

The Effectiveness of Positive Psychotherapy on Perceived Stress, Health Anxiety, and Hope in Women with Breast Cancer

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ABSTRACT

Objective: This study aimed to investigate the effectiveness of positive psychotherapy in reducing perceived stress and health anxiety while enhancing hope among women diagnosed with breast cancer.

Methods and Materials: A randomized clinical trial with a non-equivalent group design was conducted in Tehran in 2023. The sample consisted of 30 women with breast cancer who were selected through purposive sampling and randomly assigned to one of two experimental groups receiving positive psychotherapy or a control group. The intervention consisted of ten 90-minute sessions based on Seligman's (2006) positive psychotherapy protocol. Data were collected using the Perceived Stress Scale (PSS), the Health Anxiety Inventory (HAI), and Snyder's Hope Scale. All assessments were performed at three stages: pretest, posttest, and a follow-up. Data analysis was performed using repeated measures ANOVA and Bonferroni post-hoc tests in SPSS v22.

Findings: Multivariate analysis of variance indicated a significant interaction between time and group for all outcome variables ($p < 0.001$). Repeated measures ANOVA showed significant reductions in perceived stress ($F = 70.48$, $p < 0.001$, $\eta^2 = 0.71$) and health anxiety ($F = 120.30$, $p < 0.001$, $\eta^2 = 0.81$), and a significant increase in hope ($F = 70.50$, $p < 0.001$, $\eta^2 = 0.71$) in the experimental group compared to the control group. Bonferroni post-hoc tests confirmed significant improvements from pretest to both posttest and follow-up stages in all three variables for the experimental group.

Conclusion: The findings support the effectiveness of positive psychotherapy in significantly improving psychological outcomes among women with breast cancer. This intervention offers a viable therapeutic approach to mitigate stress and anxiety while fostering hope, thereby enhancing psychological well-being in this population.

Keywords: Positive psychotherapy, perceived stress, health anxiety, hope, women, breast cancer.

1. Introduction

Breast cancer is the most common malignancy among women worldwide and remains a significant cause of physical, psychological, and social suffering. Women diagnosed with breast cancer often experience considerable emotional challenges that extend far beyond the initial shock of diagnosis. The chronic nature of the disease, combined with its treatment complexities—such as mastectomy, chemotherapy, and radiation—contributes to a persistent sense of vulnerability and psychological distress. Among the most prevalent emotional reactions are perceived stress, health anxiety, and loss of hope, which can severely impair patients' mental well-being and reduce their overall quality of life (Alagizy et al., 2020; Iuso et al., 2022). These psychological dimensions, if left unaddressed, may compromise treatment adherence, inhibit recovery, and diminish survival outcomes in breast cancer patients.

Perceived stress is not merely a reflection of life events but rather a subjective experience shaped by how individuals appraise and respond to those events. It is increasingly recognized that perceived stress can act as a mediator between external stressors and internal physiological or emotional responses (Miceli et al., 2019). For women with breast cancer, perceived stress is particularly salient due to the interplay between the fear of disease progression, body image concerns, lifestyle changes, and social role disruptions (Haghighi et al., 2021). This form of stress has been shown to be associated with increased levels of anxiety, depression, immune suppression, and even accelerated disease progression in cancer patients (Mohammadi et al., 2022). Furthermore, psychological research emphasizes that the intensity of perceived stress, rather than the number of stressors, plays a central role in determining an individual's vulnerability to illness (Ghasemi et al., 2021).

Health anxiety, defined as the excessive preoccupation or worry about having or acquiring a serious illness, frequently co-occurs with breast cancer. Although some level of concern is expected and may even promote proactive health behaviors, persistent health anxiety becomes maladaptive, contributing to avoidance, reassurance-seeking, and poor coping (Ochoa et al., 2017). In patients with breast cancer, health anxiety is often exacerbated by the recurrent nature of the disease and uncertainty surrounding treatment efficacy (Moghadam et al., 2018). Persistent worries about recurrence, the side effects of therapy, and bodily changes contribute to chronic psychological discomfort. As reported in several recent studies, high levels of health anxiety are

associated with increased emotional distress and reduced quality of life in oncology populations (Heydari et al., 2023; Nazemi et al., 2023).

