Relationship between Perceived Stress, Coping Strategies, and Life Satisfaction among Women with Breast Cancer

Abstract

Background: Breast cancer (BC) can be a distressing experience, necessitating substantial life adjustments. That being the case, this study aimed to explore the connection among perceived stress, coping strategies, and life satisfaction in women with BC, as well as the demographic and disease-related factors. **Materials and Methods:** A cross-sectional study was conducted at the Cancer Institute of Tehran University of Medical Sciences. A total of 372 women who met the inclusion criteria were selected through convenience sampling. The study utilized the Perceived Stress Scale (PSS-14), Coping Inventory for Stressful Situations (CISS-21), and Satisfaction With Life Scale (SWLS), as well as demographic and disease-related characteristics. Data analysis was performed with SPSS 18.0. **Results:** The mean (standard deviation [SD]) of perceived stress and life satisfaction were 30.10 (8.7) and 13.86 (4.11), respectively, with emotion-oriented coping strategy being the most employed 24.13 (6.36). The results indicated a strong negative correlation between perceived stress ($r = -0.484$, $p < 0.001$) and the problem-oriented strategy ($r = -0.203$, $p < 0.001$). There was also a significant negative correlation between perceived stress and life satisfaction ($r = -0.547$, $p < 0.001$). However, a positive correlation was found between perceived stress and emotion-oriented strategy ($p < 0.001$). The regression analysis indicated that economic status was correlated with perceived stress, emotion-oriented strategy, and life satisfaction ($\beta = -0.25$, $p < 0.001$), ($\beta = -0.18$, $p < 0.001$), ($\beta = 0.30$, $p < 0.001$). Additionally, occupation was found to predict problem-oriented strategy ($\beta = -0.30$, $p < 0.001$) and avoidance-oriented strategy ($\beta = -0.18$, $p < 0.001$). **Conclusions:** These findings help identify psychological issues in women with BC and lead to effective interventions for mitigating stress, improving coping strategies, and life satisfaction.

Keywords: *Breast neoplasms, coping skills, life satisfaction, psychological stress, women*

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Introduction

Breast cancer (BC) is the most commonly diagnosed cancer among women,[1] accounting for 25% of all cancers worldwide.[2] In Iran, 22 out of every 10,000 women were informed of a BC diagnosis, with an average age of diagnosis being 50 years. However, in Western societies, it is 62 years.[3] Patients with BC often describe their experience as an ongoing battle,[4] with approximately 60% of them grappling with severe anxiety.[5] Advancements in cancer treatment have significantly increased the survival rate to around 90%.[2] During active anticancer treatment, 33% of patients experience psychological distress, and 15% continue to experience distress for several years.[6] After primary treatments, patients undergo a period of "watchful waiting," during which they refrain from treatments until signs of progressive disease become apparent. During this time, patients experience both physical and psychological consequences, including pain, exhaustion, sleep disturbance, stress, anxiety, sadness, fear of recurrence, and metastasis, consequently, contributing to a decrease in life satisfaction.[7]

Stress is the perceived burden that undermines the well-being of an individual or exceeds an individual's resources. BC may affect how a woman perceives her womanhood, heightening the stress that patients experience.[8] Patients from diverse backgrounds and stages of the disease often have age-specific clinical and psychological needs that are not fully addressed.[9] For instance, they require coping strategy skills to overcome psychological consequences as a result of the disease.[10] Patients dealing with BC can rely on strong support

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systems provided by their families, friends, healthcare service providers, and peers. Nurses play a pivotal role in empowering women with BC and their families by effectively addressing disease symptoms, managing treatment side effects, guiding through lifestyle changes, and offering coping strategies.[11]

According to Lazarus and Folkman, two main coping strategies are problem-oriented strategies and emotion-oriented strategies. Problem-oriented strategies aim to change and eliminate the source of stress,[12] whereas emotion-oriented strategies aim to manage the emotional responses elicited by stressful situations.[13] Additionally, avoidance-coping strategies are depicted as an attempt to ignore stressful situations.[1] Finally, life satisfaction is defined as an individual's evaluation of their aspiration for life and indicates that it is related to age, education, employment status, perceived health, and social support.[14] In some studies, the results indicated that patients with BC experience high levels of stress and tend to use both emotion-oriented and problem-oriented strategies more frequently.[8,15] Other studies have suggested that age, education, work status, perceived health, and social support, can have an impact on life satisfaction.[16] It is established that positive coping strategies, such as acceptance, spiritual support, and social support can greatly influence an individual's adjustment and improve their quality of life.[1] However, due to the lack of research on simultaneous impacts on perceived stress, coping strategies, and life satisfaction in women with BC, the proposed study is not only timely but also necessary to address these gaps in our understanding. The present study aimed to investigate the relationship among perceived stress, coping strategies, and life satisfaction in women with BC, alongside their demographics and disease-related factors.

Materials and Methods

This descriptive cross-sectional study was conducted at the Cancer Institute of Tehran University of Medical Sciences, located at Imam Khomeini Hospital Complex in Tehran, Iran. The Cancer Institute is the leading cancer research and treatment organization in the country.

A total of 372 females with BC were selected using convenience sampling, and the sample size was determined with a 95% confidence level and 80% test power. The inclusion criteria were as follows: awareness of the disease, diagnosed over 6 months ago, 18 years or older, suffering from stages 1–4 of BC, literacy, and the ability to communicate effectively. Individuals with any mental disorders receiving treatments or those unwilling to cooperate were excluded.

The data collection aimed to collect demographic and disease-related information. The first section included age, marital status, children, ethnicity, education, occupation, economic status, data source, presence of a supportive individual, and health insurance. The second section focused on disease stage, duration, diagnosis, lymph node involvement, treatment, and surgeries.

The researcher received approval from the Tehran University of Medical Sciences Research Ethics Committee and then visited patients in the medical oncology and surgery departments. After introducing the research objective and methods, the patients provided informed written consent. For patients with lower levels of education, the questionnaires were completed through interviews.

The Perceived Stress Scale is a 14-item self-report measure developed by Cohen *et al*.[17] to measure participants' perceived stress. Each item is scored on a 5-point Likert scale ranging from 0 (never) to 5 (very often). Some of the questions are reverse-scored, and the total scores for the PSS-14 range from 0 to 56. The scale consists of two subscales: perceived self-efficacy and perceived helplessness.

The internal consistency coefficient was assessed; Cronbach's alpha for the perceived stress, self-efficacy, and helplessness were 0.76, 0.80, and 0.60, respectively.[18] The scale has a cut-off point of 21.8, where values higher than that are an indication of high perceived stress.[19] This questionnaire has a proven track record, having been previously used in BC-related research,[8,20] therefore, its applicability in this specific field is well-established.

The CISS-21 is a 21-item self-report inventory developed by Endler and Parker[21] to measure three types of coping strategies in response to stressful situations: problem-oriented, emotion-oriented, and avoidance-oriented. Each item is rigorously scored on a 5-point Likert scale, ranging from one (indicating "not at all") to five (indicating "very much"). A total score falling within the range of 7 to 35 is calculated for each subscale, with a higher score indicating greater use of a particular coping strategy. According to the study conducted by Shokri *et al*. (2008),[22] the CISS-21 exhibits excellent internal consistency, as evidenced by its Cronbach's alpha, which is between 0.70 and 0.86. The three subscales demonstrated reliabilities of 0.64, 0.60, and 0.61 for problem-oriented, emotion-oriented, and avoidance-oriented coping strategies, respectively. Notably, this questionnaire has been used in previous research pertaining to BC.[15]

The Satisfaction With Life Scale (SWLS), a reliable 5-item scale, was initially developed by Diener *et al*.[23] to measure an individual's perceived satisfaction in life. Participants respond on a 5-point Likert scale, with one indicating strong disagreement and five indicating strong agreement. The SWLS demonstrates a high level of reliability, with Cronbach's alpha of 0.83 and a reliability of 0.69, respectively.[24]

The SWLS is a versatile tool, with scores interpreted as absolute and relative satisfaction. Scores between 5 and 10

indicate extreme dissatisfaction; scores between 11 and 15 represent relative satisfaction with life, and scores between 16 and 25 indicate satisfaction with life.[25] This questionnaire has been used in a wide range of research concerning BC.[20,26]

The data were meticulously analyzed using SPSS version 18.0. Detailed descriptive statistics, including frequency, percentage, and mean (SD), were used to scrutinize demographic and disease data sources, as well as the study's dependent variables, such as perceived stress, coping strategies, and life satisfaction. The analysis of variance (ANOVA) test was employed to compare different groups, leading to significant findings. Moreover, the correlation between the dependent variables was evaluated using Spearman's correlation analysis, revealing important relationships. A linear regression test was also conducted to predict the relationship among variables, providing valuable insights. A *p* value less than 0.05 was considered significant, underscoring the importance of the findings.

