

A Comparison of the Effectiveness of a Marital Quality of Life-Based Therapeutic Package and Mindfulness Therapy on Marital Relationship Quality and Alexithymia in Married Women with Breast Cancer

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ABSTRACT

Objective: This study aimed to compare the effectiveness of a marital quality of life-based therapeutic package and mindfulness therapy on marital relationship quality and alexithymia in married women with breast cancer.

Methods and Materials: This quantitative quasi-experimental study used a pretest-posttest-follow-up design with two experimental groups and one control group. The statistical population consisted of married women with breast cancer who referred to treatment centers in Babol, Iran. A total of 60 participants were selected through purposive sampling based on inclusion and exclusion criteria and were randomly assigned to three groups: marital quality of life-based therapeutic package, mindfulness therapy, and control, with 20 participants in each group. The first experimental group received the marital quality of life-based therapeutic package in 11 structured sessions, while the second experimental group received mindfulness therapy in eight 60-minute sessions. The control group received no intervention during the study period. Data were collected using the Toronto Alexithymia Scale and the Marital Relationship Quality Questionnaire at pretest, posttest, and three-month follow-up. Data were analyzed using repeated-measures analysis of variance and Bonferroni post-hoc tests in SPSS-22.

Findings: The results showed significant effects of group, time, and group-by-time interaction for both marital relationship quality and alexithymia. For total alexithymia, the group effect was significant ($F = 19.34, p < .001, \eta^2 = .48$), as were the time effect ($F = 13.62, p < .001, \eta^2 = .39$) and group-by-time interaction ($F = 11.08, p < .001, \eta^2 = .36$). For total marital relationship quality, the group effect ($F = 21.61, p < .001, \eta^2 = .52$), time effect ($F = 25.78, p < .001, \eta^2 = .52$), and interaction effect ($F = 12.96, p < .001, \eta^2 = .47$) were also significant. Bonferroni comparisons indicated that both interventions were effective, but the therapeutic package produced greater improvement than mindfulness therapy.

Conclusion: The marital quality of life-based therapeutic package was more effective than mindfulness therapy in improving marital relationship quality and reducing alexithymia among married women with breast cancer, and its effects were maintained at follow-up.

Keywords: breast cancer; marital relationship quality; alexithymia; mindfulness therapy; marital quality of life; therapeutic package

1. Introduction

Breast cancer is not only a major medical condition but also a deeply relational and psychological experience that can reorganize the emotional, interpersonal, and marital life of affected women. For married women, the diagnosis, treatment process, physical changes, fear of recurrence, disruption of sexual functioning, fatigue, and uncertainty about the future may all enter the marital relationship and alter patterns of intimacy, communication, emotional expression, and mutual support. In this context, the marital relationship becomes one of the most important psychosocial environments in which women attempt to cope with the disease. A supportive, empathic, and emotionally responsive marital relationship can help women tolerate the burden of illness, whereas poor communication, emotional distance, unresolved distress, and limited partner support can intensify psychological vulnerability and weaken quality of life. Research on women with breast cancer has increasingly emphasized that marital and couple-based variables should be considered central components of psychosocial care, because breast cancer affects not only the individual patient but also the couple system and the quality of interaction between spouses (Krok et al., 2023; Krok et al., 2025; Zahedi et al., 2024).

Marital relationship quality refers to the overall evaluation of the marital bond in terms of satisfaction, consensus, cohesion, communication, intimacy, and the perceived emotional value of the relationship. Although related constructs have sometimes been discussed under broader concepts of marital functioning, the present study focuses specifically on the quality of marital relationships as a key outcome among married women with breast cancer. In the context of chronic and life-threatening illness, the quality of the marital relationship can determine whether the couple becomes a source of emotional security or a source of additional stress. Breast cancer may challenge previous role patterns, create new caregiving demands, and intensify worries about body image, femininity, sexual intimacy, and emotional dependency. These changes may influence how women perceive their relationship with their spouses and how much emotional closeness, agreement, and satisfaction they experience in marital life. Studies have shown that couple-level processes such as partner communication, illness acceptance, empathy, perceived support, and relational responsiveness are strongly linked to marital satisfaction and marital quality among couples coping with

breast cancer (Chen et al., 2024; KavehFarsani & Worthington Jr, 2024; Krok et al., 2023).

Women with breast cancer may experience significant disturbances in quality of life, especially when the disease disrupts their sense of identity, physical integrity, social functioning, and intimate relationship. Quality of life in this population is shaped not only by medical symptoms but also by psychological resources, emotional regulation, marital intimacy, and perceived relational support. Abedi and Sadeghi reported that emotion regulation and marital intimacy were related to quality of life in women with breast cancer, suggesting that the ability to manage emotions and maintain intimate marital connection can play an important role in women's adaptation to the illness (Abedi & Sadeghi, 2024). Similarly, KavehFarsani and Worthington emphasized the roles of marital empathy, body image, perceived social support, and perceived marital quality in the quality of life of married women with breast cancer, indicating that women's adaptation to breast cancer is strongly embedded in relational and psychosocial processes (KavehFarsani & Worthington Jr, 2024). These findings support the need for interventions that simultaneously address emotional functioning, body-related concerns, marital communication, and the reconstruction of intimacy after cancer.

One of the important psychological difficulties that may interfere with marital relationship quality is alexithymia. Alexithymia refers to difficulty identifying feelings, difficulty describing feelings, and a tendency toward externally oriented thinking. Individuals with higher alexithymia may have trouble recognizing their emotional states, communicating distress to others, and using emotional information to regulate interpersonal behavior. In marital relationships, these difficulties can reduce emotional intimacy, weaken communication, increase loneliness, and limit the couple's ability to respond constructively to stress. Frye-Cox and Hesse showed that alexithymia is related to marital quality through mechanisms such as loneliness and intimate communication, suggesting that emotional unawareness and limited emotional expression can undermine relational closeness and satisfaction (Frye-Cox & Hesse, 2013). In women with breast cancer, alexithymia may be especially problematic because the illness often produces intense fear, sadness, anger, shame, and uncertainty, and the inability to identify and communicate these emotions may prevent the spouse from providing appropriate support.

Alexithymia is also important because it connects individual emotional processes with marital and family outcomes. When a woman is unable to describe her emotional pain, her spouse may misinterpret withdrawal, irritability, silence, or emotional numbness as rejection or indifference. This can create a cycle in which the patient feels misunderstood and the spouse feels helpless, leading to reduced intimacy and lower relationship quality. Studies in marital and family contexts have shown that alexithymia is associated with poorer marital outcomes and weaker marital quality. Ashouri and colleagues found that alexithymia and spiritual intelligence played a role in predicting marital quality of life, highlighting the importance of emotional and meaning-related capacities in marital functioning (Ashouri et al., 2023). Moghaddam and colleagues also reported that alexithymia was linked to marriage quality through marital commitment, suggesting that emotional difficulties may influence the stability and quality of marital bonds (Moghaddam et al., 2024). These findings indicate that reducing alexithymia may be a meaningful therapeutic pathway for improving the marital relationship of women who are coping with breast cancer.

The relationship between emotional functioning and marital quality is also supported by intervention studies. Emotion-focused couple therapy has been shown to improve marital commitment and interpersonal emotion regulation in couples in which one spouse is affected by breast cancer, demonstrating that couple-based emotional interventions can improve relational outcomes when illness places pressure on the marital system (Mobaraki & Esmkhani Akbarinejad, 2024). Acceptance and commitment therapy has also been found to affect couple burnout, alexithymia, and quality of life among women affected by marital problems, indicating that psychological flexibility, acceptance, and value-based action may improve both emotional and relational outcomes (Sadeghi et al., 2021). In addition, solution-focused group couple therapy has been reported to improve intimacy and marital quality of life among women facing major family stressors, suggesting that brief and structured relational interventions can strengthen couple resources and improve marital functioning (Sohrabi Azandaryani & Mirshahi, 2024). These findings collectively show that emotional and marital difficulties are modifiable and that targeted psychological interventions may improve the relational well-being of women under significant psychosocial pressure.

Couple-based interventions are particularly relevant for women with breast cancer because the disease affects both

partners and changes the emotional tasks of the marital relationship. A systematic review and meta-analysis of couple-based interventions for women with genital and breast cancer and their partners showed that such interventions can improve marital outcomes, supporting the value of involving relational processes in psychosocial treatment (Zahedi et al., 2024). Couple-based and relational interventions may create a space in which partners can discuss fears, illness-related changes, sexual and emotional concerns, caregiving expectations, and future uncertainty. They may also help couples move from avoidance and silence toward more direct emotional expression and mutual understanding. For women with breast cancer, this can be particularly important because some concerns, such as body image, sexuality, dependency, and fear of rejection, are closely tied to marital intimacy and may not be adequately addressed by individual symptom-focused approaches.

The therapeutic package examined in the present study was based on the needs of married women with breast cancer and focused on improving marital quality of life through emotional, cognitive, interpersonal, and self-care components. Such a package is theoretically justified because the marital consequences of breast cancer are multidimensional. Women may need emotion regulation skills to manage fear and distress, cognitive restructuring to modify catastrophic illness-related thoughts, body acceptance to cope with physical changes, communication skills to express needs to their spouses, and intimacy-building strategies to restore emotional and sexual closeness. The relevance of these components is consistent with evidence showing that perceived marital quality, empathy, social support, body image, and emotional regulation are linked to quality of life and marital outcomes in women with breast cancer (Abedi & Sadeghi, 2024; KavehFarsani & Worthington Jr, 2024). Therefore, a structured therapeutic package that integrates emotional awareness, cognitive change, relational communication, meaning-making, and intimacy reconstruction may be especially appropriate for this population.

Mindfulness therapy is another intervention that may be useful for women with breast cancer because it emphasizes present-moment awareness, nonjudgmental observation, acceptance of internal experiences, and reduced automatic reactivity to distressing thoughts and emotions. Although mindfulness does not directly focus on the marital relationship in the same way as a marital quality of life-based package, it may indirectly improve relational functioning by reducing emotional avoidance, increasing awareness of

bodily and emotional states, and helping participants respond more calmly to interpersonal stress. In women experiencing breast cancer, mindfulness skills may help them observe fear, sadness, body-related distress, and relational concerns without being overwhelmed by them. By improving emotional awareness and reducing reactive coping, mindfulness may also reduce alexithymic tendencies and support more open communication with the spouse. This mechanism is consistent with research showing that emotional regulation and interpersonal emotional processes are closely associated with quality of life and marital outcomes in women facing breast cancer and other relational stressors (Abedi & Sadeghi, 2024; Mobaraki & Esmkhani Akbarinejad, 2024).

Comparing a marital quality of life-based therapeutic package with mindfulness therapy is important because the two interventions may operate through partly different mechanisms. The therapeutic package directly targets the marital and illness-related experiences of women with breast cancer, including communication, intimacy, body image, family roles, and emotional needs within marriage. In contrast, mindfulness therapy primarily targets awareness, acceptance, attention regulation, and nonjudgmental observation of internal experience. Both approaches may improve marital relationship quality and reduce alexithymia, but the therapeutic package may be expected to produce stronger relational change because it directly addresses the interpersonal and marital dimensions of the disease experience. Studies on marital and relational variables support the importance of targeted relational mechanisms. For example, partner communication and illness acceptance have been linked with marital satisfaction among couples coping with breast cancer (Krok et al., 2023; Krok et al., 2025), while early maladaptive schemas and resilience have been used to predict marital relationship quality among married women (Pour Meqdad et al., 2024). Such evidence suggests that interventions focused on the specific relational determinants of marital quality may produce stronger outcomes than approaches that work mainly through general emotional awareness.

The broader literature on marital quality also demonstrates that marital functioning is related to psychological health, emotional well-being, and adaptation to stress. Whisman and Collazos showed that marital quality and marital dissolution have longitudinal associations with generalized anxiety disorder, indicating that marital quality is not merely a private relational matter but a meaningful predictor of mental health over time (Whisman & Collazos,

2023). Research on differentiation of self and dyadic functioning has also shown that the ability to maintain emotional balance and relational connection is associated with marital quality in married women (TÖNBÜL & Özdemir, 2023). In addition, Bertoni emphasized the conceptual importance of marital relationship processes within quality of life and well-being research, supporting the view that marital relationships are central to broader psychosocial functioning (Bertoni et al., 2024). These findings are relevant to breast cancer because women dealing with cancer are exposed to intense psychological demands, and the quality of the marital relationship may either buffer or intensify these demands.

Evidence from other clinical populations further supports the relationship between marital functioning and quality of life. Pereira and colleagues found that marital functioning was related to quality of life in individuals with fibromyalgia, another chronic condition characterized by long-term physical and psychological burden (Pereira et al., 2025). Although fibromyalgia differs from breast cancer, both conditions can influence daily functioning, emotional well-being, role performance, and couple interactions. Likewise, research on cognitive-behavioral therapy and behavioral marital therapy among couples with anxiety disorders has shown that psychological and marital interventions can improve quality of life and relational outcomes, suggesting that structured therapeutic work can benefit both individual and couple-level functioning (Kavitha et al., 2024). These studies support the logic of applying structured psychological interventions to women with breast cancer, particularly when the intervention addresses both emotional regulation and relational quality.

Despite the growing evidence on breast cancer, marital functioning, and emotional processes, several gaps remain. First, many studies have examined associations among marital quality, communication, emotional regulation, social support, and quality of life, but fewer have directly compared two active psychological interventions in a quasi-experimental design. Second, although mindfulness therapy is widely used for emotional distress, its comparative effectiveness against a marital quality of life-based therapeutic package for married women with breast cancer requires further empirical examination. Third, alexithymia has been recognized as an important factor in marital quality, but intervention studies that evaluate change in alexithymia alongside marital relationship quality among women with breast cancer are limited. Given that alexithymia can impair emotional communication and intimacy, and given that

marital relationship quality may shape women's adaptation to breast cancer, both outcomes should be studied together within an intervention framework (Ashouri et al., 2023; Frye-Cox & Hesse, 2013; Moghaddam et al., 2024).

Based on these considerations, the present study was conducted to compare the effectiveness of a marital quality of life-based therapeutic package and mindfulness therapy on marital relationship quality and alexithymia in married women with breast cancer.

2. Methods and Materials

2.1. Study design and Participant

The present study was conducted using a quantitative quasi-experimental design with a pretest, posttest, and three-month follow-up, including two experimental groups and one control group. The statistical population consisted of married women with breast cancer who had referred to treatment centers in Babol, Iran, and at least one year had passed since their diagnosis. The study sample included 60 married women with breast cancer who were selected through purposive sampling based on predefined inclusion and exclusion criteria and were then randomly assigned to three groups: the marital quality of life-based therapeutic package group, the mindfulness therapy group, and the control group, with 20 participants in each group. The required sample size was estimated using G*Power software based on an effect size of 0.35, an alpha error probability of 0.05, a statistical power of 0.75, three groups, and three measurement stages. Although the minimum required sample size was estimated to be 48 participants, 60 participants were selected to compensate for possible attrition during the intervention and follow-up process. The inclusion criteria were being female, being married, having at least middle school education, having been diagnosed with breast cancer for at least one year, residing in Babol, having the physical and psychological ability to participate in the intervention sessions, willingness to participate in the therapeutic programs, providing informed consent, and not participating simultaneously in similar psychological or educational interventions. The exclusion criteria included absence from more than two intervention sessions and any physical, psychological, or personal condition that made continued participation in the study difficult. Before the implementation of the interventions, all participants completed the research questionnaires as the pretest. The two experimental groups then received their respective interventions, while the control group received no

psychological intervention during the study period. After completion of the intervention sessions, all three groups completed the questionnaires again as the posttest, and the follow-up assessment was conducted three months after the posttest. Throughout the study, participants were informed about the purpose of the research, the voluntary nature of participation, confidentiality of their information, and their right to withdraw from the study at any stage.

2.2. Measures

The Toronto Alexithymia Scale was used to measure alexithymia. This scale is a 20-item self-report instrument designed to assess difficulties in emotional awareness and emotional expression. It consists of three subscales: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. Items are scored on a five-point Likert scale ranging from completely disagree to completely agree, with higher scores indicating greater alexithymia. Items 4, 5, 10, 18, and 19 are reverse scored before calculating the total score. The total alexithymia score is obtained by summing the scores of all items, and subscale scores are calculated by summing the items belonging to each dimension. Previous psychometric evaluations of the Persian version of the Toronto Alexithymia Scale have supported its validity and reliability. Cronbach's alpha coefficients have been reported as acceptable for the total scale and its main subscales, and test-retest reliability over a four-week interval has confirmed the temporal stability of the instrument. Evidence for concurrent validity has also been reported through significant correlations between alexithymia scores and related psychological constructs such as emotional intelligence, psychological well-being, and psychological distress.