In contrast to stress and anxiety, the construct of hope serves as a crucial psychological resource for patients navigating life-threatening conditions. Hope is a multidimensional and dynamic phenomenon that involves setting meaningful goals, identifying pathways to achieve them, and sustaining the motivation (agency) necessary to pursue those goals (Seligman, 2019). For women with breast cancer, the presence of hope has been shown to predict greater psychological adjustment, resilience, and even improved physiological outcomes during and after treatment (Ali Akbari et al., 2020; Salomé et al., 2017). It can function as a psychological buffer against the hopelessness and despair commonly associated with chronic illness. Studies suggest that hopeful individuals are more likely to engage in constructive health behaviors, adhere to medical regimens, and maintain social engagement, all of which are critical to recovery (Pourfaraj Emran & Rezazadeh, 2018; Tavakoli et al., 2020).

Given the substantial emotional burden that breast cancer places on patients, there is an increasing interest in psychological interventions that can mitigate stress and anxiety while simultaneously cultivating positive psychological traits such as hope. In recent years, positive psychotherapy has emerged as a compelling intervention in this regard. Developed by Nossrat Peseschkian and further conceptualized within the positive psychology framework by Martin Seligman, positive psychotherapy focuses on nurturing individual strengths, virtues, and positive emotions instead of merely alleviating pathology (Peseschkian, 2023; Seligman, 2019). This therapeutic approach is grounded in the belief that fostering gratitude, optimism, forgiveness, and purpose can meaningfully enhance psychological well-being, even in individuals facing profound adversity.

Evidence from clinical and quasi-experimental studies suggests that positive psychotherapy can effectively reduce psychological symptoms such as depression, anxiety, and perceived stress while enhancing hope and life satisfaction (Davoodifar & Esmailian, 2024; Heratirad & Miri, 2023; Khorasani, 2024). For example, Heydari et al. found that group-based positive psychotherapy significantly improved hope and psychological well-being in cancer patients undergoing chemotherapy (Heydari et al., 2023). Similarly, Suweni et al. demonstrated that the implementation of group positive psychotherapy among HIV-positive individuals

significantly increased their psychological resilience and quality of life (Suweni et al., 2023). These findings underscore the versatility and adaptability of positive psychotherapy across diverse populations with chronic health conditions.

Specifically within the breast cancer population, studies have begun to document the efficacy of this approach in mitigating psychological distress. Nazemi et al. found that positive psychotherapy significantly increased resilience in breast cancer patients, while simultaneously reducing negative affect (Nazemi et al., 2023). MonfaredPouya et al. compared positive psychotherapy with metacognitive therapy and concluded that both were effective in reducing depressive symptoms and enhancing psychological well-being in women with coronary artery disease—a finding likely to generalize to breast cancer patients given the similar psychological sequelae (MonfaredPouya et al., 2021). Moreover, Eskandari et al. reported significant improvements in emotional expression and psychological capital among women with multiple sclerosis following positive psychotherapy—a result indicative of the approach's broad applicability and promise in chronic illness contexts (Eskandari et al., 2021).

Importantly, the theoretical foundation of positive psychotherapy allows for a targeted enhancement of constructs such as hope through exercises designed to promote optimism, meaning-making, and future orientation. Peseschkian's framework emphasizes a balance between dealing with symptoms and building personal resources, making it particularly well-suited to breast cancer patients who must manage both medical and emotional recovery (Peseschkian, 2023). In this vein, Salomé et al. highlighted the significant role of spirituality and hope as mediators of coping effectiveness among patients with chronic illnesses, suggesting that interventions aimed at fostering such attributes may yield powerful therapeutic benefits (Salomé et al., 2017). Similarly, Walsh et al. emphasized that positive psychotherapy, when systematically applied, contributes not only to symptom reduction but also to the activation of patients' innate psychological capacities to heal and flourish (Walsh et al., 2017).

