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Original Article

The Relationship between Emotion Regulation and Fear of Relapse with the Level of Acceptance of Cancer in Women after Mastectomy

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Abstract

Objective of the study: Breast cancer is the most frequently diagnosed malignancy among women in Poland, and it also significantly impacts their psychological functioning. This article aims to examine the relationships between selected emotion regulation strategies, fear of disease recurrence, and the level of acceptance of the illness in women after mastectomy. Method: The study involved 150 Polish women after mastectomy, aged 22 to 73 ($M = 44.67$, $SD = 8.11$), and was conducted using an electronic questionnaire. A set of standardized psychometric tools was used in the study: the Interpersonal Emotion Regulation Questionnaire (IERQ), the Cancer Worry Scale (CWS), and the Acceptance of Life with Illness Scale (ALS) to measure emotion regulation, fear of disease recurrence, and the level of acceptance of illness. Statistical analyses included Pearson's r correlation, stepwise regression, and cluster analysis. Results: The results showed that social modeling demonstrated a positive association with acceptance of illness, but smoothing, contrary to assumptions, was negatively associated with coming to terms with the illness. Fear of relapse showed a significantly negative correlation with satisfaction with life despite the disease. Fear of relapse is the most important negative predictor of acceptance of illness – it reduces satisfaction with life despite illness, and distancing oneself from the disease. Social modeling is a positive predictor of acceptance of disease, but soothing, although seemingly adaptive, was associated with lower levels of acceptance of illness – likely a manifestation of emotional withdrawal. Conclusion: The study's results confirm that the process of psychological adaptation to the disease is not one-dimensional but depends on many factors – both individual and environmental. At the same time, they provide important information that may be helpful in disease acceptance among women after mastectomy.

Keywords: mastectomy, emotion regulation, fear of relapse, disease acceptance, women

Breast cancer is the most frequently diagnosed malignancy in women in Poland and one of the leading causes of cancer-related deaths (Wojciechowska et al., 2020). Mastectomy, the primary treatment method, in addition to its undoubted medical benefits, also entails psychological consequences. These include, among others, lower self-esteem, a sense of loss of femininity, and increased anxiety (Rocławska, 2015). In this context, analyzing the psychological mechanisms that facilitate adaptation to life after cancer is particularly important.

Emotion regulation is defined as the process of modifying the intensity, duration, and expression of emotions, encompassing both conscious and automatic strategies (Thompson, 2019). The ability to use constructive regulatory strategies, such as cognitive reinterpretation, enhancing positive affect, and social modeling, promotes effective adaptation. Strategies based on rumination and catastrophizing are associated with increased distress and difficulty in adjustment (Kulpa et al., 2017). Fear of cancer recurrence (FCR) is defined as persistent concerns about the possibility of cancer return or progression, which may lead to increased distress, avoidance, and reduced quality of life (Lebel et al., 2013; Simard et al., 2013). Illness acceptance, in turn, is an important dimension of adaptation, encompassing the ability to maintain life satisfaction, come to terms with the consequences of the disease, and distance oneself from them (Janowski & Steuden, 2012).

Literature review

A study by Kulpa et al. (2017), which examined 112 patients aged 19–78 years, using the Cognitive Emotion Regulation Questionnaire (CERQ) and the Mini-Mastery of Cancer Adjustment Scale (MINI-MAC), found that patients were characterized by lower levels of anxiety and a higher fighting spirit, suggesting good adaptation to the disease. Patients were found to use adaptive strategies more frequently, such as acceptance and focusing on the positive, which correlated with a positive attitude toward the disease.

Statistically significant correlations were identified between emotion regulation strategies and attitudes toward the disease. For example, positive reappraisal was associated with fighting spirit, while rumination and catastrophizing increased anxiety levels. The results suggest that the psychological support patients received during treatment may have supported their positive adaptation to the disease.

Another example of the link between emotion regulation and illness acceptance is the study by Basińska and Woźniewicz (2012). The study was conducted in a group of people with psoriasis. In this case, emotion regulation was included in the variable of emotional intelligence, one of its components, alongside the ability to appropriately perceive, evaluate, and express emotions, the ability to access

feelings, and the ability to generate them in difficult moments. In the group of 81 psoriasis patients, the average level of emotional intelligence (EI) varied considerably, but no significant differences in EI were found between women and men or between older and younger patients. However, it was noted that individuals with longer disease duration had higher EI levels. The study indicated a significant relationship between one of the components of EI – the ability to use emotions in thinking and acting – and higher acceptance of the disease.

People who were better at managing their emotions found it easier to accept their illness. It's worth noting that this relationship was stronger among women and older adults. For younger patients and men, the relationship was not significant. Analyses that took into account patient health status (e.g., duration of illness, symptom severity) showed that those with milder illnesses and longer illness durations, who were able to use emotions in daily life, had better acceptance of their illness. However, for patients with more severe symptoms, the role of emotional intelligence in illness acceptance was less significant. The study shows that emotional intelligence, particularly the ability to use emotions in thought and action, can support patients in accepting their illness, especially in women and older adults (Basińska & Woźniewicz, 2012).