Ethical considerations

Conducted in collaboration with the esteemed Cancer Institute of Imam Khomeini Hospital Complex, this study, based on a Ph.D. dissertation, received approval from the Tehran University of Medical Sciences Research Ethics Committee and was registered on January 13, 2021 (ID: IR.TUMS.SPH.REC.1399.251). It was also approved as a research project (no. 55423) on October 30, 2020, with an Ethics code of IR.TUMS.SPH.REC.1400.255 on December 7, 2021.

The participants were informed about the confidentiality and anonymity of their information. Additionally, all participants provided informed consent and were informed about the objective of the study.

Results

Participants and disease characteristics

A diverse group of 372 participants, with a mean (SD) age of 47.48 (9.75), were carefully selected for this study. Among them, 91.40% were married, and 68.80% had fewer than three children. In terms of education, 44.40% of the participants held an incomplete diploma, reflecting a broad range of educational backgrounds. Occupation-wise, 80.60% were stay-at-home mothers, representing a significant portion of the participant group. Only 13.40% of the population belonged to the upper class in terms of economic status, indicating a wide economic diversity.

The disease revealed some concerning trends: 50.50% were diagnosed with stage two BC, a significant portion indicating the severity of the disease. Moreover, 43.00% had been diagnosed for 6 to 12 months, suggesting a relatively recent onset for a large proportion. On a positive note, 33.90% showed no lymph node involvement, indicating a less aggressive form of the disease. However, 52.40% have had a mastectomy, and 39.70% were receiving chemotherapy and radiology treatment, emphasizing the ongoing battle against this disease [Table 1].

The mean (SD) score of the perceived stress was notably high. In terms of coping strategies, the emotion-oriented strategy ranked the highest; in contrast, the avoidance strategy received the lowest score. Ultimately, life satisfaction was found to correspond to moderate satisfaction [Table 2].

The ANOVA test results highlighted the diverse range of factors influencing perceived stress. These factors include having children ($F_7 = 2.85$, *p* value = 0.007), occupation ($F_1 = 35.73$, *p* value =<0.001), economic status ($F_1 = 49.17$, *p* value = 0.001), the stage of the BC ($F_1 = 10.84$, *p* value = 0.001), involvement of lymph nodes ($F_2 = 8.03$, *p* value < 0.001), type of treatment ($F_1 = 7.32$, *p* value = 0.007), and presence of a supportive individual ($F_1 = 4.68$, *p* value = 0.03).

The findings, which are highly relevant for healthcare professionals and researchers, indicated that there was a significant difference between the mean score of the problem-oriented strategy and various factors such as age ($F_2 = 3.07$, $p = 0.04$), having children ($F_7 = 1.92$, $p = 0.06$), occupation ($F_1 = 51.69$, $p < 0.001$), economic status ($F_1 = 24.94$, $p < 0.001$), type of surgery ($F_1 = 4.97$, $p = 0.02$), type of treatment ($F_1 = 7.43$, $p = 0.007$), and presence of a supportive individual ($F_1 = 3.15$, $p = 0.07$).

There was a significant difference between the mean score of emotion-oriented strategy and occupation ($F_1 = 6.57$, $p = 0.01$), economic status ($F_1 = 22.09$, $p \leq 0.001$), disease stage ($F_1 = 12.01$, $p = 0.001$), involved lymph node ($F_2 = 6.85$, $p = 0.001$), type of treatment ($F_1 = 4.87$, $p = 0.02$), data source ($F_1 = 4.34$, $p = 0.03$), and presence of supportive individual ($F_1 = 4.88$, $p = 0.02$).

The research has revealed a significant difference between the mean score of avoidance-oriented strategy and age ($F_2 = 5.05$, $p = 0.007$), having children ($F_7 = 2.33$, $p = 0.02$), occupation ($F_1 = 16.26$, $p < 0.001$), and economic status ($F_1 = 4.81$, $p = 0.02$).

