

The Relationship Between Self-Esteem, Stigma, and Coping Strategies Among Breast Cancer Patients in Erbil City, 2024-2025

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Received: 19 February 2025 Revised: 30 March 2025 Accepted: 30 March 2025 Published: 15 April 2025
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Abstract

Background and Aim Breast cancer patients often face psychological challenges, including diminished self-esteem and stigma, which can impact their coping strategies. This study aimed to assess the levels of self-esteem and stigma among breast cancer patients in Erbil City and analyze their relationship with coping mechanisms.

Methods This cross-sectional study was conducted from June 10, 2024, to February 20, 2025, in two hospitals in Erbil City, using purposive sampling. The study contained four parts, including demographic data and three standardized tools: the Rosenberg Self-Esteem Scale (RSE) to assess self-esteem, the Cancer Stigma Scale (CASS) to evaluate stigma, and the Cancer Coping Questionnaire to measure coping strategies. Data were analyzed using SPSS version 28 (IBM Corp., Armonk, NY), with Pearson correlation and multiple linear regression applied to examine associations between self-esteem, stigma, coping strategies, and demographic variables. Significance was set at $p < 0.05$.

Results A total of 109 breast cancer patients participated in the study. The mean scores for self-esteem, stigma, and coping strategies were 26.84 ± 7.33 , 122.47 ± 16.90 , and 53.47 ± 14.72 , respectively, indicating that all three variables were at a moderate level among participants. Pearson correlation analysis revealed a significant negative relationship between stigma and self-esteem ($r = -0.16$, $p < 0.001$), suggesting that higher stigma was associated with lower self-esteem. Additionally, stigma was negatively correlated with coping strategies ($r = -0.61$, $p < 0.001$), while self-esteem was positively correlated with coping strategies ($r = 0.14$, $p < 0.001$), indicating that higher self-esteem was linked to better coping strategies.

Conclusion The study found that breast cancer patients had moderate levels of stigma, self-esteem, and coping strategies. It is recommended that policymakers and healthcare providers develop targeted psychosocial interventions to reduce stigma, enhance coping mechanisms, and improve self-esteem among breast cancer patients.

Keywords Breast Cancer · Self-Esteem · Stigma · Coping Strategies · Psychological Well-Being

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Introduction

Breast cancer remains one of the most prevalent malignancies affecting women worldwide, with significant psychological and social implications beyond its physical manifestations (İzci et al., 2016). In Iraq, breast cancer accounts for approximately 34% of all female cancers, with incidence rates steadily increasing over the past decade (Houghton and Hankinson, 2021). The Kurdistan Region of Iraq, particularly Erbil City, has witnessed similar trends, with breast cancer being the most common cancer among women, representing nearly 32% of all female cancer cases (Abdulkareem et al., 2023, Shwana Shwana et al., 2020). This growing prevalence highlights the critical need for comprehensive cancer care that addresses not only the physical aspects of the disease but also the psychological and social dimensions that profoundly impact patients' quality of life and treatment outcomes.

The diagnosis and treatment of breast cancer often precipitate a complex array of psychological challenges that can significantly affect patients' overall well-being (Dinapoli et al., 2021, Mohammed et al., 2025, Kakabra et al., 2025). Among these challenges, diminished self-esteem emerges as a prevalent concern, frequently stemming from altered body image perceptions, changes in femininity concepts, and disrupted role fulfillment within family and society (Merino et al., 2024). Studies across diverse cultural contexts have consistently documented reduced levels of self-esteem among breast cancer patients, with particularly pronounced effects observed during active treatment phases and in younger women (Coelho et al., 2024, Morales-Sánchez et al., 2021). In the Middle Eastern context, including Kurdistan, where cultural norms and societal expectations regarding women's roles and appearance hold particular significance, the impact on self-esteem may be even more substantial, potentially affecting treatment adherence and recovery trajectories.

Concurrently, stigma represents another significant psychosocial burden that breast cancer patients frequently encounter (Tang et al., 2023). Breast cancer stigma encompasses negative attitudes, stereotypes, and discriminatory behaviors directed toward individuals with breast cancer, often rooted in misconceptions about the disease's etiology, contagiousness, or prognosis (Wu et al., 2023). In many Middle Eastern societies, including Kurdistan, cultural factors may amplify cancer-related stigma, with beliefs associating cancer with divine punishment, moral transgression, or genetic impurity (Oyeleke et al., 2025, Akhagbaker et al., 2024, Hamad et al.,

2024). This stigmatization can manifest in various contexts, including healthcare settings, family environments, and workplace interactions, leading to social isolation, treatment delays, and concealment behaviors that potentially compromise care outcomes. Recent studies conducted in neighboring regions have reported stigma prevalence rates ranging from 41% to 68% among breast cancer patients, with higher rates observed in rural areas and among patients with limited education (Tang et al., 2023, Jin et al., 2021).

In response to these psychological and social challenges, breast cancer patients employ various coping strategies—cognitive and behavioral efforts to manage stressful situations exceeding personal resources (Hu et al., 2021, Saber et al., 2025). These strategies typically fall into approach-oriented (active problem-solving, information-seeking, emotional expression) and avoidance-oriented categories (denial, behavioral disengagement, substance use) (Baqutayan, 2015, Fareeq Saber et al., 2024, Ahmed et al., 2024). Research suggests that coping mechanisms significantly influence psychological adjustment, treatment adherence, and survival outcomes among breast cancer patients (Jiang et al., 2022). Cultural background substantially shapes coping preferences, with studies in Middle Eastern contexts noting greater reliance on religious coping, family support systems, and fatalistic acceptance compared to Western populations (Rowther et al., 2020). The effectiveness of different coping strategies varies considerably based on individual characteristics, disease stage, and available social resources, highlighting the need for personalized psychosocial interventions in comprehensive cancer care.

In the specific context of Erbil City, understanding the relationships between self-esteem, stigma experiences, and coping strategies among breast cancer patients is a critical area. The sociocultural landscape of Kurdistan, characterized by strong family bonds, religious influences, evolving gender roles, and recent healthcare developments, creates dynamics that may affect these psychological constructs. While studies have explored these variables separately in various Middle Eastern contexts, few have examined their interrelationships, particularly within the Kurdish population. Significant research gaps persist regarding these psychosocial factors in the Kurdish context. Most evidence on self-esteem, stigma, and coping in breast cancer comes from Western or East Asian populations, with limited representation from Middle Eastern settings, especially Kurdistan. Therefore, this study aims to explore the relationship between self-esteem, stigma, and coping strategies among breast cancer patients in Erbil City.

Research Question

Are there significant relationships between self-esteem, perceived stigma, and coping strategies among breast cancer patients?

Methods

Study Design, Setting, Period, and Sampling

This cross-sectional study was conducted in Erbil, Iraq, involving two major hospitals. The purposive sampling method was used to collect data from June 10th, 2024, to February 20th, 2025. The selected hospitals were Nanakali Hospital for Blood Diseases & Cancer and Rizgary Teaching Hospital, as they provide specialized oncology services to breast cancer patients undergoing chemotherapy.

Sample Size

The sample size for this study was determined using G*Power version 3.1, with an effect size of 0.33, an alpha error probability of 0.05, and a power of 0.95. Based on these parameters, the required sample size was calculated to be 109 participants.

Inclusion/exclusion

The inclusion criteria for participants included breast cancer patients aged 18 years or older who had been diagnosed by a specialist and had been undergoing chemotherapy for at least three months. Patients were also required to be physically and mentally capable of completing the questionnaire. On the other hand, patients with recurrent breast cancer, those with documented or self-reported psychological disorders, or those who did not complete at least 90% of the questionnaire were excluded from the study.

Study Tools and Data Collection

The questionnaire was divided into four main parts. The first part gathered sociodemographic data, including age, marital status, number of children, educational level, employment status, type of residence, living situation, household income, duration of chemotherapy treatment, duration of illness, and physical complications related to treatment. The second part used the RSE to assess self-esteem, consisting of 10 items rated on a 4-point Likert scale. The third part applied the CASS to evaluate stigma levels through 25 Likert-scale items. The fourth part used the Cancer Coping Questionnaire, which includes 21 items to assess coping strategies. The questionnaire was translated into Kurdish using the forward-backward translation method and reviewed by a psychiatrist for content accuracy. Data were collected by distributing the questionnaires to eligible participants, with each participant taking approximately 15–20 minutes to complete it.

Pilot Study

Although standardized tools were used in this study, a pilot test was conducted to assess the reliability and content validity of the translated questionnaires. A total of 20 breast cancer patients participated in the pilot study, which was conducted prior to the main data collection. The internal consistency was measured using Cronbach's alpha (Taber, 2018), and yielded excellent and very good results: 0.91 for the Rosenberg Self-Esteem Scale, 0.89 for the Cancer Stigma Scale, and 0.85 for the Cancer Coping Questionnaire. Additionally, the content validity of the questionnaires was reviewed and confirmed by 10 nursing professors from various specialties. Data from the pilot study were excluded from the final analysis.

Measures

Sociodemographic Characteristics

The first section of the questionnaire collected sociodemographic and clinical information of the participants. This included age, marital status, number of children, educational level, employment status, type of residence (urban or rural), living arrangement (alone or with family), annual household income, duration of chemotherapy treatment, duration since diagnosis, and the presence of any physical complications related to cancer or its treatment.

Cancer Stigma Scale (CASS)

Stigma was assessed using the Cancer Stigma Scale (CASS), a standardized 25-item instrument developed to measure six dimensions of cancer-related stigma: awkwardness, avoidance, severity, policy opposition, financial discrimination, and personal responsibility. The items were presented in two parts. The first part measured beliefs and perceptions using a 7-point Likert scale ranging from "Strongly disagree" to "Strongly agree," including a "Not sure" option. The second part assessed feelings and behavioral intentions toward individuals with cancer using a 7-point scale ranging from "Definitely not" to "Yes, definitely." Higher scores indicated higher levels of perceived stigma.

Cancer Coping Questionnaire

Coping strategies were assessed using the 21-item Cancer Coping Questionnaire, which measures the frequency of adaptive coping behaviors used by cancer patients. Responses were recorded on a 4-point Likert scale ranging from "Not at all" to "Very often." The questionnaire included both general and partner-based coping strategies, assessing areas such as emotional regulation, planning, reframing, and partner communication. An initial question evaluated the overall stress level experienced in the past week.

Rosenberg Self-Esteem Scale (RSE)

Self-esteem was measured using the RSE, a widely used 10-item questionnaire designed to assess global self-worth. Participants responded on a 5-point Likert scale ranging from “Strongly agree” (1) to “Strongly disagree” (5). Items 2, 5, 6, 8, and 9 were reverse-scored. Total scores ranged from 10 to 50, with higher scores indicating higher levels of self-esteem.

Ethical Approval and Informed Consent

This study adhered to the ethical standards outlined by the Institutional Research Ethics Committee and the principles of the Declaration of Helsinki. Ethical approval was obtained from the Undergraduate Research Committee at the College of Nursing, Hawler Medical University, with the approval code 3/13/1915 granted on October 1st, 2024. Oral informed consent was obtained from all participants before they completed the questionnaires.

Statistical Analysis

Data were summarized and reported with frequency and percentage for qualitative variables, while quantitative variables were presented using mean and standard deviation. The relationships between self-esteem, stigma, and coping strategies were assessed using Pearson's correlation coefficient. The adjusted associations between these variables and potential confounding demographic factors were evaluated using multiple linear regression analysis. All statistical analyses were performed using SPSS version 28 (IBM Corp., Armonk, NY), with significance levels considered at $p < 0.001$.

Results

Demographic and Clinical Characteristics

A total of 109 breast cancer patients participated in this study. The mean age was 46.84 ± 9.94 years, with the majority aged 41-50 years (45, 41.3%). Most participants were married (99, 90.8%), and 85 (78.0%) had more than two children. Regarding education, 38 (34.9%) had primary education, while only 1 (0.9%) had a postgraduate degree. In terms of employment, the majority were housewives (77, 70.6%), while 27 (24.8%) were employed. Most patients resided in urban areas (65, 59.6%), and 36 (33.0%) reported a low household income. The most common duration of chemotherapy treatment was 3 to 6 months (57, 52.3%), while 55 (50.5%) had been suffering from cancer for less than 6 months. All patients (109, 100%) reported experiencing at least one physical complication from chemotherapy. The mean scores for stigma, self-esteem, and coping strategies were 122.47 ± 16.90 , 26.84 ± 7.33 , and 53.47 ± 14.72 , respectively, indicating that all three variables were at moderate levels among the participants.

Detailed demographics and other variables are presented in Table 1.

Correlation Between Self-Esteem, Stigma, and Coping Strategies

A significant negative correlation was found between stigma and self-esteem ($r = -0.16$, $p < 0.001$), indicating that higher stigma is associated with lower self-esteem. There was also a strong negative correlation between stigma and coping strategies ($r = -0.61$, $p < 0.001$), suggesting that higher stigma is linked to poorer coping abilities. Additionally, a significant positive correlation was observed between self-esteem and coping strategies ($r = 0.14$, $p < 0.001$), meaning that higher coping strategy scores were associated with better self-esteem. For further details, see Table 2.

Association Between Self-Esteem, Stigma, Coping Strategies, and Demographic Variables

The multiple linear regression analysis confirmed that age remained a significant predictor of self-esteem ($p = 0.01$), showing that older individuals tend to have lower self-esteem. Type of residence was also a significant predictor ($p = 0.02$), highlighting the role of location in shaping self-esteem. Stigma had a strong negative impact on self-esteem ($p < 0.001$), meaning that higher stigma levels significantly lower self-esteem, while coping strategies were positively associated with self-esteem ($p < 0.001$), suggesting that better coping strategies improve self-esteem levels. For more details, refer to Table 3.

Discussion

The present study aimed to examine the relationship between self-esteem, stigma, and coping strategies among breast cancer patients in Erbil City. Overall, the results showed moderate levels of stigma, self-esteem, and coping strategies among the participants.

Breast cancer is a life-altering diagnosis that can significantly impact a person's psychological well-being, often leading to feelings of stigma and challenges in maintaining self-esteem (Nilsen et al., 2021). In Erbil City, the cultural and social context may present unique challenges for breast cancer patients in terms of coping with their diagnosis and treatment. Unfortunately, there is limited research on the interplay between stigma, self-esteem, and coping strategies in this specific population. Given the importance of these factors in the overall well-being of breast cancer patients, we aimed to investigate their relationships and associated factors in Erbil City.

The demographic characteristics of our study participants

provide valuable insights into the social and familial context of breast cancer patients in Erbil City. Most participants were married, had children, and lived in urban areas, suggesting that the majority had a stable family structure and social support. This finding aligns with global trends, as family support has been consistently identified as a crucial factor in coping with cancer (Kristjanson and Ashcroft,

Table 1: Demographic and Clinical Characteristics of Patients.

Variables	Characteristics n=109	F	%
Age (year)	18-30	6	5.5
	31-40	18	16.5
	41-50	45	41.3
	51-60	28	25.7
	61-above	12	11.0
	Mean $\pm$ SD	46.84 $\pm$ 9.94	
Gender	Male	8	7.3
	Female	99	90.8
Number of Children	None	9	8.3
	One	4	3.7
	Two	11	10.1
	More than two	85	78.0
Educational Level	No education	29	26.6
	Primary education	38	34.9
	Secondary education	20	18.3
	Bachelor's degree	21	19.3
	Postgraduate degree (Masters, Ph.D., etc.)	1	0.9
Employment Status	Employed	27	24.8
	Unemployed	4	3.7
	Retired	1	0.9
	Housewife	77	70.6
Type of Residence	Urban	65	59.6
	Rural	21	19.3
	Suburban	23	21.1
Living Situation	Living alone	0	0.0
	Living with family	109	100.0
	Living with friend	0	0.0
	Living in a care facility	0	0.0
Annual Household Income	Low income	36	33.0
	Medium income	72	66.1
	High income	1	0.9
Duration of Chemotherapy Treatment	3 to 6 months	57	52.3
	6 months to 1 year	22	20.2
	1 to 2 years	12	11.0
	More than 2 years	18	16.5
Duration of suffering cancer	Less than 6 months	55	50.5
	6 months to 1 year	18	16.5
	1 to 3 years	23	21.1
	More than 3 years	13	11.9
Do you suffer any physical complication of chemotherapy (e.g. loss hair, vomiting, bleeding, and ...)?	Yes	109	100.0

1994, Given et al., 2001, Wagland et al., 2015). However, the specific cultural norms and family dynamics in Erbil City may influence the nature and extent of this support, warranting further exploration in future studies.

Table 1: (continued)

Stigma Levels	Low Stigma	0	0.0
	Moderate Stigma	71	65.1
	High Stigma	38	34.9
Mean $\pm$ SD		122.47 $\pm$ 16.90	
Coping Strategy Levels	Poor	32	29.4
	Moderate	39	35.8
	Good	38	34.9
	Mean $\pm$ SD	53.47 $\pm$ 14.72	
Self-esteem Levels	Low self-esteem	19	17.4
	Moderate self-esteem	48	44.0
	High self-esteem	42	38.5
	Mean $\pm$ SD	26.84 $\pm$ 7.33	

Table 2: Correlation Between Self-Esteem, Stigma, and Coping Strategies Among Breast Cancer Patients in Erbil City (n = 109)

Variables	Pearson Correlation Coefficient	Self-Esteem	Stigma	Coping Strategy
Self-Esteem	Correlation Coefficient	1.00	-0.16**	0.14**
	Sig. (2-tailed)	.	p<.001	p<.001
	N	109	109	109
Stigma	Correlation Coefficient	-0.16**	1.00	-0.61**
	Sig. (2-tailed)	p<.001	.	p<.001
	N	109	109	109
Coping Strategy	Correlation Coefficient	0.14**	-0.61**	1.00
	Sig. (2-tailed)	p<.001	p<.001	.
	N	109	109	109

Note: Significance was set at $p < .001$.

The universal experience of physical complications from chemotherapy among our participants highlights the significant burden of treatment side effects on breast cancer patients. This finding is consistent with research from various countries, which has documented the prevalence and impact of chemotherapy-related complications (Wagland et al., 2016, Nilsen et al., 2021). However, the specific

challenges faced by patients in Erbil City may be influenced by factors such as access to healthcare, quality of care, and cultural attitudes towards pain and discomfort. Understanding these context-specific factors is crucial for developing targeted interventions to manage treatment side effects and improve quality of life for breast cancer patients in this region.

Table 3: Final Model of Multiple Linear Regression for Assessing the Association Between Self-Esteem, Stigma, Coping Strategies, and Demographic Variables Among Breast Cancer Patients in Erbil City

Variables	Coefficient t standardiz ed (B)	Coefficient Unstandar dized (B)	95% Confidence Interval		P value
			Low er	Upp er	
Age	-0.34	-0.23	-0.37	-0.01	0.01
Marital status	0.04	0.67	-2.97	4.32	0.72
Number of Children	-0.04	-0.09	-0.64	0.46	0.74
Educational Level	-0.01	-0.01	-1.70	1.69	0.10
Employment Status	0.09	0.35	-0.76	1.46	0.54
Type of Residence	-0.22	-1.87	-3.45	-0.29	0.02
Annual Household Income	0.02	0.29	-2.82	3.40	0.86

Duration of Chemotherapy Treatment	-0.40	-2.44	-6.28	1.42	0.21
Duration of suffering cancer	0.57	3.56	-0.54	7.65	0.09
Do you suffer any physical complication of chemotherapy	0.17	0.42	-0.08	0.92	0.10
Stigma	-0.13	0.05	-0.20	0.15	<.001
Coping Strategy	0.08	0.04	-0.07	0.15	<.001

Note: Self-Esteem is the dependent variable, Significance was set at $p < .001$.

The moderate levels of stigma, self-esteem, and coping strategies observed in our study suggest a complex psychological landscape for breast cancer patients in Erbil City. These findings are in line with previous research that has reported similar levels of these factors in cancer populations (Zamanian et al., 2022, Ow and Lee, 2015). However, the specific manifestations and determinants of stigma, self-esteem, and coping may vary across cultural contexts. For example, the sources of stigma and the coping strategies employed by patients in Erbil City may be influenced by cultural beliefs, religious practices, and societal norms (Hasan et al., 2025). Moreover, the strong negative relationship between stigma and coping strategies observed in our study underscores the detrimental impact of stigma on patients' ability to manage their illness. This finding is consistent with research from other countries, which has demonstrated that stigma can hinder the adoption of positive coping mechanisms (Ong et al., 2016, Zamanian et al., 2022). However, the specific factors contributing to stigma and its impact on coping may differ in the context of Erbil City. For example, cultural beliefs about cancer, gender roles, and societal expectations may shape the ways in which stigma is experienced and responded to by patients. Addressing these context-specific factors is crucial for developing effective interventions to reduce stigma and promote adaptive coping strategies among breast cancer patients in this region.

The association between living environment and self-esteem observed in our study highlights the importance of considering the social and environmental context in supporting the psychological well-being of breast cancer patients. This finding aligns with research from other countries, which has demonstrated the influence of social support and living conditions on self-esteem in cancer populations (Niveau et al., 2021, Li et al., 2015). However, the specific characteristics of urban, rural, and suburban

settings in Erbil City may present unique challenges and opportunities for promoting self-esteem among breast cancer patients. Understanding these context-specific factors is essential for developing targeted interventions that address the specific needs and resources of patients in different living environments. The strong predictive role of stigma on self-esteem observed in our study emphasizes the pervasive impact of stigma on patients' self-worth. This finding is consistent with research from various countries, which has documented the negative effects of stigma on self-esteem in cancer populations (Fujisawa and Hagiwara, 2015). However, the specific sources and manifestations of stigma may vary across cultural contexts. For example, in Erbil City, stigma may be influenced by cultural beliefs about cancer, gender roles, and societal expectations. Addressing these context-specific factors is crucial for developing effective interventions to reduce stigma and promote self-esteem among breast cancer patients in this region.

The positive impact of coping strategies on self-esteem observed in our study underscores the importance of fostering adaptive coping mechanisms in supporting the psychological well-being of breast cancer patients. This finding aligns with research from other countries, which has demonstrated the benefits of positive coping strategies on self-esteem in cancer populations (Manne et al., 2015). However, the specific coping strategies that are most effective may vary across cultural contexts. For example, in Erbil City, coping strategies may be influenced by religious practices, family dynamics, and societal norms. Understanding these context-specific factors is essential for developing culturally sensitive interventions to promote adaptive coping strategies and enhance self-esteem among breast cancer patients in this region. Despite the valuable insights provided by our study, several limitations should be acknowledged. The cross-sectional design limits the ability to infer causal relationships between stigma, self-esteem, and coping strategies. Additionally, the study was conducted in a single city, which may limit the generalizability of the findings to other regions or cultural contexts. Future research should aim to include longitudinal designs and a broader geographic scope to validate and extend these findings. Moreover, exploring the effectiveness of targeted interventions to reduce stigma, promote adaptive coping strategies, and enhance self-esteem could provide practical recommendations for improving the psychological well-being of breast cancer patients in Erbil City and beyond.

Conclusion

The findings indicated that breast cancer patients experienced moderate levels of stigma, self-esteem, and coping strategies. To address these challenges,

policymakers and healthcare providers should implement comprehensive psychosocial interventions, including counseling services, peer support groups, and stigma-reduction programs. Additionally, integrating mental health support into oncology care, enhancing patient education on adaptive coping strategies, and promoting family involvement in psychological support can further improve patients' well-being and quality of life. Furthermore, training healthcare professionals to provide emotional and psychological support, increasing public awareness campaigns to reduce cancer-related stigma, and ensuring easier access to psychological services within cancer care facilities are essential steps toward improving the overall mental health and coping abilities of breast cancer patients.

Statements and Declarations

Funding The author(s) received no financial support for the research, authorship, and/or publication of this article.

Competing Interests The authors declare the following potential conflicts of interest: the submitting author, Abdulmalik Fareeq Saber, is the Editor-in-Chief of the journal. Additionally, some of the co-authors—Ahmed Ali Rasool, Arpi Manookian, Mosleh Saber Kareem, Ahmed Naif Ali, and Safin Hussein—are also members of the journal's editorial board. However, the peer-review and editorial decision process for this manuscript was handled independently by other editors of the journal who were not involved in the authorship. The review process was conducted rigorously to ensure fairness, objectivity, and academic integrity.

Ethics Statement Ethical approval for this study was obtained from the Undergraduate Research Committee at the College of Nursing, Hawler Medical University (Approval Code: 3/13/1915), approved on October 1, 2024.

Data Availability Statement The data that support the findings of this study are available from the corresponding author upon reasonable request.

Patient consent statement Oral informed consent was obtained from all participants before they filled out the questionnaires.

Clinical trial registration This study did not constitute a clinical trial and therefore did not require registration.

Acknowledgements We would like to express our sincere gratitude to the breast cancer patients at Nanakali Hospital for Blood Diseases & Cancer and Rizgary Teaching Hospital in Erbil City for their participation in this study. We are also deeply thankful to the staff and administration of both institutions for their support and cooperation during the data collection process.

Permission to reproduce material from other sources There are no reproduced materials in the current study.

Author Contributions Yousif Abdulsatar Jabbar: conceptualization; data curation; methodology; writing—original draft; Visualization; writing—review & editing; Banaz Othman Ali: conceptualization; data curation; methodology; writing—original draft; Visualization; writing—review & editing. Amez Abubakr Omar: conceptualization; data curation; methodology; writing—original draft; Visualization; writing—review & editing. Arena Nawzad Awsu: conceptualization; data curation; methodology; writing—original draft; Visualization;

writing—review & editing. Ahmed Ali Rasool: conceptualization; methodology; Supervision; Visualization; writing—review & editing. Arpi Manookian: conceptualization; methodology; Visualization; writing—review & editing. Mosleh Saber Kareem: conceptualization; methodology; Visualization; writing—review & editing. Ahmed Naif Ali: conceptualization; methodology; Visualization; writing—review & editing. Safin Hussein: conceptualization; methodology; Visualization; writing—review & editing. Abdulmalik Fareeq Saber: conceptualization; formal analysis; investigation; methodology; project administration; supervision; writing—review & editing. All authors have read and approved the final version of the manuscript. The corresponding author had full access to all of the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis.

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