Despite its promise, the literature on the application of positive psychotherapy to breast cancer remains underdeveloped, especially in the context of psychological constructs like perceived stress, health anxiety, and hope in Iranian women. While several interventions have been designed for symptom alleviation, few aim to elevate well-being through the cultivation of psychological strengths.

This gap is particularly critical in societies where stigma, family roles, and socio-cultural expectations further complicate the emotional landscape of women with breast cancer (Bagheri-Shalamzari & Khoshakhlagh, 2024). As Ghasemi et al. suggest, culturally adapted therapeutic protocols that integrate religious, spiritual, and humanistic values with modern psychological science may be particularly effective in such contexts (Ghasemi et al., 2021).

The present study responds to this empirical and clinical gap by exploring the effectiveness of positive psychotherapy in improving psychological well-being among women with breast cancer.

2. Methods and Materials

2.1. Study design and Participant

This research was a randomized clinical trial conducted using a nonequivalent groups design (experimental and control) with pretest-posttest-follow-up stages. The statistical population consisted of all women with breast cancer referred to treatment centers in Tehran in 2023. The study sample included 30 patients with breast cancer who were randomly assigned into two equal intervention groups and one control group. The sampling method used was purposive. Based on an effect size of 0.25, alpha of 0.05, and a power of 0.80, a sample size of 15 participants per group was determined.

Inclusion criteria: Women diagnosed with breast cancer, Age between 20 and 45 years, Minimum education level: associate degree, Approximately 6 to 7 months since diagnosis, Cancer had not progressed to stage IV, Participants had undergone surgery, chemotherapy, and radiotherapy, No psychiatric medication used in the past three months, No history of serious psychiatric disorders such as psychosis, Signed informed consent form for participation and Not undergoing other psychological interventions during the study.

Exclusion criteria: Use of psychiatric medications or substances in the past three months and Absence from more than two therapy sessions.

2.2. Measures

Hope Scale: Snyder's Hope Scale was used to measure hope. It consists of 12 items rated on a 5-point Likert scale. Four items measure agency thinking, four items measure pathways thinking, and four are fillers. It includes two subscales: agency and pathway. Items 3, 7, and 11 are

reverse-scored. The total score is the sum of subscale scores. A score above 30 indicates high hope; below 30 indicates low hope. Prior research supports its reliability and validity. Internal consistency ranges from 0.74 to 0.84, and test-retest reliability is 0.80 or higher over periods longer than 8–10 weeks (Ali Akbari et al., 2020). In this study, Cronbach's alpha was 0.73.

Perceived Stress Scale (PSS): Developed by Cohen et al. (2004), this 14-item scale uses a 5-point Likert scale (ranging from "never" to "very often" scored 0–4). It has two subscales: negative perceived stress (7 items) and positive perceived stress (7 items). Internal consistency (Cronbach's alpha) in various samples ranged from 0.84 to 0.86. Mimura (2004) reported alphas of 0.88 and 0.81 in a Japanese student sample (Haghighi et al., 2021). In this study, the Cronbach's alphas were 0.78 for positive perceived stress and 0.72 for negative perceived stress.

Health Anxiety Inventory (HAI): The short form of the HAI was used in this study. Originally developed by Salkovskis & Warwick (1989) based on the cognitive model of health anxiety and hypochondriasis, the short form (58 items) was created in 2002. Each item has four response options rated from 0 to 3. Higher scores indicate higher health anxiety. The questionnaire includes three main factors: core section, general health worry, and negative consequences. The Persian version was adapted by Nargesi (2011) and reviewed by field experts and test participants. Cronbach's alpha ranged from 0.70 to 0.82, and test-retest reliability was 0.90 (Bulut et al., 2025; Mohsenabadi et al., 2025). In a 2011 study with 375 participants, Cronbach's alpha was 0.87, indicating strong reliability.