Interesting results were obtained from studies on anxiety levels, illness acceptance, and stress coping strategies among patients seeking balance after being diagnosed with a serious gynecological condition (Dryhinicz & Rzepa, 2018). Cancer patients had higher levels of both state and trait anxiety compared to non-cancer patients. This indicates that cancer and its treatment induce more intense anxiety, which intensifies the experience of symptoms and complicates adaptation to the situation. Anxiety in cancer patients may stem from uncertainty about the future, treatment, and prognosis. Cancer patients had lower levels of disease acceptance than non-cancer patients. Over time, this level of acceptance may increase, particularly after the stage of adaptation to the disease. Younger cancer patients were more willing to accept their disease than older patients. Age and stage of disease were also found to influence these variables, suggesting the need for an individualized approach to patient care. Anxiety and low levels of disease acceptance negatively impact the treatment process, so psychological support and adaptive coping strategies should be an integral part of therapy.

Rumination, or persistent, usually negative thoughts about past events or potential future problems, has a significant impact on emotion regulation. The phenomenon is particularly significant in patients with chronic illnesses, such as cancer, and in those who have undergone major surgery, where such emotions can exacerbate anxiety, stress, depressive symptoms, and other psychological difficulties. The importance of rumination in the context of emotion regulation and illness acceptance was highlighted in Załuski's (2016) study. The author analyzed rumination levels in three

groups of patients: those hospitalized after neurological episodes, those undergoing cancer treatment, and those who had undergone major surgery. The results indicate that individuals in the oncology and surgical groups exhibited significantly higher levels of rumination than neurological patients. Furthermore, higher levels of illness acceptance were associated with lower levels of rumination, while more intense ruminations were often accompanied by higher levels of self-reported personal growth.

The results obtained by Dziukiewicz (2020) demonstrated a correlation between psychological functioning in women after mastectomy and the perceived impact of cancer on their lives. The study identified various difficulties women experience after a mastectomy. The most common concerns were loss of femininity, sexual attractiveness, and self-esteem related to mastectomy. Furthermore, lymphedema and postoperative pain also triggered fear and uncertainty. Among the actual difficulties identified by respondents, the most common were: limited physical fitness – 18.6% of women indicated difficulty performing daily activities, such as carrying groceries or suitcases, which led to a sense of dependence on others. Treatment-related difficulties – chemotherapy, radiotherapy, and related side effects (fatigue, nausea, dry skin) were also significant challenges. Body acceptance after surgery – 16.28% of respondents considered self-acceptance and body acceptance a significant challenge. The study indicates that every woman experienced some form of life change after a breast cancer diagnosis and mastectomy. Furthermore, it was shown that although women who had a mastectomy experience many challenges related to treatment, body acceptance, and adapting to their new situation, many can shift their life perspective to a more positive one. Nevertheless, fear of recurrence remains common, which can impact their sense of security and ability to fully accept their new reality.

In the study by Krok-Schoen and colleagues (2018), the aim was to assess the prevalence of factors associated with fear of disease recurrence in older women who had survived breast, colon, endometrial, or ovarian cancer. The results indicated that 16% of participants experienced high levels of fear of disease recurrence. Factors that significantly increased the risk of increased fear of disease recurrence included younger age at diagnosis, receiving chemotherapy, higher levels of physical and psychological symptoms, and poorer subjective health assessment. Cancer type did not significantly influence its level, suggesting that fear of recurrence is a common phenomenon across various groups of cancer patients, regardless of the type of cancer.

From the perspective of emotion regulation and fear of disease recurrence, the results of the study by Krok and colleagues (Krok et al., 2024) are significant, emphasizing the role of psychological flexibility and self-esteem as psychological resources supporting the adaptation process after cancer treatment. A study conducted among 304 cancer survivors demonstrated that higher psychological flexibility was associated with lower levels of fear of disease recurrence and more

effective meaning-making of illness experiences. Importantly, from the perspective of emotion regulation, it was fear of recurrence that mediated the intensity of overall pain, including emotional and spiritual pain. Cognitive processes, such as meaning-making, and emotional processes, such as anxiety, clearly align with our understanding of the psychological mechanisms of adaptation in cancer patients. These results indicate that in working with cancer survivors, including women who have undergone mastectomy, it is crucial to strengthen resources that facilitate flexible processing of experiences and to limit the destructive impact of fear of disease recurrence.

In a subsequent study by Krok and colleagues (Krok et al., 2024), focusing directly on women with breast cancer, the impact of social support (both perceived and received) on disease acceptance was analyzed, taking into account the mediating role of meaning-making and fear of recurrence. A cross-sectional study of 246 patients after chemotherapy or radiotherapy demonstrated that higher levels of social support were positively associated with greater disease acceptance and lower levels of fear of recurrence. The process of meaning-making played a key role in this mechanism – more powerful than fear itself – highlighting the importance of cognitive interpretation of the disease experience in emotion regulation and adaptation. These results are particularly relevant in the context of working with women after mastectomy, who – due to the physical, emotional, and social consequences of treatment – may be particularly vulnerable to difficulties in disease acceptance and persistent fear of recurrence. The findings from both studies support the assumption that psychological interventions aimed at enhancing psychological flexibility, reducing fear of relapse, and building meaning and significance of the disease can promote disease acceptance in women after mastectomy. Incorporating these mechanisms into therapeutic programs can significantly improve the quality of life of cancer patients and their ability to emotionally adapt.