The study, conducted with a comprehensive approach, has found a significant difference between the mean score of life satisfaction and a range of factors including age, occupation, economic status, type of treatment, and the presence of a supportive individual. The F-value and *p* value of each factor are as follows: age ($F_2 = 2.99$, *p* value = 0.05), occupation ($F_1 = 5.86$, *p* value = 0.01), economic status ($F_1 = 49.73$, *p* value < 0.001), type of treatment ($F_1 = 4.94$, *p* value = 0.02), and the presence of a supportive person ($F_1 = 29.32$, *p* value < 0.001).

According to Spearman's test, there was a negative correlation between perceived stress and coping strategies and life satisfaction. As perceived stress increases, the score of the problem-oriented strategy ($r = -0.484$, $p < 0.001$),

Table 1: Demographic and disease characteristics in women with BC* (*n*=372)

Variable	*n* (%)**
Age (years)	
<45	144 (38.70)
45-55	145 (39.00)
>55	83 (22.30)
Marital status	
Single	32 (8.60)
Married	340 (91.40)
Number of children	
<3	256 (68.80)
≥3	116 (31.20)
Ethnicity	
Fars	148 (39.80)
Tork	122 (32.80)
Others	102 (27.40)
Education level	
Lower than diploma	165 (44.40)
Diploma	119 (32.00)
University degree	88 (23.70)
Occupation	300 (80.60)
Housewife	47 (12.60)
Employed	25 (6.70)
Others	
Economic status	50 (13.40)
Upper class	290 (78.00)
Middle class	32 (8.60)
Lower class	
Stage of disease	41 (11.30)
1	188 (50.50)
2	95 (25.50)
3	47 (12.60)
4	
Duration after BC diagnosis (months)	160 (43.00)
6-12	100 (26.90)
12-35	112 (30.10)
36 and more	
Involved lymph node(s)	
0	126 (33.90)
1-5	147 (39.50)
≥6	99 (26.60)
Surgery	
Total mastectomy	195 (52.40)
Partial mastectomy	177 (47.60)
Surgery	
Type of treatment	
Chemotherapy and radiotherapy	67 (17.70)
Hormone therapy	148 (39.70)

Contd...

Table 1: Contd...

Variable	*n* (%)**
Immunotherapy	65 (17.70)
Mixed	42 (11.30)
	50 (13.40)
Data source regarding disease	
Physician and staff	302 (81.20)
Internet	46 (12.40)
Radio and TV	1 (0.30)
Others	23 (6.20)
Support	
Husband	172 (46.20)
Child	102 (27.70)
Another family member	74 (19.90)
Others	23 (6.20)
Type of insurance	
Social security	241 (64.80)
Treatment service	118 (31.70)
Others	(3.50)

*Breast cancer. **Number [percentage]

Table 2: Mean (SD) scores of perceived stress (including perceived self-efficacy and self –helplessness), stress coping strategies (including problem-oriented, emotion-oriented, and avoidance-oriented strategies), and life satisfaction scores in 372 patients

Variables	Mean (SD)*	Max**, Min***
Perceived stress	30.10 (8.71)	53.00, 2.00
Perceived self-efficacy	12.5 (4.81)	26.00,0
Self –helplessness	17.60 (4.76)	27.00, 2.00
Problem-oriented coping	20.05 (5.00)	33.00, 7.00
Emotion-oriented coping	24.13 (6.36)	35.00, 8.00
Avoidance-oriented coping	17.53 (6.55)	35.00, 7.00
Life satisfaction	13.86 (4.11)	25.00, 5.00

*Standard Deviation. ** Maximum. *** Minimum

the avoidance-oriented strategy (r = −0.203, *p* < 0.001), and life satisfaction (r = −0.547, *p* < 0.001) decrease [Table 3].

According to the regression analysis, economic status and occupation (*p* < 0.001), BC stage, and number of children (*p* < 0.05) had a significant impact on the perceived stress. Moreover, in terms of demographic characteristics, occupation (*p* < 0.001) and economic status (*p* < 0.05) significantly had an impact on problem-oriented strategy. The occupation, lymph node involvement, BC disease stage (*p* < 0.05), and economic status (*p* < 0.001) of patients were found to contribute positively to the emotion-oriented strategy. There was also a meaningful relationship between avoidance-oriented strategy and demographics, including age and occupation (*p* < 0.05). The occupation and type of treatment (*p* < 0.05), economic status (*p* < 0.001), and presence of a supportive individual (*p* < 0.001) were

also found to significantly influence the quality-of-life satisfaction, indicating the importance of holistic care in improving patient outcomes [Table 4].

