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Factors predicting self-compassion among patients with breast cancer undergoing chemotherapy in Thailand: A cross-sectional study

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Abstract

Background: Breast cancer is the most common female malignancy. Although chemotherapy is the primary treatment for breast cancer, it frequently has several detrimental side effects. Patients with breast cancer require self-compassion to regulate their emotions in order to cope with their suffering. Factors affecting self-compassion have mostly been investigated in the context of chronic diseases in general, not specifically in relation to patients receiving chemotherapy for breast cancer.

Objective: This cross-sectional study sought to describe the self-compassion level and to examine the predictive ability of self-critical judgment, body image, stress, attachment style, social support, hope, and self-reassuring on self-compassion among patients with breast cancer undergoing chemotherapy.

Methods: The participants were 210 Thai women with breast cancer who received chemotherapy in northern Thailand and were selected using proportionate random sampling. Data were collected from December 2021 to January 2023 using validated instruments. Data were analyzed using descriptive statistics and hierarchical regression analysis.

Results: Self-compassion was moderate (Mean = 2.91, SD = 0.91). Self-critical judgment (β = 0.487, p <0.001) and hope (β =0.128, p = 0.032) could predict self-compassion in patients with breast cancer undergoing chemotherapy and explained 40.1% of the variance.

Conclusion: The study's findings highlight the importance of addressing self-critical judgment and fostering hope in patients with breast cancer undergoing chemotherapy to enhance their self-compassion. Nurses and other healthcare providers can use the findings to provide interventions to promote self-compassion.

Keywords

Thailand; self-compassion; breast cancer; chemotherapy; cross-sectional study

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Background

Breast cancer is the most common malignancy among women worldwide. An estimated 2.3 million new instances of female breast cancer are expected to occur globally, making up about 11.7% of all cancer cases (Sung et al., 2021). In many countries, breast cancer has the highest incidence, being the leading cause of mortality. It is the cause of 1 in 4 cancer diagnoses and 1 in 6 cancer-related deaths in women (Sung et al., 2021). Although the incidence rates of breast cancer are rising in high Human Development Index (HDI) nations, the mortality rates are higher in low HDI nations (World Health Organization, 2024).

In Thailand, breast cancer accounts for 37.9% of the total female cancer cases, making it the most common cancer among women (National Cancer Institute & Thai Ministry of Public Health, 2022), with age-standardized mortality rates of 21 per 100,000 person-years (Vichapat et al., 2023). Breast cancer diagnoses can be highly upsetting for women because losing breasts causes them to feel sad and unworthy (Iddrisu et al., 2020). Breast cancer patients experience fears of the spread and return of cancer (Tong et al., 2024) and emotional insecurity and depression after diagnosis (Iddrisu et al., 2020). Therefore, treatments are necessary to stop the spread of breast cancer.

Chemotherapy is the main treatment option for breast cancer in modern medicine (Riabkrathok & Siripanich, 2021). Breast cancer is expected to be among the most prevalent forms requiring chemotherapy (12.7%) of the projected 1.9 million cancer cases in 2040 (Wilson et al., 2019). In Thailand, according to hospital-based records, chemotherapy was administered in 26.7% of patients with breast cancer, whereas 17.5% underwent chemotherapy in combination with other treatments (National Cancer Institute & Thai Ministry of Public Health, 2021). However, there are adverse effects of chemotherapy that cause great suffering to patients. It causes

fatigue (Phongnopakoon et al., 2023), nausea and vomiting (Phongnopakoon et al., 2023), psychological problems such as fear, uncertainty, depression, and anxiety (Thasaneesuwan & Nilmanat, 2019), resulting in lower quality of life (Ilyas et al., 2020). Thus, patients with breast cancer undergoing chemotherapy need to regulate their emotions and deal with suffering using self-compassion.

Self-compassion involves the capacity of individuals to accept that life events are a part of the larger human experience, to be happy and kind to themselves in the face of pain rather than being critical of themselves, and to pay close attention to and acknowledge unpleasant feelings (Neff, 2003). Self-compassion comprises three main elements: a) self-kindness, i.e., understanding and having empathy with oneself; b) common humanity, i.e., acknowledging one's personal experiences as a part of the larger human experience; and c) mindfulness as being conscious of negative thoughts and feelings (Neff, 2003).

Individuals with greater self-compassion are less affected by illnesses as they can manage stressful situations better and have the emotional resilience to bounce back from adversity (Neff, 2023). In the cancer context, self-compassion is linked to lower depression and anxiety and higher health-related quality of life (Fan et al., 2023). Unfortunately, breast cancer patients have suboptimal self-compassion (Kaplan et al., 2023). This suggests the necessity to improve self-compassion, achievable through an enhanced understanding of this concept.

With its basis in Buddhist psychology (Neff, 2023), self-compassion can be understood using a Buddhist doctrine. The Four Noble Truths describes the essence of human existence by illuminating the nature and potential for humans to shift from misery to emancipation (Payutto, 2017). Dukkha, the first noble truth, acknowledges the existence of suffering. Samudaya, the second noble truth, reveals the root of Dukkha. Nirodha, the third noble truth, denotes the cessation of suffering. Magga, the fourth noble truth, outlines how to terminate Dukkha (Payutto, 2012). Thus, from this perspective, self-compassion can be regarded as the end of suffering (Nirodha), a happy and peaceful state of mind without hatred or anger. It can be impeded by Samudaya, which involves cravings and lust, which give rise to suffering, and, at the same time, can be supported by Magga, which facilitates the way to end suffering.

In the literature specific to female cancer patients, some of whom were breast cancer patients undergoing chemotherapy, factors negatively associated with self-compassion were self-critical judgment (Pinto Gouveia et al., 2014), body image (Todorov et al., 2019), stress (Abdollahi et al., 2020), and attachment style (Arambasic et al., 2019) whereas social support (Masoumi et al., 2022), hope (Todorov et al., 2019; Umphrey & Sherblom, 2014), and self-reassuring (Gilbert et al., 2017) were positively associated with self-compassion.

Through the Four Noble Truths framework, self-critical judgment, body image, stress, and attachment style can be seen as Samudaya that causes Dukkha or suffering. Self-critical judgment represents counterproductive thoughts that elicit unpleasant feelings (Gilbert & Irons, 2004). People have different desires, which lead them to become judgmental of themselves (Cerase, 2014). Body image, defined as a personal assessment of one's physical appearance that can cause self-doubt (Hopwood et al., 2001), induces people to search for pleasant things to satisfy their needs because of their sense of "self." Anger or unhappiness arises when this need is unsatisfied (Yun, 2014). Stress, defined as opinions on life occurrences that are unpredictable, stressful, and cannot be controlled (Cohen et al., 1983), can bring about suffering and hinder a self-compassionate mindset.

Moreover, attachment style is a strong emotional connection between two people (Ainsworth, 1982). All suffering is rooted in cravings, attachment, or passionate clinging (Gunaratna, 2008). People who are attached may experience increased desires and attachment anxiety, which keeps them from feeling content and pleased (Davarinejad et al., 2022).

Meanwhile, self-compassion can be facilitated by social support, hope, and self-reassuring, as the paths to end suffering (Magga) based on the Four Noble Truths. Social support, described as the perceived emotional, appraisal, informational, and instrumental assistance (Zimet et al., 1988), provides valuable resources to deal with suffering, allowing patients to become conscious of negative feelings and learn to endure suffering to find happiness despite difficult life circumstances (Masoumi et al., 2022). Hope is a system of the mind that helps accomplish goals (Snyder et al., 1991). It enables people to continue acting in a way that helps them cope with adversity by keeping a healthy emotional awareness and believing that they are supported and valued (Güner & Öztürk, 2023). Self-reassuring is the ability to be supportive toward oneself when confronting challenges (Gilbert & Irons, 2004), enabling individuals to maintain a positive outlook that can overcome suffering (Payogo et al., 2018).

However, the above factors have been studied mostly in the Western context and in mixed types of cancer, whose findings may not be thoroughly applicable to patients with breast cancer undergoing chemotherapy who may have different experiences from those with other types of cancer or those who do not undergo chemotherapy.

