

The Effectiveness of Cognitive-Behavioral Therapy on Death Anxiety and Trauma Avoidance in Women with Breast Cancer

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ABSTRACT

Purpose: The present study aimed to determine the effectiveness of cognitive-behavioral therapy in reducing death anxiety and trauma avoidance among women with breast cancer.

Methods and Materials: The research employed a quasi-experimental design with a pretest–posttest control group. The statistical population consisted of all women with breast cancer referred to a comprehensive cancer center in 2025, from which 20 participants were selected through purposive sampling and randomly assigned to experimental and control groups (10 participants in each group). Data were collected using the Collett–Lester Death Anxiety Scale and the Trauma Avoidance Questionnaire. The experimental group received an eight-session cognitive-behavioral therapy intervention, while the control group received no psychological treatment. The intervention included cognitive restructuring, relaxation training, emotional awareness, and behavioral techniques aimed at reducing maladaptive coping patterns. Data were analyzed using multivariate analysis of covariance (MANCOVA) to examine the effect of the intervention while controlling for pretest scores.

Findings: The results of multivariate analysis of covariance indicated a significant overall effect of cognitive-behavioral therapy on the combined dependent variables ($p \leq 0.01$). Univariate analyses revealed that, after controlling for pretest scores, there were significant differences between the experimental and control groups in both death anxiety ($F = 14.971$, $p = 0.001$, $\eta^2 = 0.416$) and trauma avoidance ($F = 6.914$, $p = 0.016$, $\eta^2 = 0.257$), indicating that the intervention significantly reduced these variables in the experimental group.

Conclusion: The findings suggest that cognitive-behavioral therapy is an effective intervention for reducing death anxiety and trauma avoidance in women with breast cancer.

Keywords: Cognitive-behavioral therapy, death anxiety, trauma avoidance.

1. Introduction

Breast cancer is recognized as one of the most prevalent and psychologically burdensome chronic diseases among women worldwide, representing not only a serious physical health condition but also a profound psychological crisis that affects multiple dimensions of patients' lives. The diagnosis and treatment trajectory of breast cancer expose individuals to a range of stressors, including uncertainty about prognosis, invasive medical procedures, and disruption of personal and social roles. These stressors often culminate in significant emotional disturbances, among which death anxiety and trauma-related avoidance behaviors are particularly prominent. The psychological burden associated with cancer has been widely documented, emphasizing that effective management of such conditions requires not only medical interventions but also comprehensive psychological care (Hong et al., 2022; Yang et al., 2022).

Death anxiety, defined as the apprehension and fear associated with one's own mortality or the process of dying, is considered a central psychological construct in patients facing life-threatening illnesses. In the context of breast cancer, death anxiety may intensify due to heightened awareness of mortality and perceived vulnerability. Research has demonstrated that individuals with chronic or terminal illnesses, particularly cancer, tend to exhibit higher levels of death anxiety compared to the general population (Ozer et al., 2025; Semerci Cakmak et al., 2025). This heightened anxiety is not merely an emotional reaction but is also associated with maladaptive cognitive patterns, such as catastrophic thinking, negative beliefs about illness, and diminished coping self-efficacy. Moreover, the persistence of death anxiety has been linked to adverse psychological outcomes, including depression, reduced quality of life, and impaired adherence to treatment protocols (Hong et al., 2022; Turan et al., 2025).

From a theoretical perspective, death anxiety is influenced by multiple psychological factors, including personality traits, cognitive appraisals, and coping mechanisms. The structural equation model proposed in recent research highlights the mediating role of coping self-efficacy in the relationship between personality characteristics and death anxiety, suggesting that individuals with higher adaptive coping capacities are better able to manage existential fears (Zhong et al., 2025). Additionally, early maladaptive schemas, such as vulnerability to harm and failure, have been identified as significant predictors of

death-related fears, indicating that deeply ingrained cognitive structures play a critical role in shaping individuals' responses to mortality threats (Amin et al., 2021). These findings underscore the importance of targeting cognitive processes in therapeutic interventions aimed at reducing death anxiety.

