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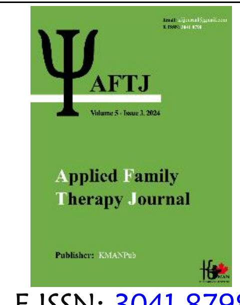

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The Effectiveness of Acceptance and Commitment-Based Group Therapy on Hope and Happiness in Women with Breast Cancer

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ABSTRACT

Objective: This study aimed to examine the effectiveness of acceptance and commitment-based group therapy on hope and happiness in women diagnosed with breast cancer.

Methods: The research was applied and experimental in nature. The design was a quasi-experimental pretest-posttest with a control group. The population consisted of all women diagnosed with breast cancer in Borujerd city, from which 30 participants were selected through non-random convenient sampling using Snyder's Hope Scale (1991) and the Oxford Happiness Questionnaire (1990) based on inclusion and exclusion criteria, and were randomly assigned to two groups: the experimental group receiving acceptance and commitment therapy (each group consisting of 15 members) and the control group. The experimental group underwent eight 90-minute sessions of acceptance and commitment therapy, as described by Hayes et al. (2006), once a week, while the control group received no intervention. After the training period, the questionnaires were administered again in both groups at the post-test stage. Data analysis in this study was performed using analysis of covariance.

Findings: The results showed that acceptance and commitment-based group therapy significantly improved hope ($F = 62.66$, $p = 0.001$) and happiness ($F = 43.81$, $p = 0.001$) in women with breast cancer.

Conclusion: Based on the findings of this research, it can be concluded that acceptance and commitment-based group therapy enhances hope and happiness in women with breast cancer; therefore, it can be used as an effective intervention method to foster and increase hope and happiness in these women.

Keywords: *Acceptance and commitment-based group therapy, hope, happiness, breast cancer.*

1. Introduction

Breast cancer places individuals in difficult physical and psychological situations (Iddrisu et al., 2020). Facing the disease can lead to severe and acute health crises. Breast cancer can challenge patients' fundamental beliefs about their personal vulnerability, safety, and self-worth (Brandão et al., 2014). Women with breast cancer often

experience issues such as anxiety, depression, uncertainty, reduced quality of life, concerns related to body image, and specific problems associated with physical symptoms (Alighanavati et al., 2018; Mahdavi et al., 2017). It seems that breast cancer, due to its association with fear and depression, may be linked to psychological traits such as hope for life (Thomas et al., 2017). Hope has physical effects and can positively impact the control of pain and physical weakness, as it activates the peripheral circuits releasing endorphins, thereby reducing pain. Additionally, hope helps individuals maintain motivation and a sense of purpose in life despite challenges in achieving goals, creating new strategies to pursue these goals. Cancer appears to have a significant impact on hope compared to other chronic diseases (Sharifiyan et al., 2020).

Another risk factor among women with breast cancer is the variable of happiness. Happiness levels are higher among physically healthy individuals who have a lot of energy. Studies on the happiness of individuals with breast cancer have shown that a decrease in this factor is associated with increased pain and anxiety in these patients; therefore, increasing their happiness directly correlates with reducing their pain and psychological distress. Thus, employing therapies that can increase happiness in these individuals is of high importance (Alighanavati et al., 2018).

In recent decades, specialists have tried various approaches to help improve and enhance the psychological well-being of patients with chronic disorders. Among these, acceptance and commitment-based group therapy, a third-wave behavioral treatment, has proven to be an effective intervention for adapting to cancer. This process-oriented approach is recognized as one of the third-wave psychotherapies and teaches focused awareness on a particular method: focusing on the goal, being present, nonjudgmental acceptance, openness, maintaining relationships, and skills to respond to uncontrollable experiences, thereby committing to personal values. This therapy is for reducing worries along with eliminating unwanted thoughts, emotions, and feelings often seen as signs of psychological disorder and involves significant psychological flexibility that enables behavior change depending on how this behavior is useful and understandable for the patient's life in the long term (Roientan et al., 2019). Patients with cancer face numerous challenges, and research shows that increasing psychological flexibility with acceptance and commitment therapy helps them overcome these challenges (Larsson et al., 2022).