Thus, our study aimed to describe the self-compassion level and examine the predictive ability of self-critical judgment, body image, stress, attachment style, social support, hope, and self-reassuring on self-compassion among patients with breast cancer undergoing chemotherapy. Our hypothesized model is displayed in **Figure 1.**

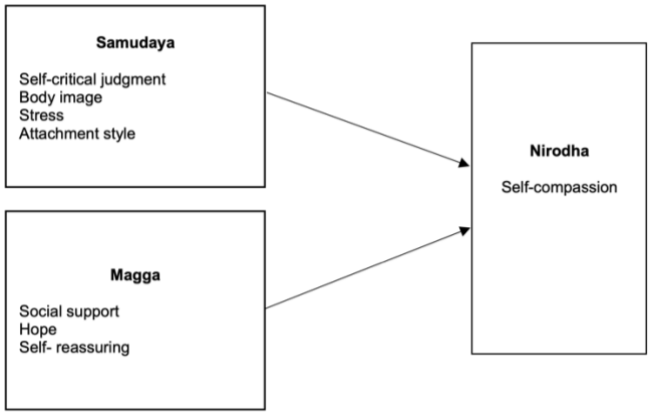

Figure 1 The hypothesized model

Methods

Study Design

This study employed a cross-sectional study design and followed the STROBE guidelines.

Samples/Participants

Based on hierarchical regression analysis, we calculated the sample size using a 30:1 subject-to-predictor ratio (Hair et al., 2014). As there were seven predictors, the sample size was 210 patients with breast cancer undergoing chemotherapy. Three hospitals in northern Thailand, including their female medical department, surgical department, medical department, and chemotherapy department, served as the settings. Participant selection was performed using proportionate sampling following the eligibility criteria: age 18 -59 years; Buddhist; and can communicate in the Thai language. Those with recurrent or metastatic breast cancer and receiving concurrent radiotherapy were excluded.

Instruments

We used nine instruments for data collection. All instruments were used with permission from the developers.

1. The Demographic Data Record Form, which was created by the research team.

2. The Self-Compassion Scale (SCS) was utilized to measure self-compassion. It was translated by Boonsrangsom (2013) into a Thai version from the original scale by Neff (2003). It contains 26 items in positive subscales (self-kindness, common humanity, and mindfulness) and negative subscales (self-judgment, isolation, and over-identification). Each item is rated using a 5-point Likert scale, where 1 means “not at all like me” and 5 means “like me very much.” The negative subscales are reverse-scored so that the total score reflects a relative lack of negative self-responding (Neff, 2023). Each subscale’s mean is calculated to obtain the entire mean. The possible total score is between 1.00 and 5.00. Higher mean scores indicate a stronger degree of self-compassion. The overall mean can be interpreted as low (1.00-2.50), moderate (2.50-3.50), and strong (3.50-5.00) self-compassion (Neff, 2023). Cronbach’s alpha was 0.97 in a pilot test (n = 20).

3. The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess social support. It was translated into Thai and revised by Wongpakaran and Wongpakaran (2012a) from the original tool (Zimet et al., 1988). It has 12 items in three four-item dimensions: social support from family, friends, and significant people. Items are rated using a 7-point Likert scale, where 1 represents very strongly disagree, and 7 represents very strongly agree. Total score is between 12 and 84; greater mean scores mean greater social support. Cronbach’s alpha was 0.85 in a pilot test (n = 20).

4. The State Hope Scale (SHS), translated into Thai by Maturapodpong (2012) from the original scale (Snyder et al., 1991), was used to measure hope. It has 12 items in two subscales: agency (confidence to start and maintain actions) (6 items) and pathway (confidence to create routes) (6 items). Every item has a 5-point Likert scale rating from 1 (definitely false) to 5 (definitely true). Total scores can range from 12 to 60, and higher scores reflect higher hope. Cronbach’s alpha was 0.95 in a pilot test (n = 20).

