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The Relationship between Self-Compassion, Interpersonal Emotion Regulation, and Coping Styles with Quality of Life in Women after Mastectomy Surgery

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A B S T R A C T

Objective: The aim of the present study was to examine the relationship between self-compassion, interpersonal emotion regulation, and coping styles with quality of life in women after mastectomy surgery.

Methods and Materials: The research method was correlational, and the statistical population included women with a history of mastectomy surgery, from whom 200 participants were selected using convenience sampling. Data were collected using the Self-Compassion Scale (SCS; Neff, 2003), the Interpersonal Emotion Regulation Questionnaire (IERQ; Hofmann et al., 2016), the Coping Inventory for Stressful Situations (CISS; Parker & Endler, 1990), and the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF; World Health Organization, 1991). The collected data were analyzed using Pearson correlation and multivariate regression analyses.

Findings: The results of multivariate regression analysis indicated that problem-focused coping, interpersonal emotion regulation, and self-compassion positively and significantly predicted quality of life in women after mastectomy surgery ($p < .05$), whereas emotion-focused coping and avoidance-focused coping negatively and significantly predicted quality of life ($p < .05$).

Conclusion: Higher quality of life in women after mastectomy surgery is associated with the use of problem-focused coping strategies, effective interpersonal emotion regulation, and greater self-compassion. Therefore, training in effective coping strategies for dealing with post-surgical life challenges, as well as strengthening self-compassion, should be considered by health psychology professionals to improve the quality of life of these women.

Keywords: *Self-compassion; Interpersonal emotion regulation; Coping styles; Quality of life; Women; Mastectomy surgery*

1. Introduction

Breast cancer remains one of the most prevalent malignancies affecting women worldwide and continues to impose profound physical, psychological, social, and economic burdens on patients and health systems alike. Despite substantial advances in early detection and medical treatment, surgical intervention—particularly mastectomy—remains a common therapeutic approach for many patients. While mastectomy contributes significantly to survival outcomes, it also introduces complex psychosocial consequences that extend far beyond the immediate clinical domain. Quality of life following mastectomy has therefore emerged as a central concern in contemporary oncological and psychosocial research, reflecting not only physical health but also emotional functioning, social integration, identity reconstruction, and long-term psychological adaptation (Bailey et al., 2017; Martins Faria et al., 2021). Evidence consistently demonstrates that women undergoing mastectomy frequently experience disruptions in body image, sexual functioning, self-esteem, emotional stability, and interpersonal relationships, which in turn compromise overall life satisfaction and psychological well-being (Ghazafari & Nikoogoftar, 2021; Martins Faria et al., 2021). These challenges underscore the necessity of identifying protective psychological factors and adaptive processes that facilitate recovery and promote sustainable quality of life after surgical treatment.

Within this evolving research landscape, quality of life is now recognized as a multidimensional construct shaped by a dynamic interplay of intrapersonal resources, interpersonal processes, and coping behaviors. The psychological adjustment of women following mastectomy is influenced not only by medical variables such as disease stage and treatment modality but also by personal strengths and social-contextual factors that regulate emotional experience and stress management (Cho et al., 2020; Moura et al., 2021). Growing empirical attention has therefore shifted toward mechanisms of emotional self-regulation, interpersonal emotion regulation, self-compassion, and coping styles as core determinants of post-treatment functioning and well-being (Hofmann, 2014; Masoumi et al., 2022; Wilski et al., 2019). These constructs provide an integrative framework through which individuals interpret illness-related stressors, manage emotional responses, and maintain meaningful engagement with life after cancer.

Among the most influential intrapersonal resources, self-compassion has gained considerable prominence as a psychological buffer against distress and maladaptive coping. Self-compassion refers to an attitude of kindness toward oneself in the face of suffering, recognition of shared human imperfection, and mindful awareness of painful experiences without excessive self-judgment or avoidance. Substantial empirical literature demonstrates that higher self-compassion predicts lower psychological distress, reduced negative affect, greater emotional regulation capacity, and enhanced overall quality of life across clinical and nonclinical populations (Asselmann et al., 2024; Rashidi Mehr et al., 2023; Sadeghi et al., 2020; Wild et al., 2025). Specifically within oncology contexts, self-compassion has been shown to mediate the relationship between perceived social support and emotional self-regulation among breast cancer survivors, highlighting its role as a critical resilience factor during recovery (Masoumi et al., 2022). Moreover, self-compassion-based interventions have demonstrated promising outcomes in improving psychological adjustment and professional quality of life in health-related populations (Bedir & Eliüşük-Bülbül, 2024; Bian et al., 2025; Zerach, 2025).

Closely related to self-compassion is the broader construct of emotion regulation, which encompasses the processes through which individuals influence the experience, expression, and modulation of emotions. While traditional models of emotion regulation emphasize intrapersonal mechanisms, recent theoretical and empirical advances underscore the importance of interpersonal emotion regulation—the regulation of emotions through social interactions and relationships (Barthel et al., 2018; Dixon-Gordon et al., 2015; Hofmann, 2014). Interpersonal emotion regulation reflects how individuals seek emotional support, share emotional experiences, and co-construct emotional meaning with others in ways that shape psychological outcomes. This relational dimension of emotion regulation is particularly salient in chronic illness contexts, where emotional challenges are not only internal experiences but are deeply embedded in family systems, healthcare interactions, and social networks (Moura et al., 2021; Parkinson & Manstead, 2015).

Empirical findings confirm that effective interpersonal emotion regulation significantly predicts improved quality of life among women with breast cancer by reducing emotional burden and enhancing adaptive functioning (Moura et al., 2021). The Interpersonal Emotion Regulation Questionnaire has been widely validated across cultural

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contexts and demonstrates robust psychometric properties for assessing this multidimensional construct (Gökdağ et al., 2019; Lotfi et al., 2020). Furthermore, difficulties in interpersonal emotion regulation have been linked to increased psychological vulnerability and diminished well-being, reinforcing its role as a central process in psychological adjustment to illness (Dixon-Gordon et al., 2018).

In parallel, coping styles represent another foundational determinant of quality of life in medical populations. Coping refers to the cognitive and behavioral strategies individuals employ to manage stressors perceived as exceeding their adaptive resources. The literature consistently differentiates between problem-focused coping, emotion-focused coping, and avoidance-oriented coping, each of which exerts distinct influences on psychological outcomes (Cho et al., 2020; Lee et al., 2024; Mohammadipour & Pidad, 2021). In breast cancer populations, adaptive coping strategies—particularly problem-focused coping—are associated with better psychological adjustment, lower depressive symptoms, and higher health-related quality of life, whereas maladaptive coping patterns such as avoidance and excessive emotion-focused coping predict greater distress and poorer life satisfaction (Carreiro et al., 2025; Cho et al., 2020).

Longitudinal evidence further indicates that coping styles at diagnosis exert enduring effects on health-related quality of life trajectories over time, underscoring their prognostic importance (Cho et al., 2020). Similar patterns have been documented across diverse chronic illness groups, including multiple sclerosis, HIV, terminal illness, and trauma-exposed populations, reinforcing the generalizability of coping processes as key drivers of well-being (Chukwuorji et al., 2024; Lee et al., 2024; Wilski et al., 2019; Zerach, 2025). Notably, coping styles also function as mediators between dispositional variables such as mindfulness and self-compassion and psychological outcomes, highlighting their integrative role within broader self-regulatory systems (Asselmann et al., 2024; Xie, 2023).

Beyond intrapersonal processes, social-contextual variables further shape the quality of life of women recovering from mastectomy. Satisfaction with social support and relational functioning has been shown to directly and indirectly influence well-being through its effects on coping and emotional regulation (Carreiro et al., 2025). Deficits in social cognition and interpersonal functioning also undermine quality of life in chronic neurological and medical populations, emphasizing the relational foundations of psychological health (Marafioti et al., 2024). Consequently, an integrative model that simultaneously considers self-compassion, interpersonal emotion regulation, and coping styles offers a comprehensive framework for understanding the psychological adaptation of women after mastectomy.

Despite the growing body of research examining these constructs independently, there remains a critical need for empirical studies that examine their combined predictive contributions to quality of life within post-mastectomy populations. Prior investigations have typically focused on isolated mechanisms, leaving important gaps in understanding how these psychological resources operate collectively to influence long-term well-being. Furthermore, while international research has documented the relevance of these constructs, culturally grounded studies remain limited, particularly in non-Western contexts where social norms, illness perceptions, and coping practices may differ substantially (Ghazafari & Nikoogoftar, 2021; Lotfi et al., 2020). Addressing these gaps is essential for developing culturally responsive interventions that effectively enhance post-treatment quality of life.