A better understanding of the prevalence of psychological disorders in cancer patients can aid in identifying those in need of psychological services, clarifying and facilitating the provision of mental health services, and ultimately improving access to necessary psychological care. Research has shown that psychological intervention programs, especially those delivered in groups, significantly reduce psychological disorders related to cancer, provide valuable social support, and enhance coping skills. Therefore, this research was conducted with the aim of examining group therapy based on acceptance and commitment on hope and psychological well-being in women with breast cancer.

2. Methods

2.1. Study design and Participant

The present study was a quasi-experimental design featuring a pretest-posttest with a control group. The population consisted of all women diagnosed with breast cancer who met the inclusion criteria for the study. A sample of 30 women was selected through non-random convenient sampling and randomly assigned to two groups: an experimental group (receiving acceptance and commitment therapy) and a control group, with 15 participants in each. Inclusion criteria were: 1) confirmed diagnosis of cancer by a specialist; 2) at least one completed chemotherapy treatment; 3) age range of 20 to 50 years; 4) minimum educational attainment of a high school diploma; 5) no use of psychiatric medication in the past three months; 6) completion of an informed consent form regarding participation in the study; and 7) not undergoing any other psychological interventions during the study. Exclusion criteria included: 1) absence from more than one session; 2) unwillingness to continue treatment.

2.2. Measures

2.2.1. Hope

The Snyder Hope Scale (1991) is designed to measure hope. It consists of 12 statements on a 5-point Likert scale, including 4 statements each for assessing agency thinking, pathway thinking, and 4 distractors. The scale has two subscales: agency and pathways. Items 3, 7, and 11 are scored in reverse. To obtain total scores, the subscale scores are summed, with the total possible scores ranging from 8 to 32. Numerous studies support the reliability and validity of this scale, with internal consistency typically ranging from

0.74 to 0.84, and test-retest reliability over periods of more than 8 to 10 weeks is even higher (Nikrouy et al., 2022).

2.2.2. Happiness

The Oxford Happiness Questionnaire (1990) consists of 29 questions measuring individual happiness. The theoretical basis of this questionnaire is Argyle's (2001) definition of happiness. Developed by Argyle in 1989 based on the Beck Depression Inventory, each item is scored on a scale from zero (never) to three (always). The highest possible score is 87, indicating maximum happiness, while the lowest score is zero, indicating dissatisfaction with life and depression. The cutoff point of the questionnaire is 43.5. Argyle (2001) reported a Cronbach's alpha reliability of 0.90 and a retest reliability of 0.78 over seven weeks. Concurrent validity of the questionnaire was assessed at 0.43 using peer evaluations. Findings have shown that the Oxford Happiness Questionnaire is suitable for measuring happiness in the Iranian community and has reliable validity. The reliability of this questionnaire in the research by Adibi and Gorji (2016) using Cronbach's alpha method was calculated at 0.92 (Ataabadi et al., 2022).

2.3. Intervention

2.3.1. Acceptance and Commitment-Based Group Therapy

The content of the acceptance and commitment therapy was implemented in the experimental group over 8 sessions of 90 minutes each, following the protocol by Hayes et al. (2011) (Hayes et al., 2011).

Session 1: Introduction and Mindfulness

The first session is dedicated to introducing the participants to each other and to the principles of Acceptance and Commitment Therapy (ACT). The therapist explains the goals of the therapy and outlines the structure of the upcoming sessions. This session emphasizes the importance of mindfulness, teaching basic mindfulness exercises to help participants become more aware of their thoughts, feelings, and bodily sensations without judgment. The exercises include focused breathing and body scan techniques, setting the foundation for increasing psychological flexibility throughout the therapy.

Session 2: Cognitive Defusion

In the second session, the concept of cognitive defusion is introduced. Participants learn to observe their thoughts as merely words or pictures in the mind rather than truths or direct reflections of reality. The therapist uses various techniques such as labeling thoughts, imagining thoughts on leaves floating down a stream, or saying thoughts in silly voices to help participants distance themselves from their thoughts. This session aims to reduce the impact of negative self-talk and intrusive thoughts related to their cancer diagnosis.

Session 3: Acceptance

This session focuses on acceptance, teaching participants to open up and make room for unpleasant feelings, sensations, and urges instead of fighting them. Through exercises like the "Two Scales" metaphor (balancing acceptance and action) and the "Physicalizing" technique (where emotions are envisioned as objects with shape and weight), participants learn to accept discomfort as a part of life, which can coexist with taking actions aligned with their values.