5. The Self-Reassuring subscale of the Forms of Self-Criticism/Self-Reassuring Scale (FSCRS), created by Gilbert and Irons (2004), was adopted to assess self-reassuring. We employed the back-translation approach (Beaton et al., 2000) to translate it into Thai. It has eight positive items scored using a 5-point Likert scale, where 0 means “not at all like me” and 4 means “remarkably like me.” The overall score can range from 0 to 32. A higher mean score denotes greater self-reassuring. Cronbach’s alpha was 0.80 in a pilot test (n = 20).

6. The Self-Criticism subscale of the FSCRS was employed to assess self-critical judgment. We used the back-translation approach (Beaton et al., 2000) to translate it into Thai. It has 14 negative items scored using a 5-point Likert scale, where 0 means “not at all like me” and 4 means “remarkably like me.” The range of possible scores is 0 to 56. A higher score indicates stronger self-critical judgment. Cronbach’s alpha was 0.98 in a pilot test (n = 20).

7. The Perceived Body Image Scale (BIS), translated into Thai by Songtish (2011) from the original tool (Hopwood et al., 2001), was used to assess body image. It has ten items rated using a 4-point Likert scale, where 0 means “not at all” and 3 means “very much.” Total scores have a possible range of 0 to 30. A higher score indicates a lower body image. Cronbach’s alpha was 0.98 in a pilot test (n = 20).

8. The Perceived Stress Scale (PSS), translated into Thai by Wongpakaran and Wongpakaran (2010) from the original tool (Cohen et al., 1983), was adopted to evaluate stress. It has ten items, of which four are positive, and six are negative items, assessed using a 5-point Likert scale, where 0 represents never, and 4 represents very often. To determine the scale scores, all six negative items are reverse scored and added together. A total score spans from 0 to 40. A higher mean score denotes higher stress. Cronbach’s alpha was 0.98 in a pilot test (n = 20).

9. The Experiences in Close Relationships-Revised Scale (ECR-R), translated into Thai and revised by Wongpakaran and Wongpakaran (2012b) from the original instrument (Fraley et al., 2000), was employed to evaluate attachment style. It has 18 items in two subscales: avoidance subscale (9 items) and anxiety subscale (9 items). Every item has a seven-point Likert scale assigned to it, with 1 denoting “strongly disagree” and 7 denoting “strongly agree.” Eight negative items are reverse-scored. Total scores can range from 18 to 126, with higher scores reflecting a higher attachment style. Cronbach’s alpha was 0.97 in a pilot test (n = 20).

The content validity of the Self-Reassuring subscale and the Self-Criticism subscale of the FSCRS was investigated by a panel of six experts—two physicians in breast cancer, two advanced practice nurses, and two nursing researchers. The item-level content validity index (I-CVI) was 0.96, and the scale-level CVI (S-CVI) was 0.84 for each instrument.

Data Collection

Data collection took place from December 2021 to January 2023. For participant recruitment and data collection, we recruited and trained three research assistants (RAs) who were registered nurses in the in-patient department and had experience in breast cancer care for at least two years. All in-patients with breast cancer had their medical records screened by the first author and the RAs, who then purposefully selected participants using the inclusion criteria. The questionnaires

were administered in sets with a 10-minute break between sets to prevent exhaustion, and the total completion time ranged from 60 to 90 minutes.

Data Analysis

The accuracy and completeness of all the data were checked. There were no missing data, but two outliers were identified. After removing the outliers, 208 cases remained for further investigation. We analyzed demographic variables with descriptive statistics. Pearson's correlation coefficient was employed to analyze the relationships between the independent and dependent variables. The level of relationship was interpreted as very low (r = 0.01-.20), low (r = 0.21 - 0.40), moderate (r = 0.41 - 0.60), high (r = 0.61 - 0.80), and very high (r = 0.81 - 1.00) (Wiersma & Jurs, 2009). The predictive model was analyzed using hierarchical regression analysis using the enter method. There were no violations of hierarchical regression analysis assumptions.

Ethical Consideration

This study was approved by the Research Ethics Committee of the Faculty of Nursing, Chiang Mai University (Study Code: 2564-EXP091). The research procedures followed Belmont Report's three basic ethical principles (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). Each participant signed a consent form after receiving a thorough explanation of the study's contents. They received 100 THB (2.76 USD) for their participation.