The Marital Relationship Quality Questionnaire was used to assess the quality of marital relationships. This instrument was developed by Busby and colleagues in 1995 and is used to evaluate the overall quality of the marital relationship. The questionnaire consists of 14 items and includes three subscales: consensus, satisfaction, and cohesion. The total score represents the overall quality of the marital relationship, with higher scores indicating better marital relationship quality. The items are scored on a six-point Likert scale, and the scoring range reflects the degree of agreement, satisfaction, and cohesion experienced in the marital relationship. The reliability of the questionnaire has been supported in previous studies through Cronbach's alpha coefficients reported for the subscales of consensus,

satisfaction, and cohesion. In Persian studies, the internal consistency and split-half reliability of the questionnaire have also been reported as satisfactory, indicating acceptable homogeneity among the items and adequate reliability for assessing marital relationship quality among married individuals.

2.3. Interventions

The marital quality of life-based therapeutic package was implemented for the first experimental group in 11 structured sessions. The intervention was designed to address the psychological, emotional, relational, and family-related challenges experienced by married women with breast cancer, with the central purpose of improving marital relationship quality and reducing emotional difficulties. In the first session, the therapeutic process was introduced, group members became familiar with the treatment framework, expectations were clarified, and a safe therapeutic atmosphere was established for expressing concerns related to illness and marital life. The second session focused on psychoeducation about normal psychological reactions to fear and anxiety, emotional responses to cancer, and introductory emotion regulation skills, including calm breathing. The third session addressed automatic negative thoughts, the relationship between thoughts, emotions, and behaviors, and cognitive restructuring of illness-related concerns. The fourth session focused on personality characteristics and their influence on emotional reactions and marital interactions. The fifth session addressed body image, emotional reactions to bodily changes, acceptance of the body, and redefinition of feminine identity after cancer through body-based mindfulness exercises. The sixth session taught emotion regulation and distress tolerance skills, including nonjudgmental observation and sensory calming strategies. The seventh session focused on life values, meaning-making in the experience of illness, gratitude, and strengthening hope. The eighth session emphasized marital communication skills, including active listening, emotional expression, and the use of “I” statements when communicating needs to the spouse. The ninth session addressed the impact of illness on intimacy and taught strategies for rebuilding emotional and gradual sexual intimacy within the marital relationship. The tenth session focused on redefining family roles, strengthening social and family support, requesting help, and modifying dysfunctional beliefs related to financial and role-related

pressures. The eleventh session reviewed the skills learned throughout the intervention, helped participants design a self-care plan, identified warning signs for emotional and relational distress, strengthened supportive resources, and provided closure to the therapeutic process. Participants were given between-session assignments such as recording daily emotions, completing thought records, practicing emotion regulation skills, engaging in honest conversations with their spouses, practicing nonsexual intimacy, negotiating family responsibilities, and continuing self-care exercises.

Mindfulness therapy was implemented for the second experimental group in eight 60-minute sessions based on the mindfulness-based therapeutic approach. The first session introduced formal mindfulness practices, including body scan exercises, meditation, mindful movement, and the three-minute breathing space; participants were also asked to choose one routine daily activity and perform it with moment-to-moment awareness during the week. The second session focused on awareness of pleasant daily events, attention to bodily sensations, thoughts, and emotions during these experiences, and using breathing awareness to stabilize attention in the present moment. The third session extended these practices to unpleasant events, helping participants observe and record bodily sensations, thoughts, and emotional states associated with ordinary stressful situations while further developing attentional focus through meditation. The fourth session focused on understanding emotions as the result of situations and interpretations, and participants were guided to imagine an unpleasant situation in a relaxed state in order to observe how thoughts influence emotional responses. The fifth session emphasized acceptance, nonjudgmental awareness, and reducing habitual emotional reactivity to unpleasant experiences by observing bodily sensations and negative thoughts without attempting to suppress or change them. The sixth session addressed the reciprocal relationship between thoughts and emotions and taught participants that interpretations are influenced by past experiences and current mood states; practices such as mindful breathing, sensory awareness, and seated meditation were used to strengthen present-moment awareness. The seventh session focused on the principle that thoughts are not facts and helped participants recognize negative thinking patterns, observe them from a broader perspective, and choose more adaptive responses rather than reacting automatically. The eighth session reviewed the main mindfulness skills and emphasized the importance of intentional, stable, and nonjudgmental attention to present

experiences, helping participants reduce habitual and automatic reactions and continue mindfulness practices in daily life.

2.4. Data Analysis

Data analysis was conducted using SPSS version 22. In the descriptive statistics section, means and standard deviations were calculated for marital relationship quality and alexithymia across the three groups and three measurement stages. Before conducting inferential analyses, the assumptions required for parametric testing were examined. The Shapiro-Wilk test was used to assess the normality of data distribution, Levene's test was used to evaluate the homogeneity of variances, Box's M test was used to examine the equality of covariance matrices, the homogeneity of regression slopes was assessed where required, and Mauchly's test of sphericity was used for repeated-measures analysis. In cases where the assumption of sphericity was violated, corrected statistics such as the Greenhouse-Geisser correction were considered. To compare the effectiveness of the marital quality of life-based

therapeutic package and mindfulness therapy on marital relationship quality and alexithymia across pretest, posttest, and follow-up stages, multivariate analysis of covariance and repeated-measures analysis of variance were used. Group, time, and group-by-time interaction effects were examined to determine whether changes in the dependent variables differed significantly among the three groups over time. Post hoc comparisons were performed when significant effects were observed in order to identify the specific differences between measurement stages and intervention groups. The significance level for all statistical analyses was set at 0.05.

3. Findings and Results

Before conducting inferential analyses, descriptive statistics were calculated for alexithymia and marital relationship quality across the three study groups and three measurement stages. Table 1 presents the means and standard deviations of the mindfulness therapy group, the marital quality of life-based therapeutic package group, and the control group at pretest, posttest, and follow-up.

Table 1

Descriptive Statistics of Alexithymia and Marital Relationship Quality Across Groups and Measurement Stages

Variable / Subscale	Stage	Mindfulness Therapy Mean $\pm$ SD	Therapeutic Package Mean $\pm$ SD	Control Mean $\pm$ SD
Alexithymia – Difficulty Identifying Feelings	Pretest	22.40 $\pm$ 3.55	22.35 $\pm$ 3.51	22.25 $\pm$ 3.40
	Posttest	18.10 $\pm$ 3.24	15.55 $\pm$ 2.91	22.10 $\pm$ 3.36
	Follow-up	18.55 $\pm$ 3.40	15.95 $\pm$ 2.80	22.05 $\pm$ 3.44
Alexithymia – Difficulty Describing Feelings	Pretest	15.30 $\pm$ 2.62	15.10 $\pm$ 2.45	15.25 $\pm$ 2.51
	Posttest	12.20 $\pm$ 2.51	10.70 $\pm$ 2.10	15.20 $\pm$ 2.49
	Follow-up	12.35 $\pm$ 2.58	10.95 $\pm$ 2.00	15.15 $\pm$ 2.54
Alexithymia – Externally Oriented Thinking	Pretest	26.29 $\pm$ 3.80	26.43 $\pm$ 3.60	26.45 $\pm$ 3.65
	Posttest	23.75 $\pm$ 3.45	20.12 $\pm$ 3.20	26.42 $\pm$ 3.61
	Follow-up	23.15 $\pm$ 3.60	20.20 $\pm$ 3.10	26.39 $\pm$ 3.62
Alexithymia – Total Score	Pretest	63.99 $\pm$ 6.35	63.88 $\pm$ 6.20	63.95 $\pm$ 6.25
	Posttest	54.05 $\pm$ 5.95	46.37 $\pm$ 5.33	63.85 $\pm$ 6.30
	Follow-up	54.35 $\pm$ 6.20	47.10 $\pm$ 5.10	63.90 $\pm$ 6.27
Marital Relationship Quality – Consensus	Pretest	22.25 $\pm$ 2.90	22.10 $\pm$ 2.85	22.20 $\pm$ 2.88
	Posttest	26.35 $\pm$ 2.95	28.20 $\pm$ 2.80	22.15 $\pm$ 2.90
	Follow-up	26.40 $\pm$ 2.90	28.00 $\pm$ 2.75	22.10 $\pm$ 2.88
Marital Relationship Quality – Satisfaction	Pretest	18.35 $\pm$ 2.70	18.20 $\pm$ 2.65	18.30 $\pm$ 2.68
	Posttest	22.55 $\pm$ 2.60	24.35 $\pm$ 2.55	18.25 $\pm$ 2.67
	Follow-up	22.35 $\pm$ 2.55	24.10 $\pm$ 2.50	18.28 $\pm$ 2.65
Marital Relationship Quality – Cohesion	Pretest	10.80 $\pm$ 1.60	10.70 $\pm$ 1.55	10.75 $\pm$ 1.58
	Posttest	13.65 $\pm$ 1.50	14.65 $\pm$ 1.45	10.70 $\pm$ 1.57
	Follow-up	13.80 $\pm$ 1.45	14.50 $\pm$ 1.40	10.72 $\pm$ 1.55
Marital Relationship Quality – Total Score	Pretest	51.40 $\pm$ 4.85	51.00 $\pm$ 4.75	51.25 $\pm$ 4.80
	Posttest	62.55 $\pm$ 4.60	67.20 $\pm$ 4.40	51.20 $\pm$ 4.79
	Follow-up	62.55 $\pm$ 4.65	66.85 $\pm$ 4.45	51.23 $\pm$ 4.81

As shown in Table 1, the three groups had relatively similar mean scores at the pretest stage for both alexithymia and marital relationship quality. After the interventions,

alexithymia decreased in both experimental groups, with a stronger reduction in the therapeutic package group. The total alexithymia score decreased from 63.99 to 54.05 in the

mindfulness group and from 63.88 to 46.37 in the therapeutic package group, while the control group remained almost unchanged. This reduction was largely maintained at follow-up. Similarly, marital relationship quality increased in both experimental groups. The total marital relationship quality score increased from 51.40 to 62.55 in the mindfulness group and from 51.00 to 67.20 in the therapeutic package group, whereas the control group showed no meaningful change. The descriptive pattern suggests that both interventions were effective, but the marital quality of life-based therapeutic package produced greater improvement in marital relationship quality and a greater reduction in alexithymia.

The assumptions required for repeated-measures analysis of variance were examined before inferential testing. The results of the Shapiro-Wilk test showed that the distribution of scores for alexithymia, marital relationship quality, and their subscales did not significantly deviate from normality across groups and measurement stages, with all significance values greater than .05. Levene's test also confirmed the homogeneity of variances for the study variables across groups, with all p-values greater than .05. In addition, Mauchly's test of sphericity was not significant for the repeated-measures variables, indicating that the assumption of sphericity was met. Therefore, the data satisfied the main assumptions for repeated-measures analysis of variance, and no correction for violation of sphericity was required.

Table 2

Repeated-Measures Analysis of Variance for Alexithymia and Marital Relationship Quality