The current study seeks to contribute to this literature by examining the interrelationships among self-compassion, interpersonal emotion regulation, and coping styles and their predictive roles in determining the quality of life of women following mastectomy surgery, thereby advancing an integrative psychological model of post-cancer adaptation that aligns with contemporary biopsychosocial perspectives on health and well-being (Asselmann et al., 2024; Hofmann, 2014; Moura et al., 2021; Wild et al., 2025).

The aim of this study was to investigate whether self-compassion, interpersonal emotion regulation, and coping styles significantly predict the quality of life of women after mastectomy surgery.

2. Methods and Materials

2.1. Study design and Participant

The present study was conducted in 2022 after approval by the Islamic Azad University, Tehran Central Branch, and registration under an official ethics code. The statistical population consisted of all women who had referred to hospitals in the city of Tehran due to breast cancer and who had undergone mastectomy surgery in recent years. The sample size was determined based on the formula proposed by Tabachnick and Fidell (2007), using the equation $N \geq 50 + 8m$, and was set at 200 participants after accounting for possible attrition. In this formula, m represents the number

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of predictor variables. Accordingly, from among women with breast cancer and a history of mastectomy surgery, 200 participants who were willing to take part in the study were selected through convenience sampling. Given that one of the mechanisms through which mastectomy affects quality of life is its impact on marital relationships, the inclusion criteria were: being married, aged 26 to 65 years, and having passed at least six months since the completion of medical treatment (excluding hormone therapy). The participants completed the following questionnaires.

2.2. Measures

Self-Compassion Scale (SCS): This questionnaire consists of 26 items and six components, including self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Items are rated on a 5-point Likert scale ranging from strongly disagree = 1 to strongly agree = 5. In a study conducted by Khosravi et al. (2013), the Cronbach's alpha coefficient for the total scale was reported as 0.76. Moreover, Cronbach's alpha coefficients for the respective subscales were 0.81, 0.79, 0.84, 0.85, 0.80, and 0.83, corresponding to self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification, respectively. The validity of the questionnaire was also examined and confirmed in the same study.

Coping Inventory for Stressful Situations (CISS): This instrument, developed by Parker and Endler (1990), is a reliable measure for assessing coping methods in adolescents and adults when facing stressful and crisis situations. Each coping style constitutes a separate scale containing 16 items. These include: (a) avoidance-oriented coping, with two subscales of social diversion and distraction; (b) problem-focused coping, which encompasses strategies used by individuals to control, eliminate, or reduce unpleasant internal or external stressors, focusing directly on the problem or the aversive stimulus; and (c) emotion-focused coping, which involves emotional escape and physical withdrawal from the stressor. In various studies, the internal consistency reliability of the CISS has been reported with different values. For example, Parker and Endler (1990) reported internal consistency coefficients ranging from 0.41 to 0.66. In another study conducted by Aghamohammadian et al. (1999) on 100 male and female students at Ferdowsi University of Mashhad, the reliability and validity of the questionnaire were reported as 0.73.

Interpersonal Emotion Regulation Questionnaire (IERQ): This instrument was developed by Hofmann et al. (2016) and consists of 20 items and four subscales: enhancing positive affect, soothing, social modeling, and perspective taking. The purpose of the scale is to assess how individuals regulate their emotions within interpersonal relationships. Interpersonal emotion regulation refers to the process by which individuals share their emotional experiences with others in order to reduce their own negative affect in the presence of others or to influence the emotions of others. In addition to intrapersonal aspects of emotion regulation, social processes play an essential role in emotional experience and expression. Hofmann et al. (2016) reported internal consistency coefficients of 0.98, 0.94, 0.93, and 0.91 for the four subscales, respectively. The questionnaire demonstrated a four-factor structure confirmed through confirmatory factor analysis (CFI = 0.97). In a study by Güdek et al., conducted on 467 volunteers in Türkiye to examine the psychometric properties of the IERQ, Cronbach's alpha coefficients ranged from 0.81 to 0.89 for the four subscales. Furthermore, the psychometric properties of the IERQ were examined in the Iranian cultural context by Lotfi et al., in a sample of 602 university students selected through cluster sampling. Exploratory and confirmatory factor analyses supported a three-factor model of the questionnaire. Cronbach's alpha coefficient was 0.90 for the total scale and 0.84, 0.82, 0.80, and 0.81 for the subscales of enhancing positive affect, soothing, social modeling, and perspective taking, respectively.

World Health Organization Quality of Life Questionnaire (WHOQOL-BREF): This 26-item instrument was developed in 1996 by a group of experts from the World Health Organization through modification of the original 100-item version. It assesses individuals' general and overall quality of life. The questionnaire includes four subscales: physical health, psychological health, social relationships, and environmental health, along with a total quality of life score. Higher scores indicate better quality of life. In Iran, a study conducted by Nasiri et al. (2006) translated the scale into Persian and reported its reliability and validity. The Cronbach's alpha coefficient for internal consistency was calculated as 0.84. Factor analysis of the 26 items also confirmed the existence of the four subscales of physical health, psychological health, social relationships, and environment, supporting its construct validity.

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2.3. *Data Analysis*

For data analysis, Pearson correlation coefficients and multivariate regression analysis were employed. The significance level was set at $\alpha = 0.05$, and all statistical analyses were conducted using SPSS software, version 26.

3. Findings and Results

The participants of the study consisted of 200 women who had undergone mastectomy surgery, ranging in age from 26 to 65 years, with a mean age of 47.11 years. The mean duration of marriage was 17.70 years.

Table 1

Descriptive Statistics of Study Variables in the Sample (n = 200 Women)

Variable	Minimum	Maximum	Mean	Standard Deviation
Self-kindness	6	24	15.08	3.433
Self-judgment	6	25	15.41	3.209
Common humanity	2	21	11.22	3.130
Isolation	6	18	12.12	2.420
Mindfulness	4	19	11.07	2.964
Over-identification	4	19	11.84	2.832
Total self-compassion score	52	101	76.74	8.229
Enhancing positive affect	7	19	13.29	2.179
Perspective taking	9	21	13.81	2.632
Soothing	8	21	14.96	2.654
Social modeling	7	23	14.12	3.066
Total interpersonal emotion regulation	41	76	56.54	6.572
Problem-focused coping	26	60	46.53	5.786
Emotion-focused coping	38	64	51.78	4.576
Avoidance-focused coping	39	64	51.63	4.580
Physical health	12	32	24.83	3.351
Psychological health	9	25	16.12	2.879
Social relationships	3	14	8.25	2.238
Environmental health	11	28	19.11	3.450
Overall quality of life and general health	2	9	5.31	1.414
Total quality of life score	50	93	73.62	6.609

Table 1 presents the statistical indices related to self-compassion in the sample under study. The mean and standard deviation of total self-compassion were 76.74 and 8.229, respectively. In addition, the statistical indices for interpersonal emotion regulation are reported, with a mean of 56.54 and a standard deviation of 6.57 for the total score. The statistical indices for coping styles indicate that the mean and standard deviation for problem-focused coping were 46.53 and 5.78, for emotion-focused coping 51.78 and 4.57, and for avoidance-focused coping 51.63 and 4.58, respectively. The statistical indices for quality of life showed that the mean and standard deviation of total quality of life were 73.62 and 6.60, respectively.

Subsequently, the assumptions of regression analysis were examined and confirmed, including: normality of residuals, independence of errors, and absence of multicollinearity among predictor variables. That is, the distribution of errors was assumed to be normal, residuals were independent of each other, and the predictor variables were not highly correlated with one another.

To test the hypothesis that self-compassion, interpersonal emotion regulation, and coping styles are significantly associated with quality of life in women after mastectomy surgery, simultaneous multiple regression analysis was applied. Table 2 reports the correlation matrix showing the relationships between quality of life and the independent variables of the study.

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Table 2

Correlation Matrix Between Quality of Life and Study Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Quality of life	1									
2. Self-compassion	.326**	1								
3. Enhancing positive affect	.053	.100	1							
4. Perspective taking	-.067	-.004	.085	1						
5. Soothing	.044	-.048	.058	.220**	1					
6. Social modeling	.152*	.133	.037	.219**	.278**	1				
7. Interpersonal emotion regulation	.655**	.532**	.531**	.336**	.159*	.315**	1			
8. Problem-focused coping	.170*	.186**	.068	.049	.006	.083	.443**	1		
9. Emotion-focused coping	-.029	-.123	-.149*	-.101	.023	-.076	-.213**	-.380**	1	
10. Avoidance-focused coping	-.061	.099	-.018	.004	-.083	.118	-.073	-.069	-.281**	1

As shown in Table 2, the strongest correlations with quality of life were observed for problem-focused coping (r = .459), emotion-focused coping (r = −.380), and self-compassion (r = .326), whereas the weakest correlations with quality of life were found for mindfulness (r = .034), perspective taking (r = .085), and isolation (r = .087).

To predict quality of life based on self-compassion, interpersonal emotion regulation, and coping styles, simultaneous multiple regression analysis was conducted. This approach was selected because the study hypothesized that self-compassion, interpersonal emotion regulation, and coping styles significantly predict quality of life. The summary of the regression model using simultaneous entry of predictors is reported in Table 3.

Table 3

Summary of the Predictive Model of Quality of Life Based on Predictor Variables

Criterion Variable	Multiple Correlation (R)	Explained Variance (R^2)	Adjusted R^2	Standard Error of Estimate	Durbin–Watson
Quality of Life	.730	.533	.521	4.555	1.850

According to Table 3, the amount of variance in quality of life explained by the predictor variables is 0.53. In other words, 53% of the variance in quality of life can be predicted by the linear combination of self-compassion, interpersonal emotion regulation, and coping styles. It should be noted that the assumption of independence of errors was also confirmed based on the Durbin–Watson statistic, which fell within the acceptable range of 1.50 to 2.50. The continuation of the analysis is presented below.

Table 4

Results of the Analysis of Variance for the Simultaneous Regression of Quality of Life on the Predictor Variables

Model	Source	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4599.173	1	919.835	44.330	.001
	Residual	4025.401	194	20.749		
	Total	8624.574	199			

As shown in Table 4, the observed F-value (44.33) is statistically significant at the p < .001 level. Therefore, it can be concluded that, overall, the predictor variables—self-compassion, interpersonal emotion regulation, problem-focused coping, emotion-focused coping, and avoidance-focused coping—significantly predict the criterion variable, namely quality of life. Accordingly, the main research hypothesis is supported. Based on this result, the regression coefficients are reported to examine the unique contribution of each predictor variable. The results are presented in Table 5.

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Table 5

Unstandardized and Standardized Regression Coefficients for the Predictive Model of Quality of Life

Model	Predictor Variables	B	Std. Error	Standardized Beta	t	Sig.
1	Constant	82.324	7.461	—	11.034	.001
	Self-compassion	.131	.041	.164	3.207	.001
	Interpersonal emotion regulation	.167	.051	.167	3.301	.001
	Problem-focused coping	.503	.057	.442	8.798	.001
	Emotion-focused coping	−.515	.073	−.358	−7.056	.001
	Avoidance-focused coping	−.484	.071	−.336	−6.777	.001

According to Table 5, the standardized beta coefficient for self-compassion is 0.164, which is positive and statistically significant ($t = 3.207$, $p < .001$). This indicates a significant positive relationship between self-compassion and quality of life, and demonstrates its predictive role. The standardized beta coefficient for interpersonal emotion regulation is 0.167, which is also positive and statistically significant ($t = 3.301$, $p < .001$), indicating a significant positive relationship with quality of life and a meaningful predictive effect.

The standardized beta coefficient for problem-focused coping is 0.442, and it is positive and statistically significant ($t = 8.798$, $p < .001$), suggesting that higher use of problem-focused coping strategies is associated with better quality of life. In contrast, the standardized beta coefficient for emotion-focused coping is −0.358, which is negative and statistically significant ($t = −7.056$, $p < .001$), indicating a significant negative relationship with quality of life. Similarly, the standardized beta coefficient for avoidance-focused coping is −0.336, which is also negative and statistically significant ($t = −6.777$, $p < .001$).

Overall, these findings indicate that quality of life is positively and significantly associated with self-compassion, interpersonal emotion regulation, and problem-focused coping (in these scales, higher scores reflect better quality of life), whereas emotion-focused coping and avoidance-focused coping show negative and significant associations with quality of life (in these scales, higher scores indicate poorer quality of life). These results demonstrate that self-compassion, interpersonal emotion regulation, problem-focused coping, emotion-focused coping, and avoidance-focused coping significantly predict the quality of life of women after mastectomy surgery.

4. Discussion

The present study examined the predictive roles of self-compassion, interpersonal emotion regulation, and coping styles in determining the quality of life of women following mastectomy surgery. The findings revealed that self-compassion, interpersonal emotion regulation, and problem-focused coping were significantthe strongest positive predictors of quality of life, whereas emotion-focused and avoidance-focused coping were significant negative predictors. Collectively, the model explained a substantial proportion of variance in quality of life, underscoring the central role of psychological and relational mechanisms in post-mastectomy adjustment. These results provide strong empirical support for contemporary integrative models of health psychology, which emphasize the interaction between intrapersonal emotional resources, interpersonal processes, and behavioral coping strategies in shaping long-term well-being following major medical interventions.

The positive association between self-compassion and quality of life observed in this study is highly consistent with existing literature. Prior research has repeatedly demonstrated that individuals with higher self-compassion exhibit greater emotional stability, lower psychological distress, and enhanced life satisfaction across diverse populations (Asselmann et al., 2024; Rashidi Mehr et al., 2023; Sadeghi et al., 2020; Wild et al., 2025). Specifically within breast cancer contexts, Masoumi et al. documented that self-compassion significantly strengthens emotional self-regulation and psychological well-being among survivors (Masoumi et al., 2022). The present findings extend this evidence by demonstrating that self-compassion not only enhances emotional functioning but also translates into broader improvements in perceived quality of life after mastectomy. This suggests that self-compassion serves as a foundational resilience factor, enabling women to process illness-related stress with greater emotional balance, self-acceptance, and adaptive self-care.

Moreover, the strong predictive contribution of interpersonal emotion regulation highlights the relational nature of emotional adaptation following mastectomy. Theoretical models propose that emotional experiences are

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inherently social, and individuals frequently rely on interpersonal interactions to regulate affect, seek validation, and construct meaning during periods of distress (Hofmann, 2014; Parkinson & Manstead, 2015). Empirical research supports this view, demonstrating that effective interpersonal emotion regulation is associated with reduced emotional burden and improved quality of life among women with breast cancer (Moura et al., 2021). The present study corroborates these findings and further emphasizes that the ability to engage in supportive emotional exchanges, receive comfort, and co-regulate emotions within close relationships constitutes a critical determinant of post-surgical well-being. These results align with evidence indicating that deficits in interpersonal emotional functioning are associated with poorer psychosocial outcomes across medical populations (Dixon-Gordon et al., 2018; Marafioti et al., 2024).

The particularly strong effect of problem-focused coping observed in this study reinforces the adaptive value of active coping strategies in chronic illness contexts. Prior longitudinal research has shown that women who employ problem-focused coping following breast cancer diagnosis experience sustained improvements in health-related quality of life over time (Cho et al., 2020). Similar findings have been reported across chronic disease populations, including neurological disorders and terminal illness, where problem-focused coping predicts better psychological adjustment and reduced distress (Lee et al., 2024; Wilski et al., 2019). The present findings confirm that engaging in constructive problem-solving, planning, and goal-directed behaviors empowers women to manage the practical and emotional challenges associated with mastectomy, thereby enhancing their overall life satisfaction.

Conversely, the negative predictive roles of emotion-focused and avoidance-focused coping are also well-supported by prior research. Excessive reliance on emotion-focused coping strategies such as rumination, self-blame, and emotional withdrawal has been linked to heightened psychological distress and poorer quality of life among women with breast cancer (Cho et al., 2020; Mohammadipour & Pidad, 2021). Avoidance-oriented coping, which involves denial, disengagement, and behavioral withdrawal, further exacerbates psychological vulnerability by preventing effective processing of illness-related stressors and hindering problem resolution. Empirical evidence across multiple clinical populations consistently demonstrates that avoidance coping is associated with poorer emotional outcomes and diminished life satisfaction (Carreiro et al., 2025; Wilski et al., 2019; Zerach, 2025). The current findings reinforce these patterns and underscore the detrimental consequences of maladaptive coping in the post-mastectomy recovery process.