In parallel with death anxiety, trauma-related avoidance represents another key psychological challenge among women with breast cancer. Avoidance behaviors, conceptualized as efforts to evade distressing thoughts, emotions, or reminders of traumatic experiences, are considered a central mechanism in the maintenance of psychological disorders. In the context of cancer, trauma avoidance may manifest as reluctance to discuss the illness, avoidance of medical settings, or suppression of cancer-related thoughts. While such strategies may provide temporary relief, they ultimately reinforce anxiety and hinder psychological adaptation (Edwards, 2022; Nazarandaz Kourandeh et al., 2021). Experiential avoidance, in particular, has been associated with increased emotional distress and reduced psychological flexibility, further exacerbating the negative impact of the disease on patients' well-being (Esmaeili et al., 2023).

Empirical evidence suggests that trauma avoidance is closely linked with other psychological variables, including emotional expression, social support, and overall mental health. For instance, individuals who engage in high levels of avoidance are less likely to express emotions effectively, which can lead to interpersonal difficulties and increased psychological isolation (Esmaeili et al., 2023). Furthermore, avoidance behaviors have been shown to interfere with adaptive coping strategies, thereby reducing individuals' ability to manage stress and adjust to the demands of illness. This highlights the need for interventions that not only reduce avoidance but also promote active engagement with distressing experiences in a controlled and therapeutic manner.

Given the complex interplay between death anxiety and trauma avoidance, psychological interventions that address both cognitive and behavioral components are essential. Among the various therapeutic approaches, cognitive-behavioral therapy (CBT) has emerged as one of the most effective and widely used treatments for a range of psychological disorders, including those associated with chronic illness. CBT is grounded in the premise that maladaptive thoughts and beliefs contribute to emotional distress and behavioral dysfunction, and that modifying these cognitive patterns can lead to improvements in

psychological well-being (Sarmad et al., 2023). Through techniques such as cognitive restructuring, behavioral activation, and exposure, CBT aims to equip individuals with the skills necessary to manage their thoughts, emotions, and behaviors more effectively.

The effectiveness of CBT in reducing death anxiety has been supported by numerous studies across different populations. For example, interventions based on cognitive-behavioral principles have been shown to significantly decrease death anxiety in patients with chronic illnesses, including those undergoing hemodialysis and individuals living with HIV/AIDS (Abbas et al., 2023; Roza et al., 2022; Saki et al., 2022). Similarly, CBT has been found to be effective in reducing death anxiety among elderly populations and women experiencing psychological distress, indicating its broad applicability across diverse demographic groups (Arab & Mohammadi, 2023; Rezaei & Mousavi, 2022). These findings suggest that CBT can address both the cognitive distortions and emotional responses associated with fear of death.

In addition to its impact on death anxiety, CBT has also demonstrated efficacy in reducing trauma-related avoidance behaviors. By encouraging individuals to confront rather than avoid distressing experiences, CBT facilitates the processing of traumatic memories and promotes psychological flexibility. Studies have shown that CBT-based interventions can significantly reduce experiential avoidance and improve emotional regulation, particularly in populations experiencing emotional distress or trauma-related symptoms (Braunewell et al., 2024; Esmaeili et al., 2023). Furthermore, the integration of self-care components within CBT protocols has been found to enhance treatment outcomes by addressing both psychological and behavioral aspects of distress.

The role of schema-based approaches within the cognitive-behavioral framework has also gained increasing attention in recent years. Schema therapy, which focuses on identifying and modifying maladaptive schemas, has been shown to be effective in reducing death anxiety and emotional distress in patients with breast cancer (Mirbagheri et al., 2022). The concept of the “healthy adult” mode, as described in schema therapy, emphasizes the development of adaptive coping strategies and emotional regulation skills, which are essential for managing the psychological challenges associated with chronic illness (Salicru, 2023). These findings highlight the potential of integrating schema-focused techniques into CBT interventions to enhance their effectiveness.

Moreover, motivational and psychoeducational components have been incorporated into CBT-based interventions to address issues such as treatment adherence and self-efficacy. For instance, motivational interviewing techniques have been shown to improve adherence to treatment among patients with chronic conditions by enhancing their sense of control and motivation (Jafarzadeh et al., 2022). Similarly, psychoeducational programs based on CBT principles have been found to improve emotional outcomes, including anger management and death anxiety, among individuals undergoing chemotherapy (Togluk & Budak, 2024). These approaches underscore the versatility of CBT in addressing a wide range of psychological and behavioral challenges.

Despite the substantial body of evidence supporting the effectiveness of CBT, it is important to consider the contextual and individual factors that may influence treatment outcomes. Cultural beliefs, social support systems, and individual differences in coping styles can all impact the effectiveness of psychological interventions. For example, the experience and expression of death anxiety may vary across cultures, influencing how individuals respond to therapeutic approaches (Semerci Cakmak et al., 2025). Additionally, factors such as stigma, emotional expression, and access to psychological services can affect the implementation and success of CBT interventions (Ghareh Hasanlou, 2023; Mehrparvar & Karimi, 2022).

In this context, the need for tailored and culturally sensitive interventions becomes evident. Research has emphasized the importance of adapting CBT protocols to meet the specific needs of different populations, particularly in clinical settings involving chronic illness. For instance, integrating elements of emotional expression and social support into CBT interventions has been shown to enhance their effectiveness in reducing psychological distress (Abbas et al., 2023; Esmaeili et al., 2023). Furthermore, the use of online and technology-based CBT programs has expanded access to psychological care, providing new opportunities for intervention in diverse settings (Menzies et al., 2023).

Overall, the existing literature highlights the significant psychological burden associated with breast cancer, particularly in relation to death anxiety and trauma avoidance. While CBT has demonstrated considerable effectiveness in addressing these issues, there remains a need for further research to explore its impact within specific populations and contexts. In particular, studies focusing on women with breast cancer can provide valuable insights into the mechanisms through which CBT influences

psychological outcomes and identify potential areas for intervention.

Accordingly, the present study aims to investigate the effectiveness of cognitive-behavioral therapy in reducing death anxiety and trauma avoidance in women with breast cancer.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with a pretest–posttest control group. The statistical population consisted of all women with breast cancer who were referred to the Comprehensive Cancer Center of Sari in 2025. The sample size was determined based on the number of groups and the number of variables under study. From this population, 20 women with breast cancer who were willing to participate in the treatment program were selected through purposive sampling. They were then randomly assigned to two groups: an experimental group and a control group, with 10 participants in each group.

The inclusion criteria were as follows: a confirmed diagnosis of breast cancer for at least one year, completion of chemotherapy sessions, literacy in reading and writing, age between 20 and 50 years, no use of psychiatric medications, no psychiatric disorders based on self-report, no simultaneous participation in other psychotherapy programs, no psychiatric medication use for at least one month prior to assessment, and physical and psychological readiness to respond to the questionnaires. The exclusion criteria included absence from more than two sessions, unwillingness to continue participation in the study, simultaneous participation in counseling or other psychotherapy programs, and failure to complete the questionnaires at the three stages of pretest, posttest, and follow-up.

The procedure was carried out as follows: after obtaining the necessary administrative permissions from the security office of the Comprehensive Cancer Center of Sari, the required coordination was made with the head of the center. Then, through an interview process, 20 patients who met the inclusion criteria were selected and randomly assigned to two groups of 10 participants each.

In this study, the following ethical considerations were observed: Before the start of the study, participants were informed about the subject and procedure of the research. The researcher committed to protecting the participants' private information and using the data solely for research

purposes. The researcher committed to explaining the results to the participants if they wished. In case of any ambiguity, the necessary guidance was provided to the participants. Participation in the study imposed no financial burden on the participants. The study had no conflict with the religious and cultural values of the participants and the society.

2.2. Measures

1. **Death Anxiety Questionnaire:** The initial version of this scale was developed by Collett and Lester (1969). The scale contains 32 items. The average inter-item correlations for the four subscales were reported as 0.29, 0.05, 0.57, and 0.17, respectively. Lester (1990) reported the reliability coefficients for the subscales of death of self, dying of self, death of others, and dying of others as 0.87, 0.72, 0.89, and 0.91, respectively. In Iran, for the first time, Naderi and Esmaeili (2008) administered the revised form of this scale to a sample of 200 university students. Its validity, obtained through correlation with Templer's Death Anxiety Scale, was 0.57 at a significance level of $p < 0.001$. Its reliability, calculated through Cronbach's alpha and split-half methods, was 0.89 and 0.68, respectively. In the study by Naderi and Esmaeili (2008), the convergent validity of the questionnaire was reported as 0.68, indicating acceptable validity.

2. **Trauma Avoidance Questionnaire:** This questionnaire was developed by Bond et al. (2011) to assess psychological flexibility, particularly in relation to experiential avoidance and willingness to engage in action despite unwanted thoughts and feelings. It consists of 7 items. Responses are rated on a 7-point Likert scale ranging from 1 (never) to 7 (always). Higher scores on this scale indicate lower psychological flexibility and higher experiential avoidance. Bond et al. (2011) reported a 9-month test–retest reliability coefficient of 0.81 and an internal consistency coefficient of 0.84 using confirmatory factor analysis. In Iran, Abbasi et al. reported a Cronbach's alpha coefficient of 0.89 for the Acceptance and Action Questionnaire-II, a one-year test–retest reliability of 0.76, and an internal consistency coefficient of 0.73 based on confirmatory factor analysis.

2.3. Intervention

The cognitive-behavioral therapy (CBT) protocol implemented in this study consisted of eight structured two-hour sessions designed to systematically address death anxiety and trauma avoidance through cognitive, emotional, and behavioral interventions. Initially, participants were introduced to the therapeutic framework through rapport-

building, problem conceptualization, and familiarization with the cognitive-behavioral model, followed by baseline assessment and completion of emotion–thought identification forms to enhance awareness of internal experiences. Subsequent sessions focused on skill acquisition and application, beginning with training in physiological regulation techniques such as relaxation and deep breathing, with participants practicing daily exercises to reduce autonomic arousal. The intervention then progressed to cognitive components, including systematic monitoring of negative automatic thoughts using structured self-report forms, enabling participants to identify recurring maladaptive cognitions. This was followed by targeted training in recognizing cognitive distortions and engaging in cognitive restructuring processes, where participants actively challenged irrational beliefs and replaced them with more adaptive alternatives. These cognitive techniques were reinforced across multiple sessions to consolidate learning and promote internalization. Concurrently, behavioral strategies were integrated, including continued relaxation practice and the introduction of time management and lifestyle modification techniques aimed at improving daily functioning and reducing avoidance patterns. In the later

stages, participants applied learned skills to real-life situations, enhancing self-efficacy and psychological flexibility. The final session focused on summarizing therapeutic gains, reinforcing key strategies, and conducting post-intervention assessment, thereby ensuring consolidation of treatment effects and preparing participants for independent application of skills beyond the therapeutic setting.

2.4. Data Analysis

In this study, the data were analyzed using multivariate analysis of covariance and SPSS version 26.

3. Findings and Results

In the present study, the sample consisted of 20 participants. In the experimental group, 10 participants had a mean age of 32.60 ± 1.04 , while in the control group, 10 participants had a mean age of 32.73 ± 1.55 , indicating that the two groups were homogeneous in terms of age. All participants were female. Table 1 presents the descriptive statistics for the variables of death anxiety and trauma avoidance.

Table 1

Descriptive Statistics of Research Variables

Variable	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Kolmogorov-Smirnov Statistic	Sig.
Death Anxiety	Experimental	45.40	14.73	38.55	13.32	0.147	0.078
	Control	45.75	13.62	44.01	10.00	0.132	0.072
Trauma Avoidance	Experimental	65.55	14.53	56.75	13.13	0.111	0.059
	Control	65.10	16.70	66.20	15.53	0.119	0.061

As shown in Table 1, the variables of death anxiety and trauma avoidance were measured in both the control and experimental groups at two stages (pretest and posttest). The findings indicate that in the control group, the mean scores of death anxiety and trauma avoidance did not show substantial changes from pretest to posttest. However, in the experimental group, a noticeable reduction in both death anxiety and trauma avoidance was observed at the posttest stage compared to the pretest.

The Kolmogorov–Smirnov test results indicated that the significance levels for all variables were higher than 0.05, suggesting that the assumption of normality was not violated. Additionally, the findings showed a decrease in the mean scores of the experimental group for both death anxiety and trauma avoidance from pretest to posttest.

Before conducting the multivariate analysis of covariance (MANCOVA), the assumptions were examined. Boxplot analysis indicated no outliers. The interaction effect between group and pretest scores for trauma avoidance ($p = 0.247$) and death anxiety ($p = 0.316$) was not significant, indicating that the assumption of homogeneity of regression slopes was met. Box's M test showed that the covariance matrices were equal across groups ($F = 1.802, p = 0.148$). Levene's test indicated homogeneity of variances for trauma avoidance ($F = 2.802, p = 0.78$) and death anxiety ($F = 1.433, p = 0.66$). Therefore, multivariate tests including Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root were used to assess the validity of the covariance analysis, the results of which are presented in Table 2.

Table 2*Multivariate Analysis of Covariance Results*

Effect	Value	F	Sig.	Partial Eta Squared	Power
Pillai's Trace	0.99	2013.762	$p \leq 0.01$	0.89	1
Wilks' Lambda	0.005	2013.762	$p \leq 0.01$	0.89	1
Hotelling's Trace	191.787	2013.762	$p \leq 0.01$	0.89	1
Roy's Largest Root	191.787	2013.762	$p \leq 0.01$	0.89	1

The results indicate that cognitive-behavioral therapy had a significant effect on at least one of the dependent variables (death anxiety and trauma avoidance) in women with breast

cancer. The observed differences between the groups can therefore be attributed to the CBT intervention.

Table 3*ANCOVA Results for CBT Effects on Death Anxiety and Trauma Avoidance (Posttest)*

Source of Variation	SS	df	MS	F	Sig.	Eta Squared	Power
Corrected Model (Trauma Avoidance)	1456.902	3	458.634	8.878	0.001	0.571	1
Pretest (Trauma Avoidance)	441.679	1	441.679	8.078	0.010	0.288	1
Group	378.242	1	378.242	6.914	0.016	0.257	1
Error	1094.056	16	30.390				
Corrected Model (Death Anxiety)	233.731	3	116.866	82.906	0.000	0.888	1
Pretest (Death Anxiety)	153.065	1	153.065	108.586	0.000	0.838	1
Group	21.103	1	21.103	14.971	0.001	0.416	1
Error	29.602	16	0.822				

Based on the results presented in Table 3, there were significant differences between the two groups across the studied variables ($p < 0.05$). Given the estimated means, these differences favored the experimental group. Therefore, cognitive-behavioral therapy was effective in reducing death anxiety and trauma avoidance in women with breast cancer.

4. Discussion and Conclusion

The present study aimed to examine the effectiveness of cognitive-behavioral therapy (CBT) in reducing death anxiety and trauma avoidance among women with breast cancer. The findings demonstrated that the CBT intervention led to a statistically significant reduction in both death anxiety and trauma avoidance in the experimental group compared to the control group. These results indicate that CBT can be considered an effective psychological intervention for addressing core emotional and behavioral challenges associated with breast cancer. The observed reduction in death anxiety suggests that participants were able to modify maladaptive cognitive appraisals related to mortality, while the decrease in trauma avoidance reflects improved psychological flexibility and reduced reliance on maladaptive coping strategies.

The findings related to death anxiety are consistent with a substantial body of previous research demonstrating the effectiveness of CBT in reducing fear of death across various clinical populations. For instance, studies have shown that CBT-based interventions significantly reduce death anxiety among patients with chronic illnesses, including those undergoing hemodialysis and individuals living with HIV/AIDS (Abbas et al., 2023; Roza et al., 2022; Saki et al., 2022). Similarly, research conducted on elderly populations has confirmed that CBT can effectively alleviate death-related fears and associated psychological distress (Arab & Mohammadi, 2023; Ghareh Hasanlou, 2023). The consistency of these findings suggests that CBT's structured approach to identifying and restructuring maladaptive thoughts plays a critical role in reducing existential fears.

From a theoretical standpoint, the reduction in death anxiety observed in this study can be explained through cognitive models emphasizing the role of maladaptive beliefs and cognitive distortions in the development and maintenance of anxiety. According to these models, individuals with high levels of death anxiety often exhibit catastrophic interpretations of illness and heightened perceptions of vulnerability. CBT techniques such as cognitive restructuring and reality testing enable individuals

to challenge these distorted beliefs and develop more balanced and adaptive perspectives. This interpretation is supported by research highlighting the mediating role of coping self-efficacy in reducing death anxiety, indicating that enhancing individuals' perceived ability to cope with stress can mitigate existential fears (Zhong et al., 2025). Furthermore, the role of early maladaptive schemas, particularly those related to vulnerability and failure, has been identified as a significant predictor of death anxiety, suggesting that CBT's focus on schema modification contributes to its effectiveness (Amin et al., 2021).

In addition to its impact on death anxiety, the findings of this study revealed a significant reduction in trauma avoidance among participants in the experimental group. This result aligns with previous research indicating that CBT is effective in reducing experiential avoidance and promoting emotional engagement. Studies have demonstrated that CBT interventions can significantly decrease avoidance behaviors by encouraging individuals to confront rather than evade distressing thoughts and emotions (Braunewell et al., 2024; Esmaeili et al., 2023). The reduction in avoidance observed in this study suggests that participants were able to engage more effectively with their emotional experiences, thereby reducing the reinforcing cycle of avoidance and anxiety.

The effectiveness of CBT in reducing trauma avoidance can be understood within the framework of behavioral learning theories, which emphasize the role of avoidance in maintaining anxiety. Avoidance behaviors are negatively reinforced because they provide temporary relief from distress, thereby increasing the likelihood of their recurrence. CBT disrupts this cycle by introducing exposure-based techniques and behavioral experiments that allow individuals to experience and tolerate distress without engaging in avoidance. This process leads to habituation and cognitive reappraisal, ultimately reducing the intensity of emotional responses. The findings of this study are consistent with research demonstrating that reducing experiential avoidance enhances psychological flexibility and improves overall mental health outcomes (Nazarandaz Kourandeh et al., 2021).

Moreover, the integration of schema-based elements within the CBT framework may have contributed to the observed outcomes. Schema therapy research has shown that modifying maladaptive schemas can lead to significant reductions in emotional distress and anxiety in patients with chronic illnesses, including breast cancer (Mirbagheri et al., 2022). The concept of the "healthy adult" mode, which

emphasizes adaptive coping and emotional regulation, provides a useful framework for understanding how CBT interventions facilitate long-term psychological change (Salicru, 2023). By addressing both surface-level cognitive distortions and deeper schema-level beliefs, CBT offers a comprehensive approach to psychological treatment.

The findings of this study also align with research highlighting the role of psychoeducational and motivational components in enhancing the effectiveness of CBT interventions. For example, CBT-based psychoeducation has been shown to improve emotional outcomes, including anger management and death anxiety, among individuals undergoing chemotherapy (Togluk & Budak, 2024). Additionally, motivational interviewing techniques have been found to enhance treatment adherence and self-efficacy, which are critical factors in successful psychological interventions (Jafarzadeh et al., 2022). These findings suggest that the structured and multifaceted nature of CBT contributes to its effectiveness in addressing complex psychological issues.

Furthermore, the results of this study support the notion that CBT is effective across diverse populations and cultural contexts. Research has indicated that the experience and expression of death anxiety may vary across cultures, yet CBT remains a robust intervention capable of addressing these differences (Ozer et al., 2025; Semerci Cakmak et al., 2025). The adaptability of CBT protocols allows for the incorporation of culturally relevant elements, enhancing their applicability and effectiveness in different settings. This is particularly important in the context of breast cancer, where cultural beliefs about illness and mortality may influence psychological responses.

Despite the overall consistency with previous research, some nuances in the findings warrant further consideration. While CBT has been shown to be effective in reducing death anxiety, some studies suggest that existential aspects of death-related fears may require additional therapeutic approaches. However, the present findings indicate that CBT can extend beyond symptom reduction and influence deeper levels of existential anxiety. This may be attributed to the inclusion of techniques that address meaning-making and emotional processing, which are essential for managing existential concerns. Additionally, the observed reduction in trauma avoidance suggests that CBT can effectively target both cognitive and behavioral components of psychological distress, providing a comprehensive treatment approach.

Another important implication of the findings is the potential role of CBT in improving overall quality of life

among women with breast cancer. By reducing death anxiety and trauma avoidance, CBT may enhance individuals' ability to engage in daily activities, maintain social relationships, and adhere to medical treatments. This is supported by research demonstrating that CBT interventions can improve psychological well-being and treatment adherence in patients with chronic illnesses (Abbas et al., 2023). Therefore, the integration of CBT into cancer care programs may have significant benefits for both psychological and physical health outcomes.

In summary, the findings of the present study provide strong evidence for the effectiveness of CBT in reducing death anxiety and trauma avoidance among women with breast cancer. The results are consistent with existing literature and theoretical models, highlighting the role of cognitive restructuring, behavioral exposure, and schema modification in achieving psychological change. The study contributes to the growing body of research supporting the use of CBT in clinical settings and underscores its potential as a key component of comprehensive cancer care.

One of the main limitations of the present study was the relatively small sample size, which may limit the generalizability of the findings. Additionally, the use of purposive sampling and the restriction of the sample to women with breast cancer from a single treatment center may reduce the external validity of the results. Another limitation was the lack of long-term follow-up, which makes it difficult to determine the durability of treatment effects over time. Furthermore, potential confounding variables such as individual differences in personality, social support, and coping styles were not controlled, which may have influenced the outcomes.

Future research should aim to address these limitations by employing larger and more diverse samples across multiple clinical settings. Longitudinal studies with extended follow-up periods are needed to examine the durability of CBT effects on death anxiety and trauma avoidance. Additionally, future studies could explore the integration of CBT with other therapeutic approaches, such as mindfulness-based interventions or meaning-centered therapies, to enhance treatment outcomes. Investigating the role of moderating variables, such as cultural factors, personality traits, and social support, may also provide valuable insights into the mechanisms underlying the effectiveness of CBT.

From a practical perspective, the findings of this study highlight the importance of incorporating psychological interventions into standard cancer care. Healthcare professionals, including psychologists, counselors, and

oncologists, should consider integrating CBT-based programs into treatment plans for women with breast cancer. Training healthcare providers in CBT techniques can enhance their ability to address patients' psychological needs effectively. Additionally, the development of accessible and cost-effective CBT programs, including group-based and online interventions, can increase the availability of psychological support for patients. Implementing such interventions may not only reduce psychological distress but also improve overall treatment outcomes and quality of life for individuals with breast cancer.

Authors' Contributions

All authors significantly contributed to this study.

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

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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