Results

Characteristics of the Participants

The participants' mean age was 50.26 years (SD = 7.63). All of them were Buddhists (100%). They were married (64.90%), primary school graduates (37.98%), and worked as merchants (22.60%), earning an average monthly income of 19,984.98 THB (550.98 USD). The mean duration from breast cancer diagnosis was 31.84 months. Participants had Stage II (45.67%), Stage I (27.88%), and Stage III (26.44%) breast cancer, mainly treated with a chemotherapy regimen using CMF (48.60%) and FAC (44.20%), requiring two days (36.54%) and one day (36.54%) of hospitalization during chemotherapy. Common side effects from chemotherapy included discomfort (32.69%), depression (41.83%), and anxiety (28.37%) (**Table 1**).

Table 1 Participants' characteristics (n = 208)

Characteristics	Frequency	Percentage
Age (years)		
Mean = 50.26, SD = 7.63, Range 18-59 years		
15-29	4	2.00
30-39	14	7.00
40-49	63	30.00
50-59	127	61.00
Marital status		
Single	35	16.83
Married	135	64.90
Divorced	13	6.25
Separated	25	12.02
Education		
No formal education	5	2.40
Primary school	79	37.98
Secondary school	59	28.37
Diploma	27	12.98
Bachelor's degree and higher	38	18.27
Occupation		
Unemployed	38	18.27
Government officer	19	9.13
Office workers	21	10.09
Laborer	9	4.33
Merchant	47	22.60
Farmer	31	14.90
Own business	43	20.68
Religion		
Buddhism	208	100
Monthly income (THB)		
≤ 10,000 (275.71 USD)	98	47.12
10,001-30,000 (275.72-827.13 USD)	80	38.46
30,001-60,000 (827.16-1,654.26 USD)	25	12.02
> 60,000 (1,654.29 USD)	5	2.40
Time since cancer diagnosis (months)		
Mean = 31.84, SD=24.15		
1-12	55	26.44
13-24	28	13.46
25-36	12	5.77
37-48	53	25.48
49-60	60	28.85

Table 1 *(Cont.)*

TNM staging of cancer		
I	58	27.88
II	95	45.67
III	55	26.44
Treatments in chemotherapy regimens		
CMF	101	48.60
FAC	92	44.20
FEC	9	4.33
AC	4	1.92
Other (e.g., EC, TC)	2	0.96
Length of hospital stay during chemotherapy (days)		
0	56	26.92
1	76	36.54
2	76	36.54
Chemotherapy side effects		
1. Physical		
1.1 Fatigue	45	21.63
1.2 Discomfort	68	32.69
1.3 Nausea	47	22.60
1.4 Dizziness	37	17.79
1.5 Other	11	5.29
2. Psychological		
2.1 Depression	87	41.83
2.2 Anxiety	59	28.37
2.3 Stress	23	11.06
2.4 Fear	1	0.48
2.5 Uncertainty	10	4.80
2.6 Other	28	13.46

Notes: AC: Doxorubicin+Cyclophosphamide, CMF: cyclophosphamide+methrotrexate+5-FU, EC: Epirubicin+ Cytoxan, FAC: 5-Fluorouraci+Adrimycin+Cyclophosphamide, FEC: 5FU+Epirubicin+Cyclophosphamide, TC: Paclitaxel (Taxol) or docetaxel (Taxotere)

Description of the Variables

Table 2 describes the descriptive data on self-compassion, self-critical judgment, body image, stress, attachment style, social support, hope, and self-reassuring.

The Level of Self-Compassion

Overall self-compassion and its subscales— self-kindness, common humanity, and mindfulness were all at a moderate level (Table 3).

Table 2 Range, mean, standard deviation of the variables (n = 208)

Variables	Actual Score	Mean	SD
Self-compassion	26-130	76.00	23.65
Self-critical judgment	0-56	19.39	15.60
Body image	0-30	24.69	13.51
Stress	0-40	18.95	11.24
Attachment style	18-126	73.21	40.00
Social support	12-84	66.66	13.63
Hope	12-60	45.48	12.33
Self-reassuring	0-32	25.97	6.80

Table 3 Levels of overall self-compassion and its subscales

Dimension	Mean	SD	Level
Overall self-compassion	2.91	0.91	Moderate
Subscales			
Self-kindness	2.63	1.38	Moderate
Common humanity	2.77	1.39	Moderate
Mindfulness	2.70	1.36	Moderate

The Relationship between Independent Variables and Self-Compassion

Self-critical judgment and stress had significantly moderate positive relationships with self-compassion. Body image and attachment style had significantly low positive relationships with self-compassion. Social support, hope, and self-reassuring did not correlate significantly with self-compassion (Table 4).

The Predictive Ability of Independent Variables on Self-Compassion

Using the enter method, the sets of independent variables, which consisted of 1) Dukkha, 2) Samudaya (self-critical judgment, body image, stress, and attachment style), and 3) Magga (social support, hope, and self-reassuring), were imported into the model sequentially based on the Four Noble Truths. Self-critical judgment, body image, stress, and attachment style were entered in the first step. Self-critical

judgment (β =.476, *p* <0.05) predicted self-compassion, accounting for 38.5% of its variance.

In the second step, self-critical judgment, body image, stress, attachment style, social support, hope, and self-reassuring were entered into the model. In model 2, self-critical judgment and hope predicted self-compassion, accounting for 40.1% of its variance (**Table 5**).

Table 6 shows that the self-critical judgment (β = 0.487, *p* <0.001) and hope (β = 0.128, *p* = 0. 032) were significant predictors of self-compassion among patients with breast cancer undergoing chemotherapy.

Table 4 Relationship between independent variables and self-compassion (*n* = 208)

Variables	1	2	3	4	5	6	7	8
1. Self-compassion	1	0.585**	0.301**	0.442**	0.143*	-0.134	0.133	-0.032
2. Self-critical judgement		1	0.293**	0.481**	0.098	-0.251	-0.028	-0.118
3. Body image			1	0.488**	0.046	-0.165*	-0.070	-0.167*
4. Stress				1	0.146*	-0.207**	0.119	-0.031
5. Attachment style					1	0.107	0.229**	0.169*
6. Social support						1	0.229**	0.120
7. Hope							1	0.502**
8. Self-reassuring								1

*Notes: * p* <0.05, ** *p* <0.01

Table 5 Hierarchical regression results for factors predicting self-compassion (*n* = 208)

Predictive variables	R^2	R^2 change	SEE	F change	B	Beta	*t*
Model 1	0.385	0.373	18.73114	31.748	49.101		13.368
Self-critical judgment					0.722	0.476	7.557**
Body image					0.135	0.077	1.219
Stress					0.349	0.166	2.389*
Attachment style					0.040	0.068	1.226
Model 2	0.633	0.401	18.62881	19.089	40.933		4.417
Self-critical judgment					0.738	0.487	7.605**
Body image					0.162	0.093	1.451
Stress					0.291	0.138	1.957
Attachment style					0.026	0.043	0.758
Social support					-0.002	0.103	-0.016
Hope					0.276	0.128	2.166*
Self-reassuring					-0.120	0.224	-0.534

Notes: p <0.05*, *p* <0.01**

Table 6 Predicting factors of self-compassion (*n* = 208)

Variables	B	SE	Beta	*t*	*p*-value
(Constant)	40.933	9.267		4.417	0.000
Self-critical judgment	0.738	0.097	0.487	7.605	0.000**
Body image	0.162	0.112	0.093	1.451	0.148
Stress	0.291	0.149	0.138	1.957	0.052
Attachment style	0.026	0.034	0.043	0.758	0.449
Social support	-0.002	0.103	-0.001	-0.016	0.987
Hope	0.276	0.128	0.128	2.166	0.032*
Self-reassuring	-0.120	0.224	-0.034	-0.534	0.594
$R = 0.633$, $R^2 = 0.401$, SEE = 18.62881, $F_{(7,200)} = 19.089$, Sig of F = 0.000					

*Notes: * p* <0.05, ***p* <0.01

Discussion

To the best of our knowledge, this is the first study to investigate the predicting factors of self-compassion among patients with breast cancer undergoing chemotherapy using the Buddhist perspective. Our finding adds to the existing knowledge of self-compassion in the Buddhist context, which is the first step to encouraging more exploration of self-compassion and guiding nursing interventions to apply Buddhist views to holistically promote self-compassion and the psychosocial well-being of patients with breast cancer.