Variable / Subscale	Source of Variation	SS	df	MS	F	p	η^2
Alexithymia – Difficulty Identifying Feelings	Group	321.47	2	160.74	14.92	<.001	.40
	Time	118.65	2	59.32	12.85	<.001	.38
	Group $\times$ Time	91.62	4	22.91	9.77	<.001	.34
Alexithymia – Difficulty Describing Feelings	Group	284.30	2	142.15	16.83	<.001	.43
	Time	102.18	2	51.09	11.62	<.001	.36
	Group $\times$ Time	78.47	4	19.62	8.46	<.001	.32
Alexithymia – Externally Oriented Thinking	Group	145.77	2	72.89	11.07	<.001	.34
	Time	86.52	2	43.26	9.94	<.001	.33
	Group $\times$ Time	69.81	4	17.45	7.92	<.001	.30
Alexithymia – Total Score	Group	662.58	2	331.29	19.34	<.001	.48
	Time	219.34	2	109.67	13.62	<.001	.39
	Group $\times$ Time	157.83	4	39.46	11.08	<.001	.36
Marital Relationship Quality – Consensus	Group	298.61	2	149.30	15.98	<.001	.43
	Time	281.34	2	140.67	18.52	<.001	.42
	Group $\times$ Time	198.66	4	49.67	10.98	<.001	.39
Marital Relationship Quality – Satisfaction	Group	276.49	2	138.25	17.64	<.001	.45
	Time	267.82	2	133.91	21.43	<.001	.45
	Group $\times$ Time	187.23	4	46.80	9.31	<.001	.37
Marital Relationship Quality – Cohesion	Group	210.37	2	105.19	13.31	<.001	.39
	Time	154.67	2	77.33	13.85	<.001	.38
	Group $\times$ Time	144.21	4	36.05	8.27	<.001	.35
Marital Relationship Quality – Total Score	Group	685.47	2	342.73	21.61	<.001	.52
	Time	639.88	2	319.94	25.78	<.001	.52
	Group $\times$ Time	433.21	4	108.30	12.96	<.001	.47

The results presented in Table 2 show that the main effects of group and time, as well as the interaction effect of group and time, were statistically significant for both alexithymia and marital relationship quality. For the total alexithymia score, the group effect was significant, $F = 19.34$, $p < .001$, $\eta^2 = .48$, the time effect was significant, $F = 13.62$, $p < .001$, $\eta^2 = .39$, and the group $\times$ time interaction was also significant, $F = 11.08$, $p < .001$, $\eta^2 = .36$. These findings indicate that changes in alexithymia differed significantly among the three groups across the pretest,

posttest, and follow-up stages. For the total score of marital relationship quality, the group effect was significant, $F = 21.61$, $p < .001$, $\eta^2 = .52$, the time effect was significant, $F = 25.78$, $p < .001$, $\eta^2 = .52$, and the group $\times$ time interaction was significant, $F = 12.96$, $p < .001$, $\eta^2 = .47$. The significant interaction effects indicate that both interventions produced meaningful changes over time compared with the control group, with the therapeutic package showing stronger effects than mindfulness therapy.

Table 3
Bonferroni Post-Hoc Comparisons for the Main Study Variables

Variable	Group	Comparison	Mean Difference	SE	p
Alexithymia – Total Score	Mindfulness Therapy	Pretest – Posttest	9.94	2.27	<.001
		Pretest – Follow-up	9.64	2.14	<.001
		Posttest – Follow-up	-0.30	1.46	.812
	Therapeutic Package	Pretest – Posttest	17.51	2.18	<.001
		Pretest – Follow-up	16.78	2.04	<.001
		Posttest – Follow-up	-0.73	1.42	.617
	Control	Pretest – Posttest	0.10	1.96	.943
		Pretest – Follow-up	0.05	2.01	.971
		Posttest – Follow-up	-0.05	1.32	.965
Marital Relationship Quality – Total Score	Mindfulness Therapy	Pretest – Posttest	11.15	2.03	<.001
		Pretest – Follow-up	11.15	2.07	<.001
		Posttest – Follow-up	0.00	1.28	1.000
	Therapeutic Package	Pretest – Posttest	16.20	2.18	<.001
		Pretest – Follow-up	15.85	2.31	<.001
		Posttest – Follow-up	-0.35	1.24	.735
	Control	Pretest – Posttest	-0.05	1.84	.962
		Pretest – Follow-up	-0.02	1.76	.981
		Posttest – Follow-up	0.03	1.58	.974

The Bonferroni post-hoc results in Table 3 show that both experimental groups demonstrated significant improvement from pretest to posttest and from pretest to follow-up in both main study variables. In the mindfulness therapy group, alexithymia significantly decreased from pretest to posttest and from pretest to follow-up, while marital relationship quality significantly increased across the same comparisons. In the therapeutic package group, the same pattern was observed, but the magnitude of change was greater. The total alexithymia score decreased by 17.51 points from pretest to posttest in the therapeutic package group, compared with 9.94 points in the mindfulness group. Similarly, marital relationship quality increased by 16.20 points in the therapeutic package group, compared with 11.15 points in the mindfulness group. The differences between posttest and follow-up were not significant in either experimental group, indicating that the intervention effects were maintained over time. In contrast, the control group showed no significant differences between pretest, posttest, and follow-up. Overall, the findings indicate that both interventions were effective, but the marital quality of life-based therapeutic package had greater effectiveness than mindfulness therapy in improving marital relationship quality and reducing alexithymia among married women with breast cancer.

4. Discussion

The present study aimed to compare the effectiveness of a marital quality of life-based therapeutic package and

mindfulness therapy on marital relationship quality and alexithymia in married women with breast cancer. The findings showed that both interventions produced significant improvements in marital relationship quality and significant reductions in alexithymia from pretest to posttest, and these effects were maintained at the follow-up stage. However, the marital quality of life-based therapeutic package showed greater effectiveness than mindfulness therapy in both outcome variables. The results indicated that the therapeutic package had a stronger impact on the total score and subscales of marital relationship quality, including consensus, satisfaction, and cohesion. Similarly, the therapeutic package produced a greater reduction in alexithymia and its components, including difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. The lack of significant change between posttest and follow-up in the experimental groups suggests that the observed improvements were not temporary and were relatively stable over time. In contrast, the control group showed no meaningful change in either marital relationship quality or alexithymia, confirming that the improvements observed in the experimental groups were attributable to the implemented interventions rather than the passage of time.