2.3. Intervention

The positive psychotherapy intervention in this study was implemented based on Seligman's (2006) treatment protocol and conducted over ten structured sessions, each lasting 90

minutes. The first two sessions focused on introducing the therapist, co-therapist, participants, and the therapeutic goals, as well as explaining the relevance of positive psychotherapy for women with breast cancer. In the third session, participants identified personal strengths, practiced psychological distancing, and gained control over thoughts and emotions. Session four emphasized cultivating positive emotions through daily gratitude practices and identifying three positive events. Sessions five and six extended these gratitude exercises to deepen emotional awareness and memory of positive experiences. In session seven, participants completed gratitude worksheets and reflected on both positive and negative memories to enhance cognitive reframing. Session eight served as a mid-point evaluation of progress through gratitude journals, forgiveness letters, and activity plans. The ninth session focused on reframing failures by identifying alternative opportunities, thereby nurturing optimism and a sense of purpose. Finally, session ten introduced techniques to improve interpersonal relationships and discussed strategies for enhancing happiness and life meaning. Throughout the program, participants engaged in reflective exercises and homework assignments designed to reinforce therapeutic gains and promote sustainable psychological well-being.

2.4. Data Analysis

Frequency tables, charts, and measures of central tendency (mean) and dispersion (standard deviation) were used. Repeated measures ANOVA was used for hypothesis testing. Data were analyzed using SPSS version 22.

3. Findings and Results

The descriptive findings of this study include statistical indicators such as mean, standard deviation, sample size, as well as frequency and percentage tables, all of which are presented for the research variables in the following tables.

Table 1

Descriptive Statistics of Research Variables in the Experimental and Control Groups

Variable	Group	Pretest (Mean \pm SD)	Posttest (Mean \pm SD)	Follow-up (Mean \pm SD)
Health Anxiety	Positive Psychotherapy	98.86 \pm 31.74	91.53 \pm 27.12	90.80 \pm 27.02
	Control	97.06 \pm 30.59	98.53 \pm 30.70	97.46 \pm 30.77
Perceived Stress	Positive Psychotherapy	28.66 \pm 7.29	24.60 \pm 5.18	24.06 \pm 5.38
	Control	29.73 \pm 7.27	28.20 \pm 7.26	27.80 \pm 7.20
Hope	Positive Psychotherapy	28.06 \pm 4.43	35.80 \pm 6.31	34.13 \pm 5.42
	Control	30.60 \pm 4.13	31.26 \pm 4.66	31.46 \pm 3.96

As shown in Table 1, to assess the significance of the difference in perceived stress scores between the positive psychotherapy group and the control group, repeated measures ANOVA was used. Before conducting the repeated measures ANOVA, assumptions were tested using M Box, Mauchly's Test of Sphericity, and Levene's Test. Since the M Box test was not significant for any of the

research variables, the assumption of homogeneity of covariance matrices was met. Also, the nonsignificance in Levene's test indicates that the assumption of equality of variances across groups was met. However, the Mauchly's sphericity test was significant ($W = 0.63$, $df = 2$, $p < 0.0001$), indicating a violation of the sphericity assumption. Therefore, the Greenhouse-Geisser correction was applied.

Table 2

Multivariate Analysis of Variance Results (MANOVA)

Effect	Test Name	Value	F	df Hypothesis	df Error	Sig.	Eta ²
Time	Pillai's Trace	0.86	88.95	2	27	0.0001	0.86
	Wilks' Lambda	0.13	88.95	2	27	0.0001	0.86
	Hotelling's Trace	6.58	88.95	2	27	0.0001	0.86
	Roy's Largest Root	6.58	88.95	2	27	0.0001	0.86
Group	Pillai's Trace	0.37	28.43	2	27	0.0001	0.37
	Wilks' Lambda	0.32	28.43	2	27	0.0001	0.37
	Hotelling's Trace	2.10	28.43	2	27	0.0001	0.37
	Roy's Largest Root	2.10	28.43	2	27	0.0001	0.37

As shown in Table 2, all significance levels for the multivariate tests were at $p < 0.0001$, indicating that there is a significant difference in the mean scores of the outcome variables between the experimental and control groups over

time. Wilks' Lambda specifically confirms a significant difference in the effectiveness of positive psychotherapy on perceived stress, health anxiety, and hope.

Table 3

Repeated Measures ANOVA for Pretest, Posttest, and Follow-Up Comparisons

Variable	Source	SS	df	MS	F	Sig.	Eta ²
Perceived Stress	Time	25.62	2	12.81	70.48	0.001	0.71
	Time*Group	12.86	2	6.43	35.39	0.001	0.55
	Group	116.40	1	116.40	54.08	0.001	0.33
	Time	170.60	1.45	117.57	175.61	0.001	0.86
Health Anxiety	Time*Group	116.86	1.45	80.54	120.30	0.001	0.81
	Group	211.60	1	211.60	33.53	0.001	0.34
	Time	87.62	2	43.81	164.78	0.001	0.85
Hope	Time*Group	37.48	2	18.74	70.50	0.001	0.71
	Group	212.61	1	212.61	39.25	0.001	0.40

The results in Table 3 indicate that both the within-group factor (time) and the between-group factor (group) were statistically significant across all variables. Pairwise

comparisons were conducted using the Bonferroni post-hoc test.

Table 4

Bonferroni Post-Hoc Test Results

Variable	Group	Comparison	Posttest Diff	Follow-Up Diff
Perceived Stress	Positive Psychotherapy	Pretest vs Posttest	*3.78	*3.76
		Posttest vs Follow-Up	–	*0.54
	Control	Pretest vs Posttest	0.89	0.78
		Posttest vs Follow-Up	–	0.61
Health Anxiety	Positive Psychotherapy	Pretest vs Posttest	*7.10	*8.70
		Posttest vs Follow-Up	–	0.89
	Control	Pretest vs Posttest	1.47	0.40
		Posttest vs Follow-Up	–	0.75

Hope	Positive Psychotherapy	Pretest vs Posttest	*-7.20	*-6.96
		Posttest vs Follow-Up	–	0.84
	Control	Pretest vs Posttest	-0.86	-1.22
		Posttest vs Follow-Up	–	-0.20

Asterisk (*) indicates statistically significant differences.

The results show that in the experimental group, perceived stress scores significantly decreased at posttest and follow-up compared to pretest, indicating the effectiveness of positive psychotherapy. Similarly, health anxiety significantly decreased, and hope significantly increased at both posttest and follow-up in the experimental group compared to the control group.

4. Discussion and Conclusion

The results of this study provide compelling evidence for the effectiveness of positive psychotherapy in enhancing the psychological well-being of women with breast cancer. Specifically, the intervention led to a statistically significant reduction in perceived stress and health anxiety and a concurrent increase in levels of hope among participants in the experimental group compared to the control group. These effects were sustained through the follow-up stage, indicating both short-term and stable therapeutic benefits. The outcomes align with the foundational principles of positive psychotherapy, which emphasize building individual strengths, fostering positive emotions, and cultivating meaningful life goals rather than focusing solely on the alleviation of symptoms (Seligman, 2019).

The reduction in perceived stress following positive psychotherapy in this study reflects one of the most important outcomes in psycho-oncology. Women with breast cancer are particularly vulnerable to psychological distress due to uncertainty about disease progression, disruptions to body image and identity, and the cumulative effects of invasive treatments. These stressors are not only emotional but also physiological, as chronic stress is known to impair immune functioning and delay healing (Miceli et al., 2019). The observed reduction in perceived stress is consistent with previous findings that have demonstrated the stress-buffering effects of positive psychotherapy. For example, Eskandari et al. reported that women with multiple sclerosis experienced decreased emotional tension and enhanced emotional expression following positive psychotherapy (Eskandari et al., 2021). Similarly, Davoodifar and Esmailian found that the intervention significantly alleviated marital conflicts, indirectly reducing stress in women (Davoodifar & Esmailian, 2024). These

findings corroborate the idea that interventions targeting internal resources such as gratitude, forgiveness, and hope can reduce perceived external threats, thus diminishing stress.

The findings also revealed a significant reduction in health anxiety among participants who received positive psychotherapy. Health anxiety, particularly in breast cancer patients, stems from a heightened fear of disease recurrence, metastasis, or treatment side effects, which can lead to hypervigilance and constant symptom-checking. This form of anxiety can severely disrupt daily functioning and contribute to poor mental health outcomes (Iuso et al., 2022). In the present study, positive psychotherapy equipped participants with cognitive and emotional tools to reframe their health-related worries and replace them with constructive, hopeful thinking patterns. These findings echo those of Heratirad and Miri, who observed that students experiencing academic pressure developed greater hopefulness and less anxiety after undergoing positive psychotherapy (Heratirad & Miri, 2023). Moreover, the results resonate with those of Ghasemi et al., who found that Iranian-Islamic positive psychology training significantly reduced distress symptoms among adolescent females (Ghasemi et al., 2021).

The reduction in health anxiety can be further understood in light of Peseschkian's view that psychological disorders often stem from underdeveloped capacities for positive emotions, self-reflection, and meaning-making (Peseschkian, 2023). Positive psychotherapy encourages clients to shift their focus from pathology to possibility, cultivating skills such as future-oriented thinking, mindfulness, and emotional regulation, all of which serve to diminish anxiety. As Suweni et al. noted in their study on HIV patients, group-based positive psychotherapy was instrumental in breaking the cycle of health-related rumination, replacing it with adaptive coping strategies and strengthened resilience (Suweni et al., 2023).

Perhaps most noteworthy is the significant improvement in hope observed in the experimental group. Hope is a cornerstone of psychological adjustment in patients with life-threatening illnesses. It facilitates emotional regulation, promotes treatment adherence, and fosters social support-seeking behavior. The increase in hope levels in this study

aligns with prior research demonstrating the powerful role of positive psychotherapy in cultivating hope. For example, Heydari et al. observed that cancer patients who underwent group positive psychotherapy reported significantly higher levels of hope and psychological well-being (Heydari et al., 2023). Likewise, Ali Akbari et al. found a notable increase in hope and life satisfaction in the spouses of veterans following similar interventions (Ali Akbari et al., 2020).

This finding also aligns with the theory proposed by Seligman, who emphasized that hope is not merely a trait but a skill that can be taught and reinforced through intentional exercises such as “three good things,” “gratitude letters,” and goal visualization (Seligman, 2019). Such interventions, embedded within the positive psychotherapy sessions used in this study, allowed participants to reorient their cognition toward possibility and growth, even amidst the uncertainty of illness. This mechanism was similarly identified by Tavakoli et al., who demonstrated that positive psychotherapy led to enhanced vitality in elderly patients through the structured cultivation of optimism and life meaning (Tavakoli et al., 2020).

Furthermore, these results are supported by Nazemi et al., who confirmed the efficacy of positive psychotherapy and psychodrama in improving resilience and psychological strength in breast cancer patients (Nazemi et al., 2023). Similarly, MonfaredPouya et al. highlighted that among women with cardiovascular conditions, positive psychotherapy significantly increased psychological well-being and purpose in life (MonfaredPouya et al., 2021). These studies, along with the current findings, establish a robust empirical foundation for the use of positive psychotherapy across diverse populations coping with chronic illnesses, including cancer.