Hypotheses

The available literature indicates that there is a lack of research among Polish women after mastectomy on the relationship between emotion regulation and fear of recurrence, and the level of cancer acceptance. Therefore, this article aims to demonstrate the relationship between these variables. Based on the above studies, the following research hypotheses were formulated.

H_1. More frequent use of interpersonal emotion regulation strategies aimed at soothing and social modeling is associated with higher levels of illness acceptance.

H_2. Strategies based on enhancing positive affect and changing perspectives will be positively associated with illness acceptance.

H_3. The level of fear of relapse will be negatively correlated with acceptance, especially in the dimension of satisfaction with life despite illness.

H_4. Fear of relapse may also co-occur with processes that promote reconciliation and distancing oneself from the disease, performing an adaptive function under certain conditions.

Method

Subjects and Study Procedure

The study was cross-sectional in nature and designed in accordance with methodological principles that facilitate replication and minimize the risk of artifacts resulting from researcher-participant interactions (Brzeziński, 1999). The sample included 150 post-mastectomy Polish women aged 22 to 73 years (M = 44.67, SD = 8.11). They were all born in Poland and live here. The time since surgery ranged from 7 days to 19 years. Participants were recruited through nationwide online Amazon communities. Participation in the study was voluntary and anonymous. All participants provided informed consent.

Research Tools

A) Emotion regulation was measured using the Interpersonal Emotion Regulation Questionnaire (IERQ) developed by Hoffman and colleagues (2016). Adaptation to Polish conditions was performed by Grzywna and her colleagues (Grzywna et al., 2020). The Polish version of the questionnaire consists of 20 items divided into four subscales: enhancing positive affect (WPR), changing perspective (ZP), soothing (UK), and social modeling (MS). The questionnaire examines four dimensions, each with five statements assigned to it, to which the respondent responds on a five-point scale, where 1 means *definitely not true* and 5 means *describes me very truthfully*. Cronbach's alpha was .86 for the entire instrument.

B) Fear of relapse was assessed using the Cancer Worry Scale (CWS) by Custers et al. (2014). The scale was adapted to Polish conditions by Krok and Telka (2022). The scale measures concerns about the possibility of cancer recurrence and the impact of these concerns on daily functioning. It can be used by both cancer survivors and patients currently undergoing cancer treatment. It is a screening tool that provides a global score (LN). The instrument consists of eight items rated on a four-point Likert scale, where 1 indicates *never*, and 4 indicates *almost always*. The obtained overall score was used in this study.

The instrument is highly reliable, as evidenced by a Cronbach's alpha coefficient of .87 (Krok et al., 2024).

C) Acceptance of life with illness was measured using the Acceptance of Life with Illness Scale (ALS) by Janowski and Steuden (2018). It consists of 20 items and covers three dimensions: satisfaction with life despite illness (SAC), coming to terms with the illness (PZC), and distancing oneself from illness (MZC). The sum of these items provides a global score (AKC). The results for each subscale and the overall score were used in this study. Acceptance of life with illness is defined as the ability to come to terms with illness and maintain overall life satisfaction despite the burdens associated with the illness. Standardization of the tool demonstrated high psychometric reliability, with Cronbach's alpha for the entire scale reaching .91.

Results

To test the hypotheses, multi-stage statistical analyses were conducted using *Statistica* software. Basic descriptive indices, such as the arithmetic mean, standard deviation, skewness, and kurtosis, were first calculated, and the results are presented in Table 1. The Shapiro-Wilk test was used, which indicated that the data distribution deviated from normality. Nevertheless, parametric tests were used because the study included 150 participants, and the skewness and kurtosis measures were within acceptable limits. In addition, correlation analysis, regression analysis, and cluster analysis were performed.

Descriptive statistics

Table 1
Descriptive statistics for research variables (N = 150)

Variable	*M*	*SD*	*Mdn*	*Sk*	*Kurt*	*S-W*	*p* <
WPR	4.05	0.71	4.20	-0.97	1.80	.92	.001
ZP	2.41	0.91	2.40	0.50	0.06	.96	.001
UK	2.45	1.04	2.30	0.52	-0.46	.95	.001
MS	3.28	0.90	3.40	-0.54	-0.31	.96	.001
LN	2.87	0.69	2.88	-0.27	-0.68	.87	.001
SAC	1.68	0.64	1.56	1.06	0.60	.91	.001
PZC	1.85	0.74	1.67	0.85	0.70	.97	.006
MZC	2.44	0.77	2.50	-0.08	-0.75	.92	.001
AKC	3.08	1.15	3.17	0.68	-0.57	.94	.001

Note. WPR = Enhancing positive affect; ZP = Changing perspective; UK = Soothing; MS = Social modeling; LN = Fear of relapse (total score); SAC = Satisfaction with life despite illness; PZC =

Coming to terms with the illness; MZC = Distancing oneself from illness; AKC = Acceptance of illness (total score).

