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Comparison of the Effectiveness of Mindfulness-Based Cognitive Therapy and Well-Being Therapy on Health Indicators in Patients with Hypertension

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A B S T R A C T

The aim of the present study was to compare the effectiveness of mindfulness-based cognitive therapy and well-being therapy on health indicators in patients with hypertension. This applied research, which utilized a field data collection method, employed a descriptive, interventional, and semi-experimental design with a pre-test, post-test, and control group format. The statistical population included all patients aged 45 to 55 years with hypertension who visited health centers and hospitals in the city of Babol during the first half of 2024 and had medical records. Based on inclusion and exclusion criteria and using a convenience sampling method, 45 participants were selected and divided into three groups: mindfulness-based cognitive therapy (15 participants), well-being therapy (15 participants), and a control group (15 participants). Data collection instruments included health indicators questionnaires, whose validity was confirmed by experts. Reliability was assessed using Cronbach's alpha coefficients, calculated as 0.79, 0.94, and 0.89, respectively. Data analysis was conducted using descriptive statistics (mean and standard deviation) and inferential statistics (Kolmogorov-Smirnov test and multivariate and univariate analysis of covariance) with SPSS 24 and Excel software. The results indicated significant differences in the effectiveness of mindfulness-based cognitive therapy and well-being therapy on the health indicators of patients with hypertension. Furthermore, mindfulness-based cognitive therapy was shown to be effective on the health indicators of these patients.

Keywords: *Mindfulness-Based Cognitive Therapy, Well-Being Therapy, Health Indicators, Hypertension.*

1. Introduction

Hypertension is the most common cardiovascular disorder, affecting 20% to 50% of the adult population worldwide. In a comparative risk assessment of 84 risk factors and their clusters, it ranks first in terms of the global disease burden. Additionally, the age-standardized prevalence rate in Iran is reported to be 2.4 times higher than the global average and 1.9 times higher than in lower-middle-income countries. Hypertension increases the risk of cardiovascular diseases (Rabipour et al., 2023).

The factors contributing to hypertension can be categorized into three groups: 1) non-modifiable factors (e.g., age, gender, early menopause, etc.), 2) modifiable factors (e.g., stress, obesity, diabetes, hypertension, physical inactivity, high LDL cholesterol, smoking, etc.), and 3) unconfirmed risk factors (e.g., inadequate intake of B vitamins, hyperinsulinemia, etc.) (Kolahi et al., 2022).

Psychological well-being encompasses mental comfort, a sense of self-efficacy, autonomy, competence, understanding intergenerational connections, and recognizing one's ability to actualize intellectual and emotional capacities (Ryff, 2018). According to the World Health Organization's new approach, health is not merely the absence of disease but also the state of physical, psychological, and social well-being. Therefore, in assessing individual health, attention should not only focus on traditional health indicators such as mortality and morbidity rates but also on individuals' perceptions of quality of life (Zonderman et al., 2019). While general health refers to the dynamic and reciprocal interaction of physical, psychological, and social well-being, mental health refers to the ability to harmoniously relate to others, adapt and modify one's individual and social environment, and resolve personal conflicts and desires, enabling the individual to live a meaningful and purposeful life. A mentally healthy person is free from anxiety and disabling symptoms, can establish constructive relationships with others, and cope with life stressors (Dindo et al., 2020).

In recent years, one therapeutic approach that many researchers have investigated for its effectiveness in various domains is Mindfulness-Based Cognitive Therapy (MBCT) (Rabipour et al., 2023). MBCT was first developed by Teasdale and colleagues in 1992 by combining principles and components of Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) program with Beck's Cognitive Therapy (Segal et al., 2013). This therapeutic approach consists of eight sessions. The primary goal of MBCT is to enable participants to establish a connection with their thoughts, feelings, and bodily sensations, breaking inefficient habitual cycles such as rumination that increase vulnerability to psychological disorders (Segal et al., 2013). Overall, MBCT, as a third-wave cognitive-behavioral therapy, has been effective across a wide range of psychological issues and disorders (Dindo et al., 2020). Initially introduced by Williams and colleagues to prevent relapse in depression, MBCT integrates aspects of cognitive therapy with meditation techniques, aiming to enhance patients' attention control to identify slight mood changes and prevent the recurrence of the disorder. MBCT increases cognitive flexibility, reduces rumination, overgeneralization in autobiographical memory, and self-critical evaluations, and fosters beneficial cognitive processes such as non-judgmental observation of mental content. In this method, clients are encouraged to process experiences as they are, without judgment, and to accept and change their relationship with challenging thoughts and emotions (Malboeuf-Hurtubise et al., 2024; Manzomeh & Akbari, 2019).

On the other hand, Well-Being Therapy (WBT) is a novel approach in the field of positive psychology, originating from cognitive-behavioral therapy and applied either independently or alongside cognitive-behavioral therapy in various studies (Fava et al., 1998). Its effectiveness in treating emotional and mood disorders and enhancing psychological well-being has been confirmed (Fava, 2019). Fava's innovative work combines the theoretical foundations of existential and positive psychology with the practical techniques and principles of cognitive-behavioral therapy, creating a novel approach to treating and preventing a wide range of psychiatric disorders. WBT is a short-term (eight-session), structured, directive, and problem-focused intervention based on Ryff's Psychological Well-Being model (Ryff, 2018). It uses self-reflection, systematic journaling, and therapist-client interactions to enhance clients' psychological well-being (Pirnia et al., 2016).

The primary question of this study is whether there is a difference in the effectiveness of MBCT and WBT on the health indicators of patients with hypertension.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a semi-experimental design with pre-test, post-test, and follow-up (three months after the post-test) involving three groups (two experimental groups

and one control group). The statistical population included all 45- to 55-year-old patients with hypertension visiting health centers and hospitals in the city of Babol during the first half of 2024 who had medical records. Among these, 45 patients who were willing to cooperate and provided informed consent were selected. The sample size was determined using G-Power software. A purposive non-random sampling method was used to select the sample of 45 participants, divided into three groups: MBCT (15 participants), WBT (15 participants), and control (15 participants). Random assignment through lottery determined which participants received MBCT or WBT interventions, while the control group received no interventions.

Inclusion Criteria:

1. Diagnosis of chronic hypertension by an internal medicine or cardiology specialist.
2. No severe physical illnesses such as cancer, MS, Alzheimer's, etc.
3. No severe psychiatric disorders such as psychosis.
4. Age range: 45–55 years.
5. Minimum education level: completion of junior high school.
6. No use of psychotropic medications or substances in the past three months.
7. Below-average score on the quality-of-life questionnaire.
8. No concurrent participation in other therapeutic or psychological interventions.
9. Willingness to participate and completion of the informed consent form.

Exclusion Criteria:

1. Absence in more than two intervention sessions.

2.2. Measures

2.2.1. Health Indicators

To assess the health indicators of patients with hypertension, standard blood pressure measurement devices and cortisol assessment using ELISA kits were utilized.

2.3. Interventions

2.3.1. Mindfulness-Based Cognitive Therapy (MBCT)

Mindfulness-Based Cognitive Therapy (MBCT) is an evidence-based intervention designed to prevent the recurrence of psychological disorders such as depression and to enhance overall mental health. It combines elements of Beck's Cognitive Therapy with mindfulness techniques rooted in Mindfulness-Based Stress Reduction (MBSR) (Rabipour et al., 2023; Zuo et al., 2023). The therapy typically spans eight structured weekly sessions, each lasting approximately two hours. Participants learn skills to observe their thoughts and feelings nonjudgmentally, recognize patterns of habitual thinking, and develop greater awareness of the present moment. This approach enables participants to break the cycle of negative thought patterns and enhance emotional regulation.

MBCT Intervention Sessions

Session 1: Awareness and Automatic Pilot

The session focuses on introducing mindfulness and the concept of living on "automatic pilot." Participants engage in mindful eating exercises and practice awareness of their body through a body scan meditation. Discussion emphasizes the role of mindfulness in recognizing and shifting from habitual, automatic reactions.

Session 2: Living in the Present

Participants explore the concept of the present moment and practice techniques to anchor themselves in the now, such as mindful breathing. The session includes exercises to identify distractions and foster a nonjudgmental attitude toward their thoughts and feelings.

Session 3: Mind-Body Connection

This session delves into the relationship between thoughts, emotions, and physical sensations. Participants practice body scan meditations and learn to observe how stress manifests in their bodies.

Session 4: Recognizing Patterns

Participants examine their habitual responses to stress and begin to distinguish between helpful and unhelpful reactions. They practice responding rather than reacting to challenges using mindfulness exercises.

Session 5: Allowing and Letting Be

The focus shifts to accepting difficult emotions and thoughts without judgment. Participants practice meditation techniques that promote non-attachment, such as observing thoughts as if they were clouds passing in the sky.

Session 6: Thoughts Are Not Facts

This session addresses cognitive distortions and unhelpful thinking patterns. Participants practice mindful inquiry and develop skills to observe their thoughts objectively, reducing over-identification with negative thoughts.

Session 7: How Can I Best Take Care of Myself?

Participants explore strategies for integrating mindfulness into their daily routines and learn to identify

triggers that may lead to negative thought spirals. They create personalized action plans for maintaining mindfulness practice.

Session 8: Maintaining and Deepening Practice

The final session focuses on consolidating skills learned throughout the program. Participants reflect on their progress, share experiences, and develop long-term plans to sustain mindfulness practice.

2.3.2. Well-Being Therapy (WBT)

Well-Being Therapy (WBT) is a structured, short-term intervention rooted in cognitive-behavioral principles and Ryff's model of psychological well-being (Fava, 2019; Fava et al., 1998; Ryff, 2018). The therapy focuses on fostering self-acceptance, autonomy, purpose in life, environmental mastery, personal growth, and positive relationships. It is typically conducted over eight sessions, providing participants with tools to identify and enhance aspects of their psychological well-being. Through guided reflection, journaling, and therapist-client interactions, WBT aims to improve resilience and prevent emotional disorders.

WBT Intervