		–		

BCS: Breast cancer survivors; HC: Healthy control; SD: Standard deviation

pandemic due to the pandemic process, approval was obtained from the FMV Işık University Ethics Committee (December 17, 2020/9305). Study data were collected between March 2021 and August 2021. The data were collected from women diagnosed with breast cancer who came to the IU Institute of Oncology Breast Polyclinic for a control appointment after obtaining the necessary permission for BCS, and the snowball method was used to match the sample group in terms of age and economic status for HC. After the necessary explanation was given to the participants, they were first asked to sign the "Informed Consent Form" stating that they voluntarily accepted the study. Afterward, the scales were given, and it took the participants approximately 20–30 min to complete the scales.

RESULTS

Descriptive Statistics

A total of 33.7% of women in BCS were primary school graduates, and their average monthly income was 3805.91. Of the women in this group, 12.6% were diagnosed with COVID-19, 66.3% had a COVID-19 diagnosis in a loved one, 32.6% had a loved one who died due to COVID-19, 65.3% were vaccinated against COVID-19, and 77.9% provided access to health services during the

Table 2 Information of participants on scale scores

Dependent variables	Groups	Mean	SD	Interval	T	p
Depression	BCS	4.82	4.01	0–19	−1.51	0.13
	HC	5.67	3.48	0–13		
Anxiety	BCS	3.83	3.10	0–12	−0.90	0.37
	HC	4.23	2.88	0–10		
Stress	BCS	6.00	3.77	0–16	−4.87	0.00***
	HC	8.85	4.12	0–17		
Independent variables						
Social support	BCS	50.86	16.94	9–76	0.00	1.00
	HC	50.86	15.50	7–76		
Intolerance of uncertainty	BCS	37.30	11.01	14–60	0.47	0.64
	HC	36.52	11.56	15–59		
Problem-focused coping	BCS	47.54	8.56	19–62	2.18	0.03*
	HC	44.96	7.23	26–57		
Emotion-focused coping	BCS	27.34	5.18	16–43	−3.86	0.00***
	HC	30.57	6.03	19–43		

*: p<0.5; ***: p<0.001. SD: Standard deviation; BCS: Breast cancer survivors; HC: Healthy control

pandemic process. In this process, the anxiety scores that they get sick more easily were 4.42 on average.

On the other hand, 40.2% of women in the HC group were university graduates, and their average monthly income was 4324.71. Of the women in this group, 23% were diagnosed with COVID-19, 87.4% had a COVID-19 diagnosis in a loved one, 49.4% had a loved one who died due to COVID-19, and 75.9% were vaccinated against COVID-19 (Table 1).

Differences of the Groups According to the Variables

Independent groups t-test analyses were conducted to determine the differences between dependent (depression, anxiety, stress) and independent (social support, intolerance to uncertainty, coping strategies) variables of the study according to BCS and HC.

When the psychological distress (depression, anxiety, stress) levels of women in BCS and HC were examined, there was no significant difference between the depression ($t=-1.51$, $p>0.05$) and anxiety ($t=-0.90$, $p>0.05$) scores of the two groups. However, it was observed that the stress scores of the women in the BCS group were significantly lower than those of the women in the HC group ($t=-4.87$, $p<0.001$).

When the differences in the independent variables according to the groups were evaluated, the problem-focused coping of the women in BCS was significantly higher ($t=2.18$, $p<0.05$), and the emotion-focused coping was significantly lower ($t=-3.86$, $p<0.001$) than the women in the HC (Table 2).

Regression Analyses

First, the variables of breast cancer diagnosis, COVID-19 diagnosis, a loved one's COVID-19 diagnosis and a loved one's death due to COVID-19 were coded as dummy variables (0=None, 1=Present). Then, breast cancer diagnosis and sociodemographic variables in the first step, social support in the second step, COVID-19-related factors in the third step, and intolerance of uncertainty and coping strategies in the final step were included in the analysis. Thus, in line with the purpose of the study, a 4-stage hierarchical regression analysis was conducted to determine the variables predicting psychological distress (depression, anxiety, stress). In regression analyses including all variables, the results showed that being diagnosed with breast cancer was not a predictor for depression and anxiety but was a predictor for stress (Table 3).