Mdn = Median; *Sk* = Skewness; *Kurt* = Kurtosis; *S-W* = Shapiro-Wilk test.

Correlation analysis

The next step of the statistical analysis was to verify the relationships between variables. Pearson's *r* correlation was used for this purpose. The results of these correlations are presented in Tables 2 and 3.

Table 2
Correlations of research variables with respect to the age of the participants and the time elapsed since the mastectomy procedure (N = 150)

Variable	Age (years)	Time since mastectomy (years)
WPR	-.05	.01
ZP	.06	-.01
UK	-.01	-.02
MS	-.02	-.00
LN	-.01	-.00
SAC	-.05	-.02
PZC	-.09	.01
MZC	-.01	.03
AKC	-.05	.01

Note. WPR = Enhancing positive affect; ZP = Changing perspective; UK = Soothing; MS = Social modeling; LN = Fear of relapse (total score); SAC = Satisfaction with life despite illness; PZC = Coming to terms with the illness; MZC = Distancing oneself from illness; AKC = Acceptance of illness (total score).

The results presented in Table 2 do not show significant correlations between scores on any of the scales and the age of the patients studied. The correlation coefficients were close to zero, indicating no correlation between age and the variables analyzed. Similarly, no statistically significant correlations were found between the subscale scores and the time elapsed since mastectomy. The obtained correlation values also fluctuated around zero, indicating a lack of correlation between the length of the postoperative period and the level of the subscale dimensions assessed.

Table 3
Correlations between individual subscales of variables (N = 150)

Variable	WPR	ZP	UK	MS	LN	SAC	PZC	MZC	AKC
WPA	–								
ZP	.30***	–							
UK	.29***	.46***	–						
MS	.44***	.68***	.50***	–					
LN	.16*	.10	.16	.24**	–				
SAC	.10	-.02	-.12	-.09	-.42***	–			
PZC	.02	-.11	-.24**	-.14	-.60***	.81***	–		
MZC	.06	-.01	-.09	-.10	-.71***	.64***	.75***	–	
AKC	.07	-.05	-.17*	-.12	-.61***	.93***	.94***	.85***	–

Note. WPR = Enhancing positive affect; ZP = Changing perspective; UK = Soothing; MS = Social modeling; LN = Fear of relapse (total score); SAC = Satisfaction with life despite illness; PZC= Coming to terms with the illness; MZC = Distancing oneself from illness; AKC = Acceptance of illness (total score).

*$p < .05$. **$p < .01$. ***$p < .001$.

Analysis of the Pearson *r* correlation matrix revealed two groups of correlated scales. The first group consists of subscales: enhancing positive affect, changing perspective, soothing, and social modeling, which are significantly correlated with each other, ranging from low to high. The second group consists of variables concerning fear of relapse, satisfaction with life despite the illness, coming to terms with the illness, distancing oneself from the illness, and the overall score of accepting life with the illness, which are significantly correlated with each other, ranging from moderate to high. In addition to these within-group correlations, a significant ($p < .01$) negative correlation was observed at a low level between soothing and coming to terms with the illness, and a significant ($p < .05$) negative correlation at a low level between soothing and acceptance of the illness. Furthermore, fear of relapse is significantly positively correlated at a low level with enhancing positive affect and significantly positively correlated at a low level with social modeling.

Regression analysis

The next stage of statistical analysis involved stepwise regression, which allows for the identification of the most significant predictors of the dependent variable by gradually including or eliminating independent variables based on their contribution to explaining variance.

Table 4
Stepwise regression analysis for the dimension of satisfaction with life despite illness (N = 150)

Satisfaction with life despite illness: $R = .42$, $R^2 = .17$, $F(1,148) = 31.33$, $p < .001$			
	β	$t(148)$	$p <$
Fear of relapse	-.42	-5.60	.001

The results presented in Table 4, obtained using stepwise regression, indicate that fear of relapse is a statistically significant predictor of satisfaction with life despite illness. This variable explains 17% of the model's variance. The β coefficient value indicates that the lower the level of fear of relapse, the higher the level of satisfaction in the face of illness.

Table 5
Stepwise regression analysis for the dimension of accepting life despite illness (N = 150)

Accepting life despite of illness: $R = .64$, $R^2 = .41$, $F(2,147) = 33.83$, $p < .001$			
	β	$t(148)$	$p <$
Fear of relapse	-.60	-9.22	.001
Soothing	-.19	-2.91	.001

Table 5 presents a stepwise regression model for the prediction of accepting illness, which is statistically significant. Based on the obtained results, it can be concluded that fear of relapse and soothing explain 41% of the observed variability in the scale of accepting illness. Looking at the β coefficients, it can be concluded that the higher the level of fear of relapse and soothing, the lower the reconciliation with life despite the disease.