The overall self-compassion and its three dimensions were moderate. The findings aligned with those of another study in mixed cancer patients receiving chemotherapy (Madmoli et al., 2019) and research in the breast cancer population (Zhu et al., 2023). From the Buddhist perspective, uncomfortable and painful experiences are a normal aspect of being human and should be accepted rather than resisted. Consistently, being self-compassionate means facing one's pain and accepting it with kindness and connectedness (Neff, 2023). Therefore, it changes suffering to improve resilience, well-being, and the ability to handle challenging ideas and feelings. For Buddhists, they try to identify the sources of suffering since it may result in the cessation of suffering (Payutto, 2017). Thus, self-compassion is necessary for patients to cope with suffering as it helps regulate their negative emotions.

Nevertheless, the study's moderate, rather than high, degree of self-compassion might be explained by the

significant effects that breast cancer can have on a woman's mental and physical well-being. Our participants had depression (41.83%) and anxiety (28.37%) that possibly affected their capacity to treat themselves with kindness, understanding, and support. Likewise, depression and anxiety negatively affect self-compassion among breast cancer patients (Yousefi Afrashteh & Masoumi, 2021). Thus, rather than focusing only on cancer treatments, nursing care should be shifted to prioritize patients' psychosocial aspects and emotional needs, such as providing psychotherapy to promote self-compassion (Neff, 2023).

Our study revealed that self-critical judgment was the strongest predicting factor of self-compassion, which supported the hypothesis. In Buddhist beliefs, desire, which comes in various forms, including the desire to be healthy, is the root of all suffering (Cerase, 2014), making people self-critical. People who are critical of themselves often experience humiliation, remorse, failure, and unworthiness. They evaluate and criticize themselves drastically and continuously (Hölling, 2020), thereby unlikely to be self-compassionate. This finding is of particular importance for cancer patients as they tend to be self-critical about lifestyles and treatment choices, feeling guilty about their altered physical appearance and being unable to perform their prior social duties (Austin et al., 2021). Nursing interventions should encourage patients to become more understanding and non-judgmental toward their suffering. Nurses should be trained to employ approaches to decrease the tendency toward self-judgment among breast cancer patients, such as compassion-focused therapy (Grégoire et al., 2024; Neff, 2023).

Hope significantly predicted self-compassion, which supported the research hypothesis. Buddhism holds that hope enables people to confront suffering by letting go of the desire to change anything that has happened and embracing all that occurs in their lives (Gauthier, 2016). Therefore, hope enables people to consider adversity a natural aspect of being human and treat themselves with kindness. Hopeful cancer patients are motivated to re-evaluate their circumstances, ambitions, and self. Hope contributes to positive self-perception by fostering optimistic attitudes toward healing and increasing positive thoughts (Hsu et al., 2021) that lead to self-compassion. The finding was consistent with previous studies that state that hope is related to self-compassion (Todorov et al., 2019; Umphrey & Sherblom, 2014).

Stress was not a significant predictor of self-compassion, indicating that the hypothesis was not supported. Only 11% of our participants mentioned feeling stressed from chemotherapy. Furthermore, they had been living with breast cancer for an average of 31.84 months, and 65.20% of them were married. Perhaps they could share their feeling with their husband and be able to adjust to life with cancer. As a result, life with breast cancer might not be too stressful to activate self-compassion. Congruently, marital status and time since cancer diagnosis impacted breast cancer patients' stress (Kelkil et al., 2022). Our finding contradicted research on patients with breast cancer in Iran (Abdollahi et al., 2020). Interestingly, since all of our participants were Buddhist, they might apply Buddhist approaches to deal with stress. Buddhist breast cancer patients resorted to religious support to relieve discomfort from chemotherapy, such as by praying, attending religious rituals, and practicing dharma (Phongnopakoon et al., 2023). This implies the potential of Buddhist approaches to help cancer patients cope with stress during chemotherapy.