When the predictors of depression were analysed, a total of 4 steps explained 36% of the variance ($F=8.510$, $p<0.001$). In the final stage of the regression analysis, social support negatively predicted and intolerance of uncertainty and emotion-focused coping positively predicted the level of depression.

When the predictors of anxiety were examined, all variables explained 30% of the variance ($F=6.609$, $p<0.001$). In the last stage of the regression analysis, social support and problem-focused coping were negatively predicted, and intolerance of uncertainty and emotion-focused coping strategies positively predicted the level of anxiety.

When the predictors of stress were examined, all variables explained 49% of the variance ($F=14.370$, $p<0.001$).

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Table 3 Predictors of psychological distress (depression, anxiety and stress)

Variables	Depression		Anxiety		Stress	
	β	t	β	t	β	t
Step 1						
Breast cancer diagnosis	−0.10	−1.34	−0.07	−0.90	−0.34	−4.88***
Age	−0.22	−2.78**	−0.16	−1.99*	−0.31	−4.27***
Education level	0.00	0.03	−0.06	−0.65	−0.08	−1.00
Monthly income	−0.14	−1.74	−0.04	−0.57	−0.12	−1.75
R^2	0.07		0.03		0.21	
ΔR^2	0.07		0.03		0.21	
ΔF	3.17*		1.24		11.51***	
Step 2						
Breast cancer diagnosis	−0.12	−1.79	−0.09	−1.20	−0.36	−5.46***
Age	−0.11	−1.58	−0.07	−0.94	−0.23	−3.31**
Education level	−0.05	−0.64	−0.10	−1.22	−0.12	−1.61
Monthly income	−0.09	−1.21	−0.00	−0.04	−0.09	−1.29
Social support	−0.44	−6.40***	−0.37	−5.10***	−0.34	−5.16***
R^2	0.25		0.15		0.31	
ΔR^2	0.18		0.13		0.11	
ΔF	11.27***		6.32***		15.88***	
Step 3						
Breast cancer diagnosis	−0.11	−1.54	−0.08	−1.10	−0.31	−4.53***
Age	−0.12	−1.54	−0.09	−1.17	−0.22	−3.22**
Education level	−0.05	−0.57	−0.12	−1.40	−0.09	−1.23
Monthly income	−0.09	−1.22	−0.00	−0.04	−0.09	−1.43
Social support	−0.44	−6.27***	−0.37	−5.01***	−0.33	−5.16***
Covid-19 diagnosis	−0.00	−0.01	0.00	0.04	−0.03	−0.46
Covid-19 diagnosis in loved one	0.01	0.14	−0.06	−0.71	0.10	1.28
Death of loved one due to covid-19	0.04	0.57	0.13	1.61	0.16	2.27*
R^2	0.25		0.17		0.36	
ΔR^2	0.00		0.01		0.04	
ΔF	7.00***		4.27***		11.81***	
Step 4						
Breast cancer diagnosis	−0.06	−0.78	−0.00	−0.03	−0.21	−3.25**
Age	−0.05	−0.67	−0.03	−0.38	−0.16	−2.50*
Education level	−0.07	−0.92	−0.15	−1.92	−0.13	−1.87
Monthly income	−0.08	−1.22	−0.00	−0.03	−0.10	−1.63
Social support	−0.32	−4.70***	−0.25	−3.44**	−0.21	−3.39**
Covid-19 diagnosis	−0.03	−0.48	−0.03	−0.46	−0.06	−1.03
Covid-19 diagnosis in loved one	0.04	0.55	−0.03	−0.34	0.14	2.01*
Death of loved one due to Covid-19	0.05	0.74	0.13	1.72	0.15	2.43*
Intolerance of uncertainty	.24	3.30**	0.19	2.55*	0.16	2.47*
Problem-focused coping	−0.13	−1.92	−0.14	−1.99*	−0.19	−3.05**
Emotion focused coping	0.19	2.43*	0.29	3.57***	0.29	4.26***
R^2	0.36		0.30		0.49	
ΔR^2	0.11		0.14		0.13	
ΔF	8.51***		6.61***		14.37***	

*: p<0.5; **: p<0.01; ***: p<0.001.

In the last stage of the regression analysis, breast cancer diagnosis, age, social support and problem-focused coping negatively predicted, and COVID-19 diagnosis in a loved one, the death of a loved one due to COVID-19, intolerance to uncertainty and emotion-focused coping strategies predicted a positive level of stress (Table 3).

DISCUSSION

Women who survive breast cancer continue to experience various psychological problems even after their active treatment has ended. In addition, they may be exposed to extra stressors such as the COVID-19 pandemic. Although the number of women surviving breast cancer is quite high, the number of studies on the psychological problems they experienced during the pandemic is limited. The current study aimed to examine psychological distress and related factors in the COVID-19 process in BCS. The study is important in that it is one of the limited studies conducted in this process, includes various factors, and includes a control group.

Within the scope of this study, first, the effects of breast cancer diagnosis and sociodemographic variables on psychological distress were examined. It was concluded that there was no significant difference between the depression and anxiety levels of both groups according to the diagnosis of breast cancer. Although studies comparing the psychological distress of individuals who survived cancer in the COVID-19 pandemic and the normal population are limited, the results of the studies differ from each other. Cordova et al.[41] compared the depression levels of women with breast cancer diagnosed at least 2 months after cancer treatment and women without cancer diagnosis and found that there was no significant difference in depression levels between the two groups. Ng et al.[42] stated that during the COVID-19 process, women who survived breast cancer had lower levels of depression and anxiety than healthy women. An explanation for the lack of difference in depression and anxiety levels of BCS and HC in this study may be that cancer patients were not in the active treatment period and therefore had similar isolation conditions with the healthy group during the COVID-19 process. Studies have reported that cancer survivors and cancer patients who are in active treatment are affected psychologically at different levels during the COVID-19 pandemic. Islam et al.[43] concluded that cancer patients receiving active treatment experienced higher levels of anxiety, hopelessness, loneliness, and depressive symptoms than those without a cancer diagnosis. However, in another study comparing the depression, anxiety and stress levels of 658 women who were treated for active breast cancer and those who survived breast cancer, it was found that women who were in active treatment had higher levels of depression, anxiety and stress.[44] At this point, cancer patients in the active treatment process need to go to the hospital more frequently,[45] and the physiological results of treatments such as chemotherapy and radiotherapy may have negative effects on their psychology.[46] For this reason, it is thought that the psychological distress levels of those who were treated for active cancer and those who survived cancer during the COVID-19 period differed. Another explanation is the evaluations and comments of cancer survivors about COVID-19. One of the important problems affecting cancer survivors during the COVID-19 period is the restriction of health needs. Because fear of relapse occurs in those who cannot go to their regular check-ups, their psychological distress levels increase.[18,19] In this study, women who survived breast cancer were asked, "Did you have access to the health services you needed during the COVID-19 pandemic?" Most of the women answered "Yes" to the question. Studies have concluded that perceived poor health status during the COVID-19 period is associated with increased anxiety levels.[47] In the current study, the BCS asked, "Are you worried about getting sick more easily during COVID-19?" According to the answer they gave to the question asked, it was seen that their anxiety about getting sick more easily during this period was not high on average. In conclusion, most of the BCSs participating in this study reported that they had easy access to health services during this period and were less worried about getting sick easily. Therefore, it is thought that the depression and anxiety levels of BCSs do not differ from those of HCs. However, BCSs had significantly lower stress levels than HCs, and in the regression analysis, it was found that being diagnosed with breast cancer negatively predicted the stress level. Findings obtained from studies in the literature contradict this finding in the current study. In a meta-analysis study, it was seen that those who had a traumatic event in the past had higher PTS symptoms when they encountered another traumatic event in the future than those who did not have a traumatic experience in the past.[48] According to another study conducted in Italy during the pandemic, it was observed that those who experienced stressful life events had higher levels of depression, anxiety and stress than those who did not experience stressful life events.[25] Stress is the mental tension that occurs when it is thought that the difficulties encountered cannot be addressed.[49] BCS had previously been diagnosed with life-threatening cancer and completed its treatment. Khan et al.[50] stated that cancer survivors see themselves as "warriors" and think that they have won this war. This suggests that they believe that they can cope with a process such as a pandemic more easily than HCs by being effective in their coping mechanisms. Supportingly, in the current

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study, it was observed that BCS women used problem-focused coping strategies, which are adaptive coping strategies,[39] more than women in the HC group. In addition to the diagnosis of breast cancer, it was concluded that age, one of the sociodemographic variables, is a final step predictor. The COVID-19 pandemic also causes uncertainty in people's work and economic situations and causes an increase in psychological distress levels, especially among younger people.[51] It is known that exposure to news about the process on social media also increases the levels of psychological distress and that the use of social media is higher in young people.[47] Considering that the COVID-19 virus has entered our lives quickly, it is thought that the information pollution in the media about cancer patients may have affected BCS women without any scientific study yet. In this study, it is seen that stress levels increase as the age of women decreases.

Second, the role of social support in psychological distress was examined. Many women receive support from their relatives when they are diagnosed with cancer and during their treatment. Although they continue to experience the ongoing physical and psychological problems of the treatment after their treatment is completed and these problems are not understood by their relatives, they feel that they have lost support.[46] Therefore, the role of social support is important both after active treatment and during the COVID-19 process. However, no difference was found between the two groups in terms of social support. It is known that social support creates a buffering effect and is a protective factor against psychological distress.[28] Similarly, in this study, increased social support was associated with decreased depression, anxiety and stress levels.

Third, factors associated with COVID-19 are also important in assessing psychological distress. It was determined that the stress levels of women with a loved one who were diagnosed with COVID-19 were significantly higher. It can be thought that this difference is due to the concerns of those whose loved ones are infected that they may also become infected. This situation can be a trigger, especially for the health anxiety of BCSs. Since deaths due to COVID-19 occur suddenly, PTSD can be seen in loved ones who died in this process.[52] For this reason, it may be an expected result that the stress levels of the women whose loved ones died due to COVID-19 were high in the study.

Finally, the cognitive processes of individuals to evaluate the life crisis and their ability to cope with this event are determinative of the psychological outcome. People with a high intolerance of uncertainty see uncertain situations as stressful and sad.[53] Uncertainty is related to the future and causes anxiety, but there is also a positive relationship with depression.[29] Satıcı et al.[54] emphasize that intolerance to uncertainty has a direct impact on mental health during the pandemic. Similarly, in the current study, it was found that women with a high intolerance to uncertainty had high levels of depression, anxiety and stress. In other words, it can be said that those who feel more inadequate in the face of uncertainty in the COVID-19 process have increased levels of psychological distress. Yu et al.[55] reported that dysfunctional coping strategies increase the psychological distress associated with the pandemic. It is known that problem-focused strategies, similar to adaptive coping strategies, have negative effects on individuals' depression and anxiety levels, and emotion-focused strategies, similar to maladaptive coping strategies, have positive effects.[39] In the current study, it was concluded that while decreasing problem-focused coping was effective in increasing anxiety and stress levels, increasing emotion-focused coping was effective in increasing depression, anxiety and stress levels.

When all the findings of the study are evaluated, it is seen that the variables of education level, monthly income and being diagnosed with COVID-19 are not significant, although they are significant in other studies. It is thought that there are differences between the groups, especially according to the level of education, which may have an effect on the results of this study. In addition, all participants except two participants had a regular income. Therefore, economic difficulties do not create an extra source of stress in this process. In addition, when the data of the study were collected, it was time since women were diagnosed with COVID-19, and the low number of people diagnosed with COVID-19 may affect the results.

The fact that the sample of the study consisted of only women and those with a diagnosis of breast cancer and that women with a diagnosis of breast cancer were not in the active treatment process limits the generalizability of the results. In addition, the fact that the study was conducted with a cross-sectional method also limits the cause-effect relationship.

CONCLUSION

Overall, the results suggest that first, being diagnosed with cancer during the COVID-19 pandemic period is not a vulnerability factor, especially for the BCS group, and perhaps even has an empowering effect in terms of coping with stress. Second, increased intolerance to

uncertainty, emotion-focused (nonfunctional) coping strategies, and lack of social support were found to be cognitive factors that increased psychological distress levels for BCS patients and the HC group during the COVID-19 pandemic. Implementation of emotion regulation interventions to reduce the stress applied to patients and survivors of a stressful life event such as cancer will be effective in reducing psychological distress. In addition, interventions for cognitive restructuring to be applied to these patients will be effective in terms of both tolerating uncertainty and developing problem-focused coping strategies.

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