Table 6
Stepwise regression analysis for the dimension of distancing oneself from the illness (N = 150)

Distancing oneself from the illness: $R = .74$, $R^2 = .54$, $F(1, 14.78) = 87.70$, $p < .001$			
	β	$t(147)$	$p < .001$
Fear of relapse	-.75	-13.11	.001

Table 6 presents a stepwise regression model for the prediction of distancing oneself from the illness, which is significant. Variability in the fear of relapse scale explains 54% of the model's variance. The β coefficient shows that the higher the fear of relapse, the lower the index of distancing oneself from the illness.

Table 7
Stepwise regression analysis for the acceptance of illness (N = 150)

The acceptance of illness: $R = .61$, $R^2 = .38$, $F(1,148) = 89.10$, $p < .001$			
	β	$t(148)$	$p < .001$
Fear of relapse	-.61	-9.44	.001

The final stepwise regression model (Table 7) demonstrated a statistically significant prediction of the acceptance of illness. Variation in fear of relapse explained 38% of the observed variance in the score. The β coefficient value indicates that higher levels of fear of relapse predict lower overall levels of acceptance of illness.

Cluster Analysis

In the final phase of statistical analysis, it was decided to conduct cluster analysis to refine the results. Based on five factors: enhancing positive affect, changing perspective, soothing, modeling, and fear of relapse, three clusters of patients were identified, each differing significantly ($p < .001$ and $p < .01$) from the other on each of these factors (Table 8 and Table 9). The first cluster consists of individuals who demonstrate the highest scores on each of the above five factors. The third cluster consists of individuals who demonstrate the lowest scores on each of the five factors. The second cluster consists of individuals who demonstrate intermediate levels of scores on each of the five factors.

Table 8
Arithmetic mean results for the three clusters within the emotion regulation and fear of relapse subscales

Variable	Cluster I	Cluster II	Cluster III
WPR	4.32	4.22	3.50
ZP	3.07	2.55	1.48
UK	3.78	2.12	1.61
MS	3.88	3.60	2.15
LN	3.11	2.86	2.65

Note. WPR = Enhancing positive affect; ZP = Changing perspective; UK = Soothing; MS = Social modeling; LN = Fear of relapse (total score).

Table 9
Results of the analysis of variance of the F-test for the dimensions of emotion regulation and the fear of relapse scale

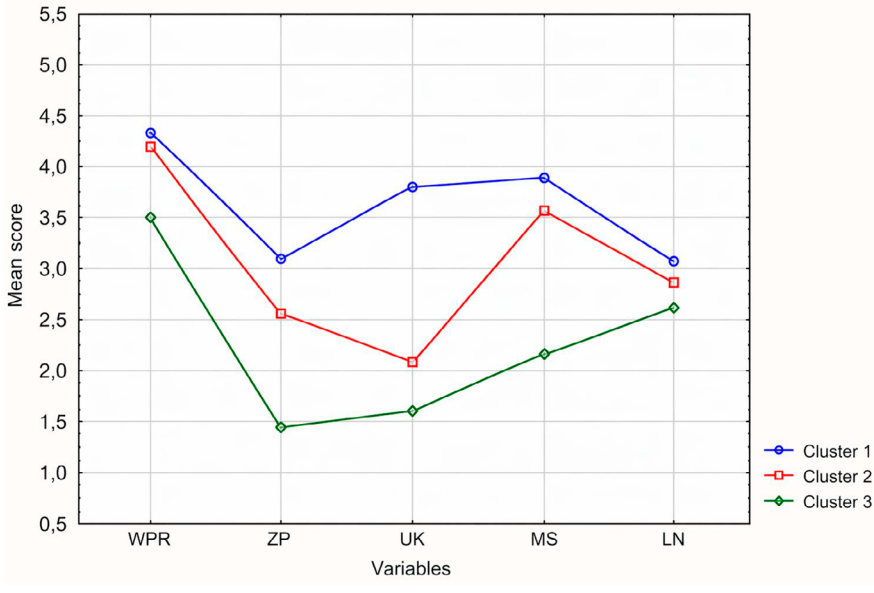
Variable	Between *SS*	*df*	Within *SS*	*df*	*F*	*p* <
WPR	17.69	2	58.45	147	22.24	.001
ZP	55.39	2	69.16	147	58.87	.001
UK	109.67	2	50.60	147	159.29	.001
MS	74.27	2	46.71	147	116.87	.001
LN	4.37	2	66.83	147	4.81	.010

Note. WPR = Enhancing positive affect; ZP = Changing perspective; UK = Soothing; MS = Social modeling; LN = Fear of relapse (total score).

A graphical presentation of the results obtained by the distinguished groups in the individual dimensions concerning the strengthening of positive affect, change of perspective, soothing, social modeling, and fear of relapse is presented in Figure 1.

Figure 1

Mean scores between the identified clusters for the factors of enhancing positive affect (WPR), changing perspective (ZP), soothing (UK), social modeling (MS), and fear of relapse (LN)



In the next stage of statistical analysis, we decided to determine differences in acceptance of illness between clusters with different levels of emotion regulation and fear of relapse. First, an ANOVA was conducted for acceptance of illness scores (overall score) (Table 10).

