

The Effectiveness of Mindfulness-Based Cognitive Therapy on Life Enthusiasm and Psychological Hardiness in Female Heads of Households with Hypertension

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ABSTRACT

Objective: The aim of this study was to determine the effectiveness of mindfulness-based cognitive therapy on life enthusiasm and psychological hardiness in female heads of households with hypertension.

Methods and Materials: The research method was quasi-experimental, employing a pretest-posttest control group design. The statistical population included female heads of households with hypertension who referred to health centers in District 4 of Tehran in 2022. From this population, 30 participants were selected using convenience sampling and randomly assigned to an experimental group (15 participants) and a control group (15 participants). In this study, questionnaires on life enthusiasm and psychological hardiness were utilized. The experimental group received eight 2-hour sessions of mindfulness-based cognitive therapy, while the control group did not receive any specific intervention. To assess the effectiveness of the mindfulness-based cognitive therapy, inferential statistics were employed, specifically univariate analysis of covariance (ANCOVA)

Findings: The findings indicated that the mean scores of life enthusiasm and psychological hardiness in the posttest were significantly higher than those in the pretest for the experimental group.

Conclusion: Therefore, mindfulness-based cognitive therapy affects life enthusiasm and psychological hardiness in female heads of households with hypertension.

Keywords: *Mindfulness-Based Cognitive Therapy, Life Enthusiasm, Psychological Hardiness, Female Heads of Households, Hypertension.*

1. Introduction

Illness is one of the most significant factors that jeopardize human well-being and health. Among these, hypertension holds a special place. Hypertension is defined as an increase in the force exerted by the blood flow against the walls of blood vessels. This condition affects more than 1.5 billion people worldwide annually and causes approximately 7 million deaths each year. Results from a systematic review study in Iran indicated that 22% of Iranians suffer from hypertension, and less than half of them are aware of their condition. Hypertension accounts for 45% of deaths due to heart disease, 51% of deaths due to stroke, 9.5 million deaths annually, and it is predicted that by 2030, hypertension will be responsible for one-fourth of all deaths (Reckelhoff, 2018).

Currently, numerous crises threaten communities and families in all countries, including Iran. One such crisis is single parenthood, particularly when households are headed by women, who are considered a vulnerable segment of society. This issue consistently brings about fundamental social, economic, communicative, and psychological problems for them. Therefore, providing practical and scientific solutions to improve the condition of this group of women necessitates research, study, and examination. Female heads of households are exposed to various psychological and social harms that affect their quality of life (Shiyani & Zare, 2020).

Enthusiasm refers to a strong inclination towards an activity, object, or person, and it exists in many contexts. This characteristic is easily assessable and refers to individuals striving for excellence in a particular domain. Various authors have interpreted this term as an individual's motivational tendency to achieve their goals (Ruiz-Alfonso et al., 2018). Life enthusiasm has garnered clinical and research attention due to its special importance in conceptualizing and treating psychological disorders from a logotherapy perspective. In psychoanalytic systems, each psychological disorder is associated with specific psychological mechanisms that play an important role in individuals' mental health. Numerous studies support this hypothesis, and research has shown that individuals' physical and mental health significantly correlates with their sense of purpose, meaning, and enthusiasm for life (Hasanzadeh & Talebi, 2023).

Individuals with high psychological hardiness perceive health-related stressful situations as challenging. Psychological hardiness is a personality trait that acts as a

resistance resource against stressful and challenging events (Pandey & Shrivastava, 2017). Such individuals are more committed to their behaviors, feel in control of their conditions and life, and view limitations and challenges as opportunities for growth. Hardy individuals have greater adaptability and control over environmental conditions, and they exhibit higher resilience and ease in coping with changes (Brooks, 2008; Hardt, 2009; Pandey & Shrivastava, 2017).

Mindfulness, defined as paying special and purposeful attention in the present moment without judgment (Kabat-Zinn, 2005), involves becoming aware of one's mental processes and learning skills to identify more effective ways of dealing with thoughts and feelings. Mindfulness entails specific cognitive, behavioral, and metacognitive strategies to focus the attention process, thereby preventing the downward spiral of negative mood, negative thinking, and the tendency towards worrying responses, contributing to the development of a new perspective and the emergence of pleasant thoughts and emotions (Segal et al., 2012).

Thus, the present study aims to answer the question: Does mindfulness-based cognitive therapy affect life enthusiasm and psychological hardiness in female heads of households with hypertension?

2. Methods and Materials

2.1. Study design and Participant

The research method was quasi-experimental, employing a pretest-posttest control group design. The statistical population included female heads of households with hypertension who referred to health centers in District 4 of Tehran in 2022. From this population, 30 participants were selected using convenience sampling and randomly assigned to an experimental group (15 participants) and a control group (15 participants). In this study, questionnaires on life enthusiasm and psychological hardiness were utilized. The experimental group received eight 2-hour sessions of mindfulness-based cognitive therapy, while the control group did not receive any specific intervention.