The finding that the marital quality of life-based therapeutic package improved marital relationship quality is consistent with previous research emphasizing the central role of marital and couple-level processes in the adaptation of women with breast cancer. Breast cancer creates physical,

emotional, sexual, and relational challenges that may affect the couple system as a whole. Therefore, interventions that directly address communication, intimacy, emotional needs, body image, family roles, and illness-related concerns are likely to improve the quality of the marital relationship. This interpretation is aligned with the findings of Krok and colleagues, who showed that marital satisfaction, partner communication, and illness acceptance are closely connected among couples coping with breast cancer (Krok et al., 2023; Krok et al., 2025). It is also supported by Zahedi and colleagues' systematic review and meta-analysis, which indicated that couple-based interventions can improve marital outcomes among women with breast and genital cancers and their partners (Zahedi et al., 2024). The present results extend this literature by showing that a structured therapeutic package focused on marital quality of life can improve not only general relational functioning but also specific dimensions of marital relationship quality among women with breast cancer.

The stronger effectiveness of the therapeutic package compared with mindfulness therapy may be explained by its direct focus on the lived marital consequences of breast cancer. While mindfulness therapy primarily strengthens awareness, acceptance, and nonjudgmental attention to internal experiences, the therapeutic package directly targeted the interpersonal and relational difficulties that women with breast cancer may experience in marriage. The package addressed emotional expression, communication with the spouse, reconstruction of intimacy, acceptance of bodily changes, meaning-making, emotion regulation, family role negotiation, and self-care. These components correspond closely with factors identified in previous studies as determinants of quality of life and marital functioning in women with breast cancer. For instance, Abedi and Sadeghi found that emotion regulation and marital intimacy were related to quality of life in women with breast cancer (Abedi & Sadeghi, 2024). KavehFarsani and Worthington also emphasized that marital empathy, body image, perceived social support, and perceived marital quality are important predictors of quality of life in married women with breast cancer (KavehFarsani & Worthington Jr, 2024). Therefore, the greater effectiveness of the therapeutic package can be attributed to its multidimensional and disease-sensitive structure, which addressed the emotional, cognitive, bodily, and marital needs of the participants simultaneously.

The finding that mindfulness therapy also improved marital relationship quality is theoretically meaningful. Although mindfulness does not primarily function as a

marital intervention, it can affect marital relationships indirectly by improving emotional awareness, reducing reactivity, increasing tolerance of distress, and helping individuals respond to interpersonal stressors more calmly. Women with breast cancer may experience fear, sadness, shame, irritability, and worry about their body and future, all of which can influence their marital interactions. Mindfulness skills may help participants observe these experiences without immediate avoidance or reactive behavior, thereby creating more space for constructive communication with the spouse. This finding is consistent with intervention evidence showing that psychological treatments can improve both individual and relational outcomes. For example, Sadeghi and colleagues found that acceptance and commitment therapy was effective in reducing alexithymia and improving quality of life in women facing marital difficulties (Sadeghi et al., 2021). Kavitha and colleagues also reported that cognitive-behavioral and behavioral marital interventions improved quality of life and relational outcomes in couples facing anxiety-related difficulties (Kavitha et al., 2024). These studies support the view that interventions targeting psychological flexibility, emotional awareness, and behavioral change can produce relational benefits.

The reduction of alexithymia in both intervention groups is another important finding. Alexithymia involves difficulty identifying feelings, difficulty describing feelings, and a tendency toward externally oriented thinking. These features can be particularly problematic for married women with breast cancer because the disease produces intense emotional experiences that need to be recognized, processed, and communicated within the marital relationship. When a woman has difficulty identifying and expressing her emotions, her spouse may not understand her distress accurately, and emotional support may become less effective. The present findings are consistent with Frye-Cox and Hesse, who showed that alexithymia is associated with marital quality through loneliness and intimate communication (Frye-Cox & Hesse, 2013). They are also consistent with Ashouri and colleagues, who reported that alexithymia plays a role in predicting marital quality of life (Ashouri et al., 2023), and with Moghaddam and colleagues, who found that alexithymia is linked to marriage quality through marital commitment (Moghaddam et al., 2024). These findings suggest that reducing alexithymia may improve not only emotional functioning but also the quality of marital communication and intimacy.

The therapeutic package may have reduced alexithymia more strongly than mindfulness therapy because it combined emotional awareness training with explicit interpersonal application. The participants were not only encouraged to notice emotions but also to label them, understand the connection between thoughts, emotions, and behaviors, express emotional needs to their spouses, and practice more adaptive communication. This is important because alexithymia is not merely an internal deficit in emotional recognition; it also has interpersonal consequences. The intervention's focus on "I" statements, active listening, emotional disclosure, and discussion of marital needs may have helped participants translate emotional awareness into relational expression. This explanation is consistent with Mobaraki and Esmkhani Akbarinejad, who found that emotion-focused couple therapy improved marital commitment and interpersonal emotion regulation in couples in which one spouse had breast cancer (Mobaraki & Esmkhani Akbarinejad, 2024). It is also consistent with Sohrabi Azandaryani and Mirshahi, who reported that solution-focused group couple therapy improved intimacy and marital quality of life among women facing significant family stressors (Sohrabi Azandaryani & Mirshahi, 2024). Thus, interventions that integrate emotional and relational components may be especially effective for reducing alexithymia in clinical marital contexts.

The observed improvements in marital relationship quality can also be interpreted in light of broader research on relational functioning and psychological well-being. High-quality marital relationships are associated with better emotional security, greater perceived support, and more adaptive coping with stress. Conversely, poor marital quality may increase anxiety, emotional distance, loneliness, and dissatisfaction. Whisman and Collazos demonstrated that marital quality has longitudinal associations with generalized anxiety disorder, highlighting the close relationship between marital functioning and psychological health (Whisman & Collazos, 2023). TÖNBÜL and Özdemir also showed that differentiation of self is related to marital quality through dyadic functioning in married women, suggesting that the ability to regulate emotions while maintaining relational closeness is central to marital well-being (TÖNBÜL & Özdemir, 2023). In the present study, the therapeutic package likely improved marital relationship quality because it helped participants regulate emotions without withdrawing from the relationship and express needs without escalating conflict.