Contradicting the hypothesis, body image did not exert a significant predictive ability on self-compassion. Our participants did not experience hair loss highly related to body image (Alhusban, 2019). In our study, CMF (48.10%) and FAC (43.80%) were the most common chemotherapy regimen types. These treatments typically have low blood counts, mouth sores, nausea and vomiting, and reduced appetite as their main adverse effects (Anand et al., 2023). Our finding contradicts a study in female cancer patients in Australia (Todorov et al., 2019) but aligns with a study in people with endometriosis where body image was not significantly related to self-compassion (Sullivan Myers et al., 2023). It is noteworthy that Buddhist breast cancer patients in Thailand had no issues related to body image changes (Chiaranai et al., 2022). This leaves significant room for further exploration of body image among cancer patients across different contexts.

Self-reassuring and attachment style did not significantly predict self-compassion. The finding contradicted a study on clinical patients (Gilbert et al., 2017) but was congruent with research in the general population (Murray et al., 2021). Our participants' anxiety (28.37%) and depression (41.83%) may have impacted their capacity for self-reassuring as these conditions made cancer patients feel hopeless and unable to stay positive toward themselves (Thasaneesuwan & Nilmanat, 2019). Moreover, anxiety reduces the capacity to trust attachment figures and to maintain close relationships with them (Manning et al., 2017). This possibly results in the absence of predicting the ability of self-reassuring and attachment style on self-compassion.

Social support was not significantly predictive of self-compassion. According to the Four Noble Truths, the way to end suffering usually involves determining the strategies to effectively address the root of troubles (Payutto, 2017). Nevertheless, rather than addressing the underlying cause of suffering, the social support our participants obtained was mostly directed toward encouragement. For Buddhist breast cancer patients, holding onto life causes suffering, and they appreciate the support that helps them understand the nature of life and death, which leads to peace of mind (Chiaranai et al., 2022). Therefore, besides obtaining psychological strength to continue the fight against cancer, patients should be encouraged to accept the diagnosis and learn to live with the disease peacefully.

Limitations

Due to a cross-sectional design that simultaneously assessed the exposure and outcomes, the explanations of the relationship among the studied variables might be limited. The concept of self-compassion was initially created in Western societies, which may require a cultural-based way of thinking. Our study was done in patients with breast cancer undergoing chemotherapy, so generalizability to other types of cancer is limited. The scope is restricted to the viewpoints of Buddhist patients, which may vary from those of patients from different religions.

Implications and Recommendations

Our findings shed light on the level of self-compassion among patients with breast cancer, which points to the need to

promote it. The findings can guide the development of nursing interventions to increase self-compassion by addressing self-critical judgment and increasing hopeful thinking among breast cancer patients. Nurses can offer counseling sessions to enhance patients' understanding that sickness is a part of human existence, reduce negative thoughts towards themselves, and cultivate positive outlooks on life. Importantly, interventions should be tailored to the patient's belief system and religious background, as it can significantly influence their perception. Further studies may investigate predictors of self-compassion among cancer patients in different stages of cancer and test a causal relationship of factors related to self-compassion in various cultural contexts.

Conclusion

This study highlights the significance of self-critical judgment and hope as predictors of self-compassion in patients with breast cancer undergoing chemotherapy, particularly within a Buddhist context. By integrating Buddhist perspectives on suffering and compassion, the findings offer valuable insights for developing nursing interventions to enhance self-compassion and psychosocial well-being among these patients. Despite moderate levels of self-compassion, the study emphasizes the need for targeted strategies to reduce self-criticism and foster hope, potentially through compassion-focused therapy. Additionally, the cultural and religious contexts of patients should be considered when designing interventions to ensure their effectiveness. Future research should explore these predictors across different cancer types and cultural settings to validate these results.

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Authors' Contributions

Each of the authors made a significant contribution to the conceptualization and design, as well as data collection and analysis. All authors contributed to the writing of the manuscript and approved the final draft.

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of Use of AI in Scientific Writing

The study did not use generative AI in the writing process of this article.

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