Session 4: Self-as-Context

The fourth session introduces the concept of self-as-context, the idea that one is not merely the sum of their thoughts, feelings, or roles but rather a context in which these experiences occur. Activities such as the "Chessboard Metaphor" help participants visualize themselves as a board on which emotions and thoughts are like chess pieces, moving but not defining the board itself. This helps in fostering a sense of continuity and wholeness amidst changing psychological experiences.

Session 5: Values Clarification

During this session, participants engage in exercises to clarify what is truly important and meaningful to them—their core values. Through guided discussions and exercises like the "Funeral Speech" or "Values Card Sort", participants identify their values in various life domains (e.g., family, health, personal growth). This understanding guides them to set goals that align with their values, providing motivation and direction for their actions.

Session 6: Committed Action

Building on the previous session's values clarification, session six focuses on committed action. Participants set specific, measurable, achievable, relevant, and time-bound (SMART) goals that are in line with their identified values. The therapist helps them develop action plans and anticipate potential obstacles, practicing problem-solving strategies to overcome these challenges. This session aims to empower participants to take meaningful action despite the presence of difficult emotions or physical symptoms.

Session 7: Handling Barriers

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This session addresses the barriers to living according to chosen values, including fear, pain, and social stigma. Using metaphors like "The Monster on the Bus," participants learn strategies to handle these barriers effectively. Role-playing and group discussions encourage sharing strategies and support among the group members, enhancing their skills in dealing with setbacks and difficulties in their path to value-driven actions.

Session 8: Integration and Closure

The final session serves as a review and integration of all the skills learned throughout the therapy. Participants reflect on their progress, share their successes and challenges, and discuss how they can continue applying ACT principles in their daily lives beyond the therapy. The therapist revisits key concepts and practices, ensuring participants feel confident to maintain their gains and continue their growth independently. This session also provides an opportunity for closure and celebration of the journey participants have undertaken together.

2.4. Data Analysis

For data analysis, descriptive statistics methods such as central tendency indices (frequency, percentage, mean, standard deviation) and dispersion measures (like standard deviation and variance) were used. To examine the research hypotheses, inferential statistics such as tests for normality of data like Kolmogorov-Smirnov and Levene, and finally, analysis of covariance were employed. Data analysis was performed using the statistical software SPSS-25.

3. Findings and Results

The mean age of the entire experimental group was 2.60 with a standard deviation of 0.50, and the mean age of the control group was 2.40 with a standard deviation of 0.63, indicating a similar age distribution between the two groups. The sample group was divided into four separate educational groups, with the highest frequency being 13 individuals or 33.3% from both the experimental and control groups holding an associate's degree. This was followed by 10 individuals or 33.3% holding a high school diploma. Regarding marital status, the sample group was divided into two groups, with 21 individuals or 70.0% being married in both the experimental and control groups. Overall, it can be said that nearly all educational levels were represented in the research. At the descriptive level, central indices such as the mean and dispersion indices such as standard deviation for each of the research variables were calculated separately for the experimental and control groups. The results are presented in Table 1.

Table 1

Descriptive Indices of Hope and Happiness by Group

Variables	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD
Hope	Experimental	12.86	1.80	22.00	4.14
	Control	12.53	1.55	14.00	1.36
Happiness	Experimental	36.80	4.75	42.33	4.11
	Control	42.33	3.75	43.40	3.75

According to Table 1, it appears that the mean scores for the experimental group are higher than those of the control group in both hope and happiness scores. Inferential statistical tests were used to examine the significance of this difference. Given the results and the non-significance of the Kolmogorov-Smirnov test value for each of the dependent variables, the sample group has a normal distribution ($p > 0.05$). In this study, Levene's test for equality of variances was used to examine the homogeneity of the variances of the study variables. Given the results, the assumption of equality of variances in the two groups is maintained as the significance level is greater than 0.05; thus, the results are not significant, and the use of multivariate analysis of covariance is permissible. The results of the test for homogeneity of regression slopes showed that the interaction of covariates (pretests) and dependent variables (posttests) is not significant; therefore, the assumption of homogeneity of regression slopes is maintained.