Discussion

This study aimed to explore the relationship among perceived stress, coping strategies, and life satisfaction in women with BC, along with the associated demographic and disease factors. The results demonstrated that participants experienced high levels of stress, as measured by the Cohen PSS-14 questionnaire, with a cut-off point of 21.8. Factors such as having children, occupation, economic status, and the stage of the BC disease emerged as significant predictors of perceived stress scores. However, it is imperative to note that a study in Korea (2020) found a low mean score of perceived stress in females with BC, according to the Cohen PSS-10 questionnaire, in contrast to our findings.[8] Furthermore, a study in Germany (2020) reported that young adult patients battling cancer showed a stable level of discomfort, with their anxiety linked to a

Table 3: The correlation among perceived stress, coping strategies, and life satisfaction

	Perceived stress r (p)	Problem-oriented r (p)	Emotion-oriented r (p)	Avoidance-oriented r (p)	Life satisfaction r (p)
Perceived stress	1	−0.48 (<0.001)	0.66 (<0.001)	−0.20 (<0.001)	−0.54 (<0.001)
Problem-oriented	−0.48 (<0.001)	1	−0.30 (<0.001)	0.31 (<0.001)	0.24 (<0.001)
Emotion-oriented	0.77 (<0.001)	−0.30 (<0.001)	1	−0.14 (0.006)	−0.45 (<0.001)
Avoidance-oriented	−0.20 (<0.001)	0.31 (<0.001)	−0.14 (0.006)	1	0.16 (0.001)
Life satisfaction	−0.54 (<0.001)	0.24 (<0.001)	−0.45 (<0.001)	0.16 (0.001)	1

Table 4: Results of linear regression analysis on demographic and disease characteristics variables, and their correlation with the dependent variables (n=372)

	Variable	B*	SE**	β***	df****	p*****
Perceived stress	Child	0.71	0.30	0.11	7	0.02
	Occupation	4.69	1.07	0.21	1	<0.001
	Economic status	-6.37	1.25	-0.25	1	<0.001
	Disease stage	-2.59	0.80	-0.14	1	0.001
	Treatment	1.60	0.84	0.09	1	0.05
	Support	-1.41	0.82	-0.08	1	0.08
Problem-oriented strategy	Age	-0.03	0.02	-0.06	2	0.27
	Child	-0.25	0.20	-0.06	7	0.21
	Occupation	-3.81	0.63	-0.30	1	<0.001
	Economic status	2.02	0.73	0.13	1	0.006
	Surgery	0.68	0.48	0.06	1	0.15
	Treatment	-0.96	0.49	-0.09	1	0.05
	Support	0.73	0.49	0.07	1	0.13
Emotion-oriented strategy	Occupation	2.12	0.83	0.13	1	0.01
	Economic status	-3.52	0.95	-0.18	1	<0.001
	Disease stage	-1.70	0.65	-0.13	1	0.01
	Involved lymph node	0.11	0.05	0.10	2	0.04
	Treatment	1.10	0.65	0.08	1	0.09
	data/knowledge	1.33	0.78	0.08	1	0.09
	Support	-1.10	0.63	-0.08	1	0.08
Avoidance-oriented Strategy	Age	-0.08	0.03	-0.12	2	0.02
	Child	-0.37	0.27	-0.07	7	0.18
	Occupation	-3.07	0.87	-0.18	1	0.001
	Economic status	0.99	0.99	0.05	1	0.31
Life satisfaction	Age	0.009	0.02	-0.02	2	0.68
	Child	-0.03	0.16	-0.01	7	0.18
	Occupation	-1.21	0.53	-0.11	1	0.02
	Economic status	3.70	0.58	0.30	1	<0.001
	Treatment	-0.89	0.43	-0.10	1	0.04
	Support	1.78	0.40	0.21	1	<0.001

*B=Regression coefficient. **SE=Standard error of regression coefficient. ***β=Standardized regression coefficient. ****df=degrees of freedom. *****p-value=Significant level

lack of knowledge concerning their disease, resulting in a lower quality of life compared to their peers in the general population.[9] Establishing the diagnosis and treatment of BC as a potential source of stress in patients, a study in Egypt (2020) further indicated that 9.4% of women with BC exhibited high levels of stress, indicating the divergence in results.[27] These variations could potentially be influenced by cultural concepts surrounding cancer experiences, which may vary across cultures and hence impact stress levels in women with BC.