The superiority of the therapeutic package may further be explained by the fact that marital relationship quality is influenced by multiple cognitive, emotional, and interpersonal determinants. Pour Meqdad and colleagues found that early maladaptive schemas and resilience predicted marital relationship quality among married women (Pour Meqdad et al., 2024). This finding suggests that marital quality is shaped by both internal psychological patterns and adaptive coping capacities. The therapeutic package in the present study included cognitive restructuring, recognition of negative automatic thoughts, meaning-making, emotion regulation, and strengthening of support-seeking behaviors, all of which may weaken maladaptive interpretations and strengthen resilience in the marital context. In addition, the intervention helped participants reinterpret illness-related changes and reduce the psychological burden of distorted beliefs about their body, femininity, marital value, or dependency. Such mechanisms may explain why the therapeutic package produced greater gains than mindfulness therapy, especially in the relational subscales of consensus, satisfaction, and cohesion.

The findings are also consistent with the conceptualization of marital quality as a core component of well-being and quality of life. Bertoni emphasized that marital functioning is an important element in quality of life and well-being research because marriage is one of the primary contexts in which adults experience support, stress, intimacy, and shared meaning (Bertoni et al., 2024). Pereira and colleagues similarly found that marital functioning was associated with quality of life in people with fibromyalgia, indicating that chronic health conditions often interact with relational processes and broader well-being (Pereira et al., 2025). Although breast cancer and fibromyalgia are clinically different conditions, both can disrupt daily functioning, emotional balance, and partner interactions. Therefore, the present findings support the broader view that improving relational quality can be an important pathway for strengthening adaptation to chronic or serious illness.

Another relevant point is that women with breast cancer may vary in their relational needs and patterns of marital functioning. Chen and colleagues identified different profiles and determinants of marital functioning among patients with breast cancer, suggesting that women do not experience the relational consequences of cancer in the same way (Chen et al., 2024). This heterogeneity may explain why a multidimensional therapeutic package can be particularly beneficial: it provides several entry points for change,

including emotional regulation, body acceptance, communication, intimacy, meaning, and self-care. Participants who are more distressed by body image may benefit from body acceptance exercises, while those who experience emotional distance may benefit more from communication and intimacy-building tasks. Therefore, a flexible but structured package may be more responsive to the diverse needs of married women with breast cancer than a general intervention focused primarily on mindfulness skills.

5. Conclusion

Overall, the results of the present study indicate that both mindfulness therapy and the marital quality of life-based therapeutic package are effective for improving marital relationship quality and reducing alexithymia in married women with breast cancer, but the therapeutic package is more effective. The findings support the importance of designing interventions that are sensitive to the specific psychosocial and marital challenges of breast cancer. In particular, interventions that combine emotional awareness, cognitive restructuring, body acceptance, marital communication, intimacy restoration, family role management, and self-care appear to be well suited to the needs of this population. The persistence of treatment gains at follow-up further suggests that participants were able to maintain the acquired skills after the end of the intervention. These findings contribute to the literature by showing that a marital quality of life-based therapeutic package can produce stronger and more stable improvements than mindfulness therapy in both emotional and marital domains.

6. Limitations and Suggestions

This study had several limitations that should be considered when interpreting the findings. First, the sample was limited to married women with breast cancer who referred to treatment centers in Babol, which may restrict the generalizability of the results to women from other regions, cultural contexts, illness stages, or treatment conditions. Second, the sample size was relatively limited, and although it was adequate for the statistical design, larger samples would provide more stable estimates of intervention effects. Third, the study relied on self-report questionnaires, which may be influenced by social desirability, response bias, emotional state at the time of assessment, or participants' willingness to disclose marital and emotional difficulties. Fourth, the follow-up period was limited to three months,

and longer follow-up assessments are needed to determine the long-term durability of the intervention effects. Finally, the study did not include direct reports from spouses, which means that changes in marital relationship quality were assessed only from the perspective of the participating women.

Future studies should replicate this research with larger and more diverse samples from different cities, clinical settings, cancer stages, and treatment phases to improve the generalizability of the findings. It is also recommended that future research include both members of the couple so that changes in marital relationship quality, communication, intimacy, and emotional expression can be assessed from a dyadic perspective. Longer follow-up periods, such as six months or one year, would help determine whether the effects of the therapeutic package remain stable over time. Future studies may also compare this package with other active interventions, such as emotion-focused therapy, acceptance and commitment therapy, cognitive-behavioral couple therapy, or supportive-expressive therapy. In addition, future research could examine mediating variables such as emotion regulation, body image, perceived partner support, sexual intimacy, illness acceptance, and psychological flexibility to clarify the mechanisms through which the intervention improves marital relationship quality and reduces alexithymia.

The findings suggest that psychological services for married women with breast cancer should include structured interventions that address both emotional and marital dimensions of the illness experience. Therapists and health psychologists working with this population can use marital quality of life-based therapeutic components to help women identify and express emotions, communicate needs to their spouses, cope with body image concerns, rebuild emotional and sexual intimacy, manage family role changes, and maintain self-care. Mindfulness exercises may also be useful as supportive techniques for increasing present-moment awareness and reducing emotional reactivity, but they may be more effective when combined with direct relational and marital skills. Oncology centers, counseling clinics, and rehabilitation programs should consider integrating couple-sensitive psychological interventions into routine supportive care for women with breast cancer, especially for patients who report emotional suppression, communication difficulties, reduced intimacy, or decreased marital satisfaction.

Authors' Contributions

Authors equally contributed to this article.

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

Transparency Statement

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Declaration 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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