2.2. Measures

2.2.1. Life Enthusiasm

The Life Enthusiasm Questionnaire was developed by Ramazan Hassanzadeh in 2015 and contains 50 items. The questionnaire is scored on a five-point Likert scale (strongly agree to strongly disagree). Items 8, 11, 13, 16, 19, 27, 33,

and 44 are reverse-scored: (strongly agree = 1, agree = 2, neutral = 3, disagree = 4, strongly disagree = 5), while the rest are scored directly: (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, strongly disagree = 1). The reliability of the questionnaire was calculated using Cronbach's alpha ($\alpha = .93$) and test-retest reliability ($r = .85$). Concurrent validity was reported with Ryff's Psychological Well-Being Scale ($r = .61$), the Meaning in Life Questionnaire ($r = .59$), the Life Regard Index ($r = .68$), the Satisfaction with Life Scale ($r = .63$), and the Life Orientation Test ($r = .70$). Higher scores on this questionnaire indicate greater life enthusiasm, while lower scores indicate less life enthusiasm (Hasanzadeh & Talebi, 2023).

2.2.2. Psychological Hardiness

The Ahvaz Psychological Hardiness Scale (AHI) - 20-item form was designed to measure "psychological hardiness" using factor analysis on a sample of 523 male and female students at Shahid Chamran University of Ahvaz. This questionnaire contains 20 four-option questions: "never: 0," "rarely: 1," "sometimes: 2," and "often: 3." The possible score ranges from 0 to 60. A score between 0 and 15 indicates low psychological hardiness, a score between 15 and 30 indicates moderate psychological hardiness, and a score above 30 indicates high psychological hardiness. The internal consistency of the Ahvaz Hardiness Inventory was assessed using Cronbach's alpha, yielding coefficients of $\alpha = .76$ for the overall sample, $\alpha = .76$ for male participants, and $\alpha = .74$ for female participants. To evaluate the test-retest reliability, the scale was administered to 119 students (53 males and 66 females) six weeks later, resulting in correlation coefficients of $r = .84$ for the overall sample, $r = .84$ for males, and $r = .85$ for females. Concurrent validity was examined using four criterion questionnaires: Maslow's Self-Actualization Scale, Construct Validity Hardiness Scale, Ahvaz Depression Scale, and Anxiety Questionnaire. Correlation coefficients between total scores on the hardiness scale and anxiety were $r = -.55$ for the overall sample, $r = -.70$ for females, and $r = -.44$ for males, indicating a significant negative correlation between hardiness and anxiety. Correlation coefficients between total scores on the hardiness scale and depression were $r = -.62$ for the overall sample, $r = -.71$ for females, and $r = -.57$ for males. Correlation coefficients between total scores on the hardiness scale and self-actualization were $r = .55$ for the overall sample, $r = .65$ for females, and $r = .45$ for males.

Pearson correlation tests between scores on the Construct Validity Hardiness Scale and the Ahvaz Hardiness Inventory indicated statistically significant correlations, with coefficients of $r = .51$ for the overall sample, $r = .61$ for females, and $r = .46$ for males. The reliability of the present questionnaire was $\alpha = .78$ using Cronbach's alpha (Babaei et al., 2018).

2.3. Intervention

2.3.1. Mindfulness-Based Cognitive Therapy (MBCT)

The intervention protocol for this study involves the implementation of Mindfulness-Based Cognitive Therapy (MBCT) to enhance life enthusiasm and psychological hardiness in female heads of households with hypertension (Segal et al., 2012). This structured eight-session program aims to introduce participants to mindfulness practices, develop their skills in present-moment awareness and etc. as follows:

Session 1: Introduction to Mindfulness-Based Cognitive Therapy (MBCT)

The first session focuses on introducing the participants to the concept and principles of MBCT. The session begins with an overview of mindfulness, its benefits, and its role in managing hypertension and enhancing psychological well-being. Participants are taught the importance of being present in the moment without judgment. A brief mindfulness exercise, such as mindful breathing, is conducted to help participants experience mindfulness firsthand. The session concludes with a discussion on setting personal goals for the therapy and expectations for the upcoming sessions.

Session 2: Understanding Automatic Thoughts and Mindfulness Practices

In the second session, participants learn about automatic thoughts and how they influence emotions and behaviors. The session covers the concept of cognitive distortions and their impact on stress and hypertension. Participants are guided through a body scan meditation to develop awareness of physical sensations and learn to identify stress-related tension in the body. Homework assignments include practicing the body scan meditation and recording automatic thoughts and their triggers in a journal.