Although having children could be beneficial, it can also contribute to increased stress when confronting stressful situations. One study in Iran (2019) demonstrated a positive correlation between mothers' anxiety and the number of children.[28] This study is consistent with our study, as having children and household responsibilities, in addition to BC diagnosis and its treatments, can increase perceived stress in patients.

A study in Egypt (2020), revealed that lower economic status was linked to higher anxiety and depression among women struggling with BC. These women require funding for accommodation and commuting to cancer treatment, and it was found that patients with advanced BC were grappling with depression and anxiety. This is a crucial finding, as BC stimulates the oxidative stress response, and there is a relationship between stress parameters and aggressive tumors[29] Similarly, a study in Malaysia (2015), highlighted the association between low monthly income, lack of financial support, and presence of both anxiety and depression.[30] These findings align with the results of our study, suggesting that the financial burden can pose a significant challenge for Iranian patients who are not financially stable. Additionally, a higher BC stage can increase perceived stress in women with BC, as it indicates disease progression.

In this study, the emotion-oriented strategy was the most frequently used coping mechanism. The regression analysis predicted a significant use of this strategy with variables including occupation, economic status, stage of the disease, and lymph node involvement. Importantly, a positive correlation was observed between the emotion-oriented strategy and perceived stress.

One study in Iran (2020) showed that patients with cancer generally employed problem-oriented coping strategies.[15] In another study in Turkey (2014), the problem-oriented strategy had a higher score than other stress management strategies.[31] Being familiar with the symptoms of stress could significantly improve the identification and treatment of cancer.[32] In another study (2017), the results showed that higher levels of emotional representation, a clear indicator of psychological distress, are associated with higher levels of psychological distress,[33] and it is aligned with our study. The use of stress-coping strategies depends on many factors, such as culture and religious beliefs.

The research findings have real-life implications, shedding light on the struggles of financially insecure women. Financially insecure patients were more prone to anxiety and depression.[27] The study of Hassan *et al*. (2015),[30] indicated that women with low income are more likely to suffer from anxiety and depression due to their inability to afford their medical and psychiatric treatments. Similarly, a study conducted in Iran (2019) indicated that women who are housewives tend to utilize the emotion-oriented strategy more in stressful situations, reflecting the emotional toll of financial insecurity.[34]

Patients with BC often confront physical, sexual, mental, cognitive, behavioral, and social problems as a result of stress.[32,35] A meta-analysis has revealed that the effectiveness of coping strategies depends on the cancer stage, treatment type, and disease duration.[27,36] It is stressful to overcome the side effects caused by adjuvant therapy.[10] The stage of the disease and the extent of lymph node involvement significantly influence the survival rate.[37] The greater the number of involved lymph nodes, the higher the stage of BC, leading to a heavier burden of cancer treatment and its associated expenses, particularly when considering their economic status. This underscores the need for financial support in addition to medical care. These studies are also consistent with our study.

The present study also reported a moderate score regarding life satisfaction among patients diagnosed with BC. The results of the study indicated that occupation, economic status, treatment, and the presence of a supportive individual are significant predictors of life satisfaction scores. Life satisfaction, a complex and multifaceted construct that evolves over time, is shown to considerably impact the recovery of patients.[38-40] It is also associated with age, education, work status, perceived health, and social support. The impact of social support on patients' adaptation to the disease, their quality of life, and survival cannot be overstated.[41] A study in Iran (2018), highlighted the irreplaceable role of family support in dealing with cancer. A study conducted in Egypt (2020) found a significant statistical relationship between social support and life satisfaction in BC patients. The study suggested that social support can be a predictor of life satisfaction in these patients.[42]

A study conducted in Sweden (2020) revealed that women reported decreased satisfaction with their physical and mental well-being following interventions for BC treatment, such as chemotherapy.[16] A study in Iran (2021) also found that emotional adjustments have been shown to increase life satisfaction,[20] highlighting the importance of emotional well-being in overall life satisfaction. Similarly, a study in Sweden (2023) showed that chemotherapy and breast reconstruction increased life dissatisfaction.[43] These studies, including our own, provide valuable insights into the impact of BC treatment

on women's well-being. Srivastava *et al.* (2021) further emphasized this by indicating that perceived social support significantly impacts the life satisfaction of patients with BC.[44] The challenges of life satisfaction, a complex issue influenced by various factors, have been the focus of several studies.[35] A study in Iran (2017), revealed that women diagnosed with BC were seeking support.[36] Another study in Ghana (2020) emphasized that having social support was linked to higher levels of active coping, reducing psychological stress among patients with BC.[45] These studies consistently demonstrate that such support can significantly enhance life satisfaction, a finding that resonates with our own research. One study in South Korea (2020) indicated that occupation and income have an impact on life satisfaction.[46]

This study revealed that perceived stress negatively correlates with problem-solving and life satisfaction, whereas it has a positive correlation with emotion-oriented strategies. The stress resulting from BC treatment can lead to decreased self-esteem, which may be attributed to physical discomfort.[8] The ability to adapt and know coping skills could help reduce stress. In a review study (2020), it was found that because cancer is a source of stress, coping with this condition may increase psychological adjustment to the BC disease.[47] In another study in Iran (2020), problem-oriented strategies were often associated with reduced psychological stress, leading to improved marital satisfaction. For instance, problem-solving by increasing a woman's confidence with BC was shown to decrease her stress.[48] In contrast, in an emotion-oriented strategy, the patient tries to control their emotions and maintain emotional balance, which can increase their anxiety. This was observed in a study conducted in Japan (2016) and another study in America (2015), where patients with cancer experienced higher levels of stress and poorer health.[15] One study in Sweden (2017) discovered that women with BC who have good emotional functioning are more likely to experience better life satisfaction.[14] A study in Iran (2021) echoed this showing that as life satisfaction increased, perceived stress decreased.[20] The present study indicated that high stress levels among women with BC resulted in the use of emotion-oriented strategies and, subsequently, lower life satisfaction. This suggests a need for further research to better understand and address the emotional challenges faced by women with BC.

In our study, we found that occupation and economic status on problem-oriented strategy. It reveals that stress from a low-paid job can have significant effects on both physical and mental health.[49] These findings align with our research, further validating the importance of this study.

In this study, the problem-oriented strategy negatively correlated with the emotion-oriented strategy, which focuses on managing the emotional response to the stressor. Adaptive coping strategies are intertwined with better

psychological and mental well-being and help prevent the use of disengagement coping strategies.[36]

In this study, the only coping strategy that correlated with age is the avoidance-oriented strategy. A study conducted in Malaysia (2015) reported a relationship between coping strategies and age.[49] Similarly, a study in Iran (2018) indicated that older patients tend to adopt more effective coping strategies.[50] Contradictorily, a study in Iran (2020) found no significant relationship between age and coping strategies.[15] It is evident that using different coping strategies depends on various factors, such as culture, religious beliefs, and disease perceptions, which undergo changes over time. Despite time constraints imposed by the patient's physical and mental conditions, the researchers attempted to provide a comprehensive explanation to clarify any ambiguity in the questionnaires. It is worth mentioning that a cross-sectional study design cannot establish a cause–effect relationship. The questionnaires solely measured perceived stress, coping strategies, and life satisfaction. However, it is important to note that no psychological disorders, which could significantly impact these measurements, were measured in patients with BC.

Another limitation of the study, which the researchers are fully aware of, is related to the use of self-report questionnaires. These questionnaires, although widely used, come with disadvantages. Lastly, the study had to be conducted exclusively at a single center.

Conclusion

This study suggests that implementing a problem-oriented strategy can effectively lower perceived stress, consequently, leading to an increase in life satisfaction. Psychological interventions involving multiple disciplines could assist women dealing with BC manage stress and develop effective coping strategies. It is recommended that authorities take into account the financial challenges faced by low-income patients when it comes to diagnosis, treatment, and follow-up. Occupation and economic status, which can influence stress levels due to work-related pressures and financial worries, are inextricably intertwined with coping strategies and life satisfaction. These findings provide a basis for identifying the psychological needs of patients with BC to plan effective interventions aimed at reducing stress and increasing coping abilities, as well as life satisfaction.

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