Table 10

Univariate significance tests for the acceptance of illness within the three clusters

Effect	*SS*	*df*	*MS*	*F*	*p*
Group	2.9	2	1.46	3.73	.03

The obtained results (Table 11) indicate that there were statistically significant differences in acceptance of illness between clusters of individuals with different levels of emotion regulation and fear of relapse. Next, a Tukey post hoc test was performed between the three clusters.

Table 11
Tukey post hoc test comparison results between the three clusters

Group	Cluster I 2.86	Cluster II 3.20	Cluster III 3.12
1	–		
2	.04	–	
3	.16	.83	–

Scores regarding acceptance of illness differ significantly ($p < .05$) depending on cluster (Table 11). The lowest scores were recorded in cluster one ($M = 2.86$), and the highest in cluster two ($M = 3.20$). Considering the results of Tukey's post hoc test, statistically significant differences were found only between clusters one and two. No statistically significant differences were observed in the remaining scores.

Discussion

The statistical analysis performed using the Statistica program allowed for the identification of the relationship between emotion regulation, fear of disease relapse, and the level of acceptance of life with the disease. In light of the available empirical data, there is a noticeable lack of research examining these three variables simultaneously – especially in the context of breast cancer and its frequent sequela, mastectomy. Addressing this topic and conducting research is also important given the alarming prevalence of this cancer, which is the most common malignancy among women, and its incidence is constantly rising.

This article aimed to examine the relationship between emotion regulation strategies and the level of fear of relapse, and the ability to accept life with the disease among Polish women after mastectomy. The analysis aimed to identify which of the variables studied, and to what extent, may be significant for the process of psychological adaptation to cancer. It was also important to determine whether the level of acceptance of life with the disease depends on specific dimensions of emotion regulation and to what extent the fear of recurrence can disrupt this process. Cancer, and breast cancer in particular, not only has physical consequences but also carries a significant emotional burden. A cancer diagnosis is associated with severe stress, a sense of life-threatening consequences, as well as fear of treatment and its side effects. Patients often experience low mood, anxiety, insomnia, and a sense of loss of control over their bodies and the future. This burden affects not only mental health but also daily functioning – it makes it difficult to maintain social and family roles, weakens motivation for professional work or physical activity, and often leads to social isolation (Bergerot et al., 2024; Sebri et al., 2024).

Consequently, the treatment process requires a comprehensive approach, taking into account not only the somatic aspects but also psychological and psychosocial support, which can significantly improve quality of life and the effects of therapy.

The analysis of the results began by examining whether age and the time elapsed since mastectomy differentiated patients with respect to emotion regulation strategies, the severity of fear of relapse, and dimensions of acceptance of life with the disease. Correlation analysis was performed for this purpose. The Pearson *r* correlation coefficient showed that the relationships were not statistically significant, therefore nonexistent. The reasons may be found in the elapsed time. Testing the first hypothesis, regarding the positive relationship between solace and social modeling with acceptance of life with the disease, yielded ambiguous results. In particular, a significant, albeit weak, negative correlation was observed between solace and the overall level of acceptance, which may indicate that excessive solace-seeking does not always promote adaptation – it can sometimes take the form of emotional withdrawal or avoidance. In the context of Gross's (1999) emotion regulation theory, it can be assumed that solace used reactively, rather than preventively, may lead to emotion suppression rather than processing. Meanwhile, social modeling, despite its theoretical role in adaptation (through observing and imitating others' effective strategies), did not demonstrate significant associations with acceptance. This suggests that the mere presence of role models is not sufficient for the women studied – perhaps internal psychological resources or the quality of supportive relationships, which were not measured in this study, are more important. Women after mastectomy often experience feelings of social alienation and changes in interpersonal relationships, which may limit the effectiveness of this strategy.

In contrast, social modeling, despite its theoretical role in adaptation (through observation and imitation of others' effective strategies), did not demonstrate significant associations with acceptance. Mieszkowski and colleagues (2015) note that women after mastectomy often experience social alienation and changes in self-perception and relationships, which may limit their willingness to learn through observation. Rocławska (2015) also emphasizes that difficulties in accepting a changed body image and fear of social evaluation contribute to isolation. Ogińska-Bulik and Kozak (2002) point out that the ability to identify with people who demonstrate constructive coping strategies is crucial for the effectiveness of social modeling, which may be difficult for women with low self-esteem. Based on the obtained results, it can be concluded that the first hypothesis was only partially confirmed. In a broader theoretical perspective, it should be noted that solace can take on a dual nature. On the one hand, it may serve an adaptive function – as a form of calming down, promoting constructive processing of emotions and further action. On the other hand, in some cases, calming down

may take the form of emotional suppression or avoidance, which – according to Gross's concept of emotion regulation – can lead to worsening mental functioning. Consequently, the negative correlation with acceptance may indicate that in this study group, calming down more often took the form of emotional withdrawal rather than active coping.