From a cultural perspective, it is significant that this study was conducted in Iran, where women often face unique psychological burdens due to cultural, social, and family expectations surrounding illness. The culturally responsive adaptation of positive psychotherapy may have enhanced its effectiveness by aligning with participants’ spiritual and relational values. Ghasemi et al. have argued that integrating local cultural and religious values into therapeutic approaches can amplify their relevance and efficacy in non-Western settings (Ghasemi et al., 2021). Similarly, Bagheri-Shalamzari and Khoshakhlagh demonstrated that during the COVID-19 pandemic, positive psychotherapy not only mitigated compassion fatigue among healthcare workers but also resonated with cultural notions of altruism and

collective responsibility (Bagheri-Shalamzari & Khoshakhlagh, 2024).

In sum, this study contributes to the growing literature on the effectiveness of strength-based interventions in psycho-oncology. It reinforces the position that positive psychotherapy is a viable, evidence-based approach to addressing psychological distress in women with breast cancer. The findings validate prior research and offer new insights into how enhancing positive psychological traits can serve as a buffer against the emotional turbulence associated with cancer. Moreover, the durability of the intervention's effects, as observed at the follow-up stage, indicates that positive psychotherapy fosters sustainable changes in patients' psychological functioning—a crucial consideration in long-term cancer survivorship care.

5. Limitations and Suggestions

Despite its strengths, this study is not without limitations. First, the relatively small sample size ($n=30$) limits the generalizability of the findings. Future research with larger, more diverse populations would allow for more robust statistical inference. Second, all participants were recruited from a single geographic region (Tehran), which may not reflect the experiences of breast cancer patients in other parts of the country or across different sociocultural backgrounds. Third, the reliance on self-report questionnaires introduces the possibility of response bias and social desirability effects. Participants may have responded in ways they believed were expected or desirable rather than reflecting their true internal states. Additionally, the study design did not include a long-term (e.g., six months or more) follow-up, making it difficult to assess the enduring impact of the intervention. Finally, the absence of qualitative data such as interviews or observational records restricts the depth of insight into the subjective experiences of the participants.

Future studies should consider replicating this research using larger and more heterogeneous samples to increase external validity. Exploring the impact of positive psychotherapy in different cancer types and stages could help tailor the intervention more effectively. Comparative studies between positive psychotherapy and other therapeutic approaches such as cognitive behavioral therapy or acceptance and commitment therapy could also provide deeper insight into relative efficacy. Incorporating longitudinal designs with extended follow-up periods (e.g., six months to one year) would allow for assessment of the sustainability of psychological changes. Additionally,

mixed-methods research that includes both quantitative and qualitative data could enrich our understanding of the subjective transformation that patients experience during the therapy process. Investigating potential mediators (e.g., resilience, gratitude, social support) and moderators (e.g., age, cancer stage, spirituality) would further clarify the mechanisms through which positive psychotherapy exerts its effects.

Clinicians working with breast cancer patients are encouraged to integrate positive psychotherapy into their psycho-oncological services as a complement to traditional support methods. This strength-based approach can empower patients by emphasizing growth, resilience, and meaning-making alongside symptom reduction. Training healthcare providers in culturally adapted positive psychotherapy techniques may enhance therapeutic engagement and effectiveness, particularly in collectivist societies where social and spiritual values are prominent. Hospitals and cancer care centers should consider offering group-based formats of positive psychotherapy to facilitate peer support and cost-effectiveness. Furthermore, integrating positive psychology components—such as gratitude exercises, hope-building activities, and meaning-centered interventions—into routine nursing care and psychosocial support programs could provide holistic emotional care to patients throughout their treatment and survivorship journey.

Authors' Contributions

Authors contributed equally to this article.

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. The present study was approved by the Medical Sciences Ethics Committee on July 18, 2019, under the reference number IR.IAU.TMU.REC.1399.300.

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