Session 3: Developing an Attitude of Acceptance

The third session emphasizes cultivating an attitude of acceptance towards thoughts and feelings. Participants are introduced to the concept of non-judgmental awareness and its significance in reducing stress. A guided meditation on

observing thoughts and emotions without reacting to them is conducted. The session also includes discussions on the difference between acceptance and resignation, highlighting how acceptance can lead to proactive coping strategies. Participants are encouraged to practice observing their thoughts and emotions without judgment as homework.

Session 4: Cultivating Present Moment Awareness

This session focuses on enhancing present-moment awareness. Participants are taught techniques to anchor their attention in the present, such as mindful eating and mindful walking exercises. The session explores the impact of rumination on psychological well-being and provides strategies to break the cycle of negative thinking. A guided meditation on focusing attention on present experiences is conducted. Homework assignments include practicing present-moment awareness in daily activities and reflecting on the experience.

Session 5: Exploring the Relationship Between Thoughts, Emotions, and Behaviors

In the fifth session, participants delve deeper into the interplay between thoughts, emotions, and behaviors. Cognitive-behavioral techniques are introduced to help participants identify and challenge negative thought patterns. A guided meditation on acknowledging and letting go of negative thoughts is conducted. Participants engage in group discussions and role-playing exercises to practice cognitive restructuring techniques. Homework includes practicing thought challenging exercises and continuing mindfulness practices.

Session 6: Enhancing Self-Compassion and Reducing Self-Criticism

The sixth session emphasizes the importance of self-compassion in managing stress and improving psychological resilience. Participants are introduced to self-compassion exercises, including loving-kindness meditation. The session explores the impact of self-criticism on mental health and provides strategies to cultivate a kinder, more supportive inner dialogue. Participants are encouraged to practice self-compassion exercises as homework and reflect on their experiences in their journals.

Session 7: Developing Resilience Through Mindfulness

This session focuses on building resilience through mindfulness practices. Participants learn about the concept

of psychological hardiness and its components: commitment, control, and challenge. Guided meditations on building resilience and adapting to stress are conducted. The session includes discussions on real-life applications of mindfulness techniques in coping with challenges. Participants are encouraged to set personal resilience goals and practice mindfulness exercises that support these goals as homework.

Session 8: Integrating Mindfulness into Daily Life

The final session focuses on integrating mindfulness practices into daily life for long-term benefits. Participants review the skills and techniques learned throughout the program and discuss their progress. The session emphasizes the importance of maintaining a regular mindfulness practice and provides strategies for overcoming potential obstacles. A closing meditation on gratitude and setting intentions for the future is conducted. Participants are encouraged to continue their mindfulness journey and utilize the tools and techniques learned to enhance their overall well-being.

2.4. Data Analysis

The data analysis for this study was conducted using both descriptive and inferential statistical methods. Initially, descriptive statistics, including means and standard deviations, were calculated for pretest and posttest scores on life enthusiasm and psychological hardiness for both the experimental and control groups. The normality of data distribution was verified using the Kolmogorov-Smirnov test. To assess the effectiveness of the mindfulness-based cognitive therapy, inferential statistics were employed, specifically univariate analysis of covariance (ANCOVA) via SPSS-26. This method was used to control for pretest scores and determine the significant differences in posttest scores between the experimental and control groups. The significance level was set at $p < .05$, and effect sizes were reported using eta squared (η^2) to quantify the magnitude of the intervention's impact.

3. Findings and Results

As shown in [Table 1](#), both variables exhibited significant changes in the posttest stage compared to the pretest stage in the experimental group due to the intervention.

Table 1*Mean and Standard Deviation of Pretest and Posttest Scores on Life Enthusiasm and Psychological Hardiness*

Variables	Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD
Life Enthusiasm	Control	68.67	6.67	65.68	6.86
	Experimental	67.78	6.37	79.78	8.69
Psychological Hardiness	Control	25.27	4.85	27.31	4.89
	Experimental	26.41	4.47	36.48	5.74

The results of the Kolmogorov-Smirnov test indicated that the data distribution in both groups and in both pretest

and posttest conditions was normal ($P > .05$). Therefore, parametric tests can be used to test the research hypotheses.

Table 2*Results of Univariate Covariance Analysis for Examining the Difference in Life Enthusiasm Scores Between Two Groups*

Variable	Source of Variations	Sum of Squares	df	Mean Squares	F	Significance	Eta Squared
Life Enthusiasm	Pretest	2215.687	1	2215.687	23.864	.001	.39
	Group	2019.78	1	2019.78	22.168	.001	.41
	Error	1688.445	27	62.535			
	Total	3894.687	29				

The results of the covariance analysis in [Table 2](#) indicate that, controlling for pretest scores, the effect of the group on posttest life enthusiasm scores is significant. Thus, after mindfulness-based cognitive therapy, the life enthusiasm

scores in the intervention group increased significantly compared to the control group. Therefore, mindfulness-based cognitive therapy impacts the life enthusiasm of female heads of households with hypertension.

Table 3*Results of Univariate Covariance Analysis for Examining the Difference in Psychological Hardiness Scores Between Two Groups*

Variable	Source of Variations	Sum of Squares	df	Mean Squares	F	Significance	Eta Squared
Psychological Hardiness	Pretest	1251.142	1	1251.142	9.388	.001	.31
	Group	1498.765	1	1498.765	13.452	.001	.39
	Error	1108.456	27	47.19			
	Total	3396.869	29				

The results of the covariance analysis in [Table 3](#) indicate that, controlling for pretest scores, the effect of the group on posttest psychological hardiness scores is significant. Thus, after mindfulness-based cognitive therapy, the psychological hardiness scores in the intervention group increased significantly compared to the control group. Therefore, mindfulness-based cognitive therapy impacts the psychological hardiness of female heads of households with hypertension.

4. Discussion and Conclusion

The findings showed that the mean scores of life enthusiasm in the posttest were significantly higher than in the pretest for the experimental group. Consequently, mindfulness-based cognitive therapy affects the life enthusiasm of female heads of households with hypertension.

Mindfulness is defined as an attentive state and awareness of what is happening in the present moment. This attention is purposeful and involves non-judgmental acceptance of current experiences. Mindfulness practices, including meditation, lead to increased self-awareness and self-acceptance in patients. Mindfulness is not merely a technique; it is a way of "being" and "understanding" that involves comprehending personal feelings. Mindfulness is often equated with acceptance, which means accepting thoughts as thoughts and feelings as feelings without the need to avoid them.

Mindfulness exercises regulate stress responses and enhance flexible adaptability, self-compassion, and empathy. This ultimately prevents the emergence of harmful thoughts. By understanding the process of their thoughts, feelings, and emotions and learning to deal with them non-

judgmentally, individuals can reduce harmful emotional responses (Segal et al., 2012).

The findings also showed that the mean scores of psychological hardiness in the posttest were significantly higher than in the pretest for the experimental group. Consequently, mindfulness-based cognitive therapy affects the psychological hardiness of female heads of households with hypertension.

Mindfulness training can enhance cognitive coping processes such as positive reappraisal and improve emotional regulation skills like resilience and distress tolerance, as well as problem-solving training, which can increase psychological security. Regular mindfulness practice can create observable changes in individuals' lives and psychological functioning over time, fostering better coping strategies and defensive mechanisms that contribute to psychological well-being (Kabat-Zinn, 2005; Segal et al., 2012).

Mindfulness training promotes more adaptive processing of thoughts and emotions, which underlie behavioral and psychological problems related to stress and anxiety. Mindfulness techniques, through providing opportunities for meditation, effectively relax muscles and reduce worry, stress, and anxiety. Researchers believe that emotions and physiological states can contribute to increased anxiety and provide false evidence for further anxiety (Segal et al., 2012). When individuals experience these conditions, they respond with more anxiety, avoidance, and emotional turmoil, exacerbating their anxiety. Thus, the first step in helping individuals with anxiety symptoms is to stop the cycle of anxiety and then modify limiting experiences of anxiety through replacing old habits with new ones, such as mindfulness practices, that enhance relaxation skills.

5. Limitations and Suggestions

This study had several limitations that should be acknowledged. The sample size was relatively small, which may limit the generalizability of the findings to a broader population. Additionally, the use of convenience sampling and the focus on female heads of households with hypertension from a specific region in Tehran may introduce selection bias. The lack of long-term follow-up also limits the understanding of the sustained effects of mindfulness-based cognitive therapy. Finally, self-report questionnaires were used to measure life enthusiasm and psychological hardiness, which may be subject to social desirability bias and may not fully capture the complexity of these constructs.

Future research should aim to include larger and more diverse samples to enhance the generalizability of the findings. Longitudinal studies with extended follow-up periods would be valuable to assess the long-term effects and sustainability of mindfulness-based cognitive therapy. Additionally, future studies should consider using a mixed-methods approach, incorporating qualitative data to gain deeper insights into participants' experiences and the mechanisms underlying the observed changes. Exploring the effects of mindfulness-based cognitive therapy on other psychological and physiological outcomes in different populations, such as men or individuals with other chronic conditions, would also be beneficial.

The findings of this study suggest that mindfulness-based cognitive therapy can be a valuable intervention for improving life enthusiasm and psychological hardiness in female heads of households with hypertension. Healthcare providers and mental health practitioners should consider incorporating mindfulness-based techniques into their treatment plans for this population. Developing community-based programs and workshops to teach mindfulness practices can help reach a wider audience and provide ongoing support. Additionally, policymakers should recognize the importance of psychological interventions in managing chronic health conditions and allocate resources to support the implementation and evaluation of such programs in healthcare settings.

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.

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