The second hypothesis, which assumed a positive relationship between enhancing positive affect and changing perspective, was not confirmed. The lack of a relationship may indicate limited use of these strategies by participants or their insufficient effectiveness in a situation of such a profound existential crisis as breast cancer. These strategies, although considered more advanced and adaptive, may require longer practice and environmental support to produce positive results. According to Eisenberg (2000), the emotion regulation process may be less effective when social support is lacking or when stressors are chronic. As is well known, breast cancer, even in remission, requires constant monitoring. Recurrences and even metastases to other organs can occur, making eliminating stressors extremely difficult, and in some cases, even impossible.

From a health psychology perspective, adapting to illness requires not only regulating emotions but also building new life narratives that allow for the integration of the illness experience with the individual's identity. This requires redefining existing values, plans, and life roles to account for the realities of treatment and the uncertainty surrounding the future (Guo et al., 2025; Krok, Telka & Moroń, 2023). Creating new narratives allows for making sense of difficult events, thus minimizing the sense of chaos and loss of control. This process also fosters a stronger sense of agency, allows for the discovery of new sources of social and spiritual support, and promotes acceptance of the limitations brought by the illness. As a result, integrating the experience of illness with one's identity becomes not only a form of coping but also an opportunity for personal growth and life reevaluation. If such integration does not occur, even the most effective regulatory techniques may be insufficient.

According to Załuski's (2016) research, promoting positive emotions and cognitive reinterpretation can foster adaptation, but their effectiveness depends on the individual's cognitive and emotional resources. Krok et al. (2024) also indicate that a shift in perspective can support the acceptance process, but this requires the ability to make sense of difficult experiences and the availability of social support. As Gross (1999) points out, emotion regulation is more effective during the cognitive reinterpretation stage, provided the individual possesses adequate emotional resources.

The third hypothesis assumed that higher levels of fear of disease recurrence would be associated with lower levels of satisfaction despite illness in women after mastectomy. Regression analysis confirmed this relationship – more intense fear of recurrence was associated with decreased satisfaction despite completed treatment. This result corresponds to the so-called Damocles syndrome, described in

oncology literature, according to which people after cancer treatment experience a chronic sense of threat of disease recurrence, even in the absence of objective medical reasons. This condition makes it difficult to psychologically release the experience of illness and can result in a long-term deterioration in quality of life.

This phenomenon has been extensively described by Dziukiewicz (2020), who indicates that post-mastectomy women who are dominated by fear of recurrence often demonstrate lower levels of life satisfaction, difficulty experiencing positive emotions, and a weakened sense of hope. These patients' daily lives are often dominated by hypervigilance to bodily signals and thoughts of a possible recurrence, leading to increased psychological distress and limiting their ability to derive satisfaction from life.

The results regarding the fourth hypothesis showed that women with higher levels of fear of recurrence scored lower on the dimensions of coming to terms with and distancing themselves from the disease. Regression analysis revealed a significant explanation for the variability of these variables by the level of anxiety. Fear of recurrence can act as a cognitive-emotional filter, through which the entire health experience takes on the character of a constant threat. In such a situation, the disease—despite the physical completion of treatment – is still perceived as constantly present, making it difficult for patients to achieve inner peace, come to terms with the situation, and create a healthy psychological distance.

Lebel and colleagues (2012) observed that individuals experiencing intense fear of relapse tend to engage in avoidance, intrusive thoughts, and rumination, which limits adaptive capacity. From the perspective of Lazarus and Folkman's (1984) stress and coping theory, anxiety as an element of primary cognitive appraisal can significantly determine adaptation strategies, including the ability to distance oneself from difficult emotions or reframe the meaning of the illness. Załuski (2016), in his study of ruminations in patients after cancer treatment, emphasized that constructive reflection on the illness can support the process of acceptance. However, under conditions of high anxiety, destructive rumination often dominates – intrusive, negative considerations that deepen stress and hinder adaptation to life after the illness.

These results are also reflected in the research by Krok et al. (2024), who demonstrated that fear of relapse can impair the process of making sense of the disease and limit the ability to build internal psychological resources, such as cognitive and emotional flexibility. Women who are unable to integrate the experience of illness with a positive life narrative are less likely to achieve a state of acceptance and more likely to remain in an alarm mode, which translates into difficulties in adapting. Importantly, the anxiety discussed is not identical to general anxiety – it refers to the specific experience of fear of relapse, and therefore, its measurement requires dedicated diagnostic tools. The Fear of Relapse Questionnaire

was used in this study, which allows for the capture of this specific form of anxiety and its relationship with disease acceptance more precisely than traditional tools measuring generalized anxiety.

In summary, a high level of fear of relapse is associated with difficulties in adapting to life after cancer treatment. Reducing this anxiety may contribute to both improved quality of life and better processing of emotions related to the experience of illness.

The results of this study indicate that fear of disease recurrence is associated with significant difficulties in the psychological adjustment of women after mastectomy. This relationship is supported by the concept of regulatory flexibility (Janowski & Biedrycka, 2014), which posits that the effectiveness of emotion regulation strategies depends not only on their content but primarily on their appropriateness to the situational context. The obtained results suggest that some strategies considered adaptive, such as soothing, may serve a maladaptive function in cases of chronic anxiety related to cancer. This observation is consistent with the assumption that strategies that provide relief in the short term may lead to deterioration of mental functioning in the long term, especially in the context of chronic emotional disorders. The identified relationships between the level of fear of disease recurrence, the emotion regulation strategies used, and the level of disease acceptance constitute a significant contribution to the development of theoretical models describing the process of adaptation to chronic illness. The study's findings are consistent with the tenets of Lazarus and Folkman's (1984) transactional theory of stress and coping, which posits that the cognitive appraisal of a health situation and the selection of emotional and behavioral strategies are crucial for the quality of psychological adjustment. Furthermore, the data are supported by attachment theories – Kozińska's (2013) research indicates that attachment style influences how one reacts to stressful situations and the preferred coping strategies. The study found that women who used more flexible and socially oriented strategies, such as social modeling, demonstrated higher levels of illness acceptance. These results reinforce the theoretical foundations, indicating the importance of interpersonal relationships and a positive self-efficacy in the process of emotional adjustment to cancer diagnosis and treatment.

Limitations

Although the obtained results provide valuable information, they should be interpreted with several limitations in mind. First, the study was cross-sectional in nature, meaning we cannot conclude on cause-and-effect relationships. Relationships between variables may be co-occurring, but not necessarily causal. Therefore,

longitudinal studies are worth considering in the future to assess the dynamics of change over time. The study group was specific – it included only women who had completed oncological treatment (mastectomy), which limits the generalizability of the results.

In expanding future research, it would be worthwhile to further classify patients by mastectomy type, distinguish between full and breast-conserving mastectomy, and expand the context of mastectomy. Some women choose a mastectomy with breast reconstruction in one operation, which may have a much more positive prognosis for well-being and psychological well-being after the surgery, as the woman cannot physically see the missing breast, nor is it visible to others. However, this is not always possible, for example, due to oncological reasons, such as inflammatory cancer or the need for further treatment with radiotherapy or chemotherapy. As is known, radiotherapy can damage tissue, making reconstruction with implants difficult, while chemotherapy may require postponing the procedure. Neither women undergoing treatment for other types of cancer nor men were included in the study. Furthermore, the time since treatment completion could have varied between participants, which could have influenced the level of anxiety and acceptance. In some cases, study participants who had undergone a mastectomy many years ago reported experiencing full joy in life and that the disease had faded away. Methodological limitations related to the use of self-report questionnaires should also be considered. Although the tests used are characterized by high validity and reliability, their results are based solely on the subjective assessment of participants.

Application

From a clinical practice perspective, the obtained results emphasize the need for individualized psychological support for women after mastectomy. Varying levels of fear of disease recurrence, different styles of emotion regulation, and the degree of acceptance of the health situation indicate the need to tailor interventions to the patient's individual emotional resources, personality traits, and social context. In particular, it is recommended to implement therapeutic interventions aimed at developing psychological flexibility, emotional awareness, and the ability to accept difficult experiences. Mindfulness-based approaches, such as Acceptance and Commitment Therapy (ACT) and elements of Gestalt therapy (Janowski & Biedrycka, 2014), are effective in this regard, enabling better processing of illness experiences and fostering internal cohesion.

The study results also point to the importance of peer support environments, such as Amazon associations. Such groups offer not only emotional support but also enable contact with real-world models of effective coping with the disease.

The observation of social modeling strategies as a positive predictor of illness acceptance supports the inclusion of group work and experience-sharing in programs supporting women after cancer treatment. The study addresses the current needs of clinical practice, where increasing attention is being paid to the psychological aspects of recovery and quality of life in cancer patients.

Based on the obtained data, recommendations can also be formulated for preventing the recurrence of emotional distress. It is worthwhile to implement psychoeducational programs and stress management training to help patients identify the fear of relapse and develop constructive ways to manage it. Such activities can contribute to improving women's quality of life after treatment and strengthen their adaptability in daily functioning. The results of this study may find practical applications – both in the development of psychological support programs for women after cancer treatment and in broader reflection on the need to consider patients' emotions, anxiety, and narratives in the recovery process. Therapies focused on emotion regulation strategies and anxiety management may be particularly helpful in improving the quality of life of women after mastectomy. Interventions based on working with beliefs, strengthening a sense of control, and activating internal resources can support the healing process and improve patients' mental functioning.

Conclusion

Summarizing the content of this study, fear of disease recurrence proved to be a key predictor hindering the acceptance of life with the disease in women after mastectomy – it negatively impacted life satisfaction, hindered reconciliation with the disease, and prevented distancing from it. The lack of correlation between age and the time elapsed since mastectomy may lead to the conclusion that psychological support should not end with the completion of oncological treatment – long-term psychological care and psychoeducation are necessary. Emotion regulation, although important, has not always proven directly effective – its importance may depend on context, personality, or the level of psychological resources. The results of this study confirm that the process of psychological adaptation to the disease is not one-dimensional but depends on many factors – both individual and environmental.

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