Importantly, the combined effects of self-compassion, interpersonal emotion regulation, and coping styles observed in this study support an integrative model of psychological adaptation. Prior research indicates that self-compassion influences emotional well-being partially through its impact on coping behaviors and emotion regulation capacities (Asselmann et al., 2024; Xie, 2023). Similarly, interpersonal emotion regulation has been shown to interact with individual coping strategies in shaping psychological outcomes among women with breast cancer (Moura et al., 2021). The present results provide empirical confirmation that these constructs function synergistically to influence quality of life after mastectomy. This integrated framework offers a more comprehensive understanding of post-surgical adjustment than approaches that examine these variables in isolation.

Cultural considerations further enhance the significance of these findings. Studies conducted within Iranian contexts have highlighted the profound social and identity-related challenges experienced by women following mastectomy, including threats to femininity, marital intimacy, and social participation (Ghazafari & Nikoogoftar, 2021). The present study builds upon this cultural foundation by identifying specific psychological mechanisms that can buffer these challenges and promote adaptive recovery. The cross-cultural validity of the interpersonal emotion regulation construct, as established through psychometric validation studies in Turkish and Iranian samples, further strengthens the generalizability of the current findings (Gökdağ et al., 2019; Lotfi et al., 2020). Together, these results provide robust empirical support for culturally responsive psychosocial interventions aimed at enhancing post-mastectomy quality of life.

The findings of this study also have important implications for survivorship care. Quality of life outcomes following mastectomy are increasingly recognized as critical indicators of treatment success, complementing traditional medical endpoints such as survival and recurrence rates (Bailey et al., 2017; Martins Faria et al., 2021). By demonstrating that modifiable psychological factors significantly predict quality of life, the present study underscores the necessity of integrating psychological assessment and intervention into routine oncological care. Interventions that cultivate self-compassion, strengthen

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interpersonal emotion regulation skills, and promote adaptive coping may yield meaningful improvements in long-term well-being for women navigating the physical and emotional aftermath of mastectomy.

5. Conclusion

In summary, the present findings offer compelling evidence that self-compassion, interpersonal emotion regulation, and coping styles play central and interrelated roles in shaping the quality of life of women after mastectomy surgery. These results align with and extend existing empirical and theoretical frameworks, providing a cohesive model of post-cancer psychological adaptation that emphasizes emotional resilience, relational support, and behavioral self-regulation.

6. Limitations and Suggestions

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design restricts causal inference, making it impossible to determine the temporal direction of the observed relationships. Second, the reliance on self-report measures may have introduced response biases such as social desirability or recall bias. Third, the sample was drawn from a single geographic region, which may limit the generalizability of the findings to other cultural or healthcare contexts. Finally, medical variables such as cancer stage, treatment type, and comorbid conditions were not systematically controlled, which may have influenced quality of life outcomes.

Future studies should employ longitudinal designs to examine the dynamic interplay between self-compassion, interpersonal emotion regulation, coping styles, and quality of life across different phases of cancer survivorship. Incorporating qualitative methods could further illuminate the lived experiences of women navigating emotional and relational challenges after mastectomy. Expanding samples to include diverse cultural and socioeconomic backgrounds would enhance the external validity of findings. Additionally, experimental studies evaluating targeted psychosocial interventions may clarify the causal mechanisms through which these psychological factors influence long-term well-being.

Healthcare professionals should integrate routine psychological screening for emotional regulation difficulties, maladaptive coping patterns, and low self-compassion into post-mastectomy care. Structured psychoeducational programs and counseling interventions can be developed to strengthen self-compassion, enhance interpersonal emotion regulation skills, and promote adaptive coping strategies. Multidisciplinary collaboration between oncologists, psychologists, and social workers is essential to address the complex emotional needs of women following mastectomy and to support holistic recovery and sustained quality of life.

Authors' Contributions

F.K. and M.A.T. jointly developed the research concept and study design. F.K. conducted data collection and preliminary analyses, while M.A.T. supervised the statistical analysis and interpretation of findings. Both authors contributed equally to drafting, revising, and finalizing the manuscript and approved the final version for publication.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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