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Table 2

One-Way Analysis of Covariance (ANCOVA) Results for Posttest Hope Scores of Experimental and Control Groups with Pretest Control

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance Level	Eta Squared	Statistical Power
Hope	Pretest	640.92	1	640.92	149.63	.001	.80	1.00
	Group	268.41	1	268.41	62.66	.001	.62	1.00
	Error	158.47	27	4.28				

As observed in Table 2, with pretest control, there is a significant difference in hope between the experimental and control groups (p < .0001, F = 62.66). In other words, acceptance and commitment-based training, considering the mean hope score of the experimental group compared to the control group mean, has increased hope scores in the experimental group. The effect size or difference is .62, meaning 62% of the individual differences in posttest hope scores are due to the impact of acceptance and commitment-based training (group membership).

Table 3

One-Way Analysis of Covariance (ANCOVA) Results for Posttest Happiness Scores of Experimental and Control Groups with Pretest Control

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance Level	Eta Squared	Statistical Power
Happiness	Pretest	302.79	1	302.79	49.06	.001	.57	1.00
	Group	270.43	1	270.43	43.81	.001	.54	1.00
	Error	228.35	27	6.17				

As seen in Table 3, with pretest control, there is a significant difference in happiness between the experimental and control groups (p < .0001, F = 43.81). Similarly, acceptance and commitment-based training, given the mean happiness score of the experimental group relative to the control group mean, has increased happiness scores in the experimental group. The effect size or difference is .54, meaning 54% of the individual differences in posttest happiness scores are due to the impact of acceptance and commitment-based training (group membership).

4. Discussion and Conclusion

The purpose of the current research was to examine the impact of acceptance and commitment-based group therapy on hope and happiness in women diagnosed with breast cancer. The findings indicate that acceptance and commitment-based group therapy has successfully increased hope and happiness among these women. In simpler terms, this form of group therapy positively affects the hope and happiness of women with breast cancer. These results are consistent with the prior findings (Ataabadi et al., 2022; Ghasemi et al., 2016; Golestanifar & DashtBozorgi, 2021; Khademi & Tasbihsazan mashad, 2019; Larsson et al., 2022; Mahdavi et al., 2017; Malmir et al., 2017; Mogadam et al., 2018; Nikrouy et al., 2022; Roientan et al., 2019; Sharifiyan et al., 2020; Towey-Swift et al., 2023; Twohig & Levin, 2017; Wersebe et al., 2018; Zhang et al., 2018). This finding can be explained by the principle in acceptance and commitment-based group therapy that typical psychological processes in humans do not inherently lead to destructive outcomes. In other words, clients come to the therapy room with the aim of managing their emotions (Zhang et al., 2018). This therapy teaches clients to stop any efforts to reduce, change, avoid, suppress, or control these distressing internal experiences and also to learn to diminish the influence and presence of undesirable thoughts and feelings through effective use of mindfulness. Clients learn to cease the struggle against their internal experiences, to open themselves to these experiences, and allow them to freely flow in and out without resistance or argument (Wersebe et al., 2018). In line with this, Twohig and Levin (2017) have shown in a study on individuals with anxiety and depression disorders that acceptance and commitment therapy can reduce symptoms of anxiety and depression by changing their attitude towards life and increasing their hope and psychological flexibility. Experiential avoidance—the attempt to alter the form, frequency, or situational sensitivity of private events, even when such efforts lead to behavioral harm—is viewed from this therapeutic perspective as having roots in psychological harms, hence the therapy focuses primarily on psychological flexibility to enhance the ability to better accept difficult situations (Twohig & Levin, 2017). Ghasemi et al. (2016) demonstrated in their research that group therapy based on acceptance and commitment in

women with cancer, by clarifying values and actions consistent with these values and enhancing acceptance and cognitive defusion as a method for engaging in valuable goals in the face of adverse events, increases hope (Ghasemi et al., 2016).

Part of the findings of this research showed that group therapy based on acceptance and commitment was effective on the hope indices of women with breast cancer. Women diagnosed with breast cancer initially deny the reality of their diagnosis. In the process of acceptance and commitment-based group therapy, these women learn essential psychological skills to accept painful thoughts and feelings with minimal psychological cost. Through this intervention, women with breast cancer gain the ability to consciously change their behaviors, beliefs, and confront barriers to committed action, becoming aware of their own future thoughts and emotional reactions (such as feelings of vulnerability, depression, anxiety, stress, and painful memories). By employing mechanisms of acceptance and committed action, they experience heightened hope. Acceptance and commitment-based group therapy reduces ineffective (irrational) beliefs, cognitive gaps, and cognitive distortions, which diminishes anxiety and thereby increases hope in women with breast cancer (Nikrouy et al., 2022). This therapy assists clients in accepting their unpleasant thoughts and feelings and ultimately letting go of them, ceasing the struggle with them. Through various exercises, clients learn to neutralize the detrimental effects of their critical and evaluative mind. Acceptance and commitment-based group therapy increases individuals' zest for life and ability to achieve what they desire in life, reducing suffering and reinforcing this learning regularly over the long term, thus sustaining these positive effects.

Explaining the effectiveness of acceptance and commitment-based group therapy on happiness, it can be said that this method includes techniques and exercises that lead to cognitive flexibility, such as defusion from thoughts, acceptance of distressing emotions, and altering their function, freedom from self-descriptive entrapments, achieving the power of self-observation, living in the present, identifying life values, and committing to value-based actions (Ataabadi et al., 2022). These strategies and techniques seem to have helped women with breast cancer manage their negative thoughts and emotions without avoidance and make the best decisions for different life situations and define values that ease their life conditions, committing to appropriate behaviors for their life; consequently, their cognitive flexibility increases, transforming their thinking and emotions from a negative, stable state to a more fluid one, thereby enhancing the likelihood of focusing on the positive aspects of life and improving their sense of well-being. Also, the findings suggest that cognitive flexibility is closely linked to an increase in mood and happiness.

In this study, clients, by substituting themselves as the context, were able to simply experience unpleasant internal events in the present and detach themselves from reactions, memories, and unpleasant thoughts. In fact, the goal was to increase the psychological flexibility of women with breast cancer. Accordingly, a major advantage of this method, compared to other psychotherapies, is considering motivational aspects along with cognitive aspects, due to the greater impact and continuity of treatment efficacy. Acceptance and commitment-based group therapy guides clients to see their thoughts and emotions as separate from themselves, allowing therapists to modify relational frameworks and negative cognitive states. The goal of acceptance and commitment-based group therapy is to increase the full acceptance of a wide range of concrete experiences, including turmoil, thoughts, beliefs, emotions, and sensory-perceptual experiences, ultimately guiding individuals toward enhancing their quality of life. In other words, in acceptance and commitment-based group therapy, the focus is on accepting and then changing and adjusting an individual's relationship with their thoughts. In analyzing this finding, it should be said that the component of acceptance in acceptance and commitment-based group therapy provides the client the ability to feel unpleasant internal experiences without trying to control them, making these experiences appear less threatening and reducing their impact on the individual's life.

5. Suggestions and Limitations

Overall, considering the results obtained from the research and the theories discussed, it can be concluded that group therapy based on acceptance and commitment can be effective in enhancing the happiness of women with breast cancer. In acceptance and commitment-based group therapy, individuals gain psychological flexibility by learning and practicing processes of acceptance, defusion, self-as-context, connection with the present, values, and committed action. Overall, this research has achieved a suitable framework for acceptance and commitment-based therapy. The limitations of the research should be considered, given that the study population comprises a specific group, namely

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only women with breast cancer; therefore, caution must be exercised in generalizing the results. The researcher's inability to control cultural, social, and economic conditions that affect the hope, happiness, and psychological flexibility of women with breast cancer; the inability to control the severity and duration of the disease in women with breast cancer; and the presence of coronavirus concerns for women with breast cancer are other limitations of the research.

It is recommended that future research examine the impact of acceptance and commitment-based therapy on a larger number of individuals. Comparisons of different therapeutic methods such as cognitive therapy, positive psychotherapy, or mindfulness-based cognitive therapy with acceptance and commitment-based therapy in terms of hope, happiness, and psychological flexibility should be considered. Given the effectiveness of group therapy based on acceptance and commitment in increasing happiness, it is recommended that this educational and therapeutic method be employed not only in educational and welfare centers but also in other counseling and therapeutic centers, and for other variables such as resilience, hardiness, forgiveness, and the like.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

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

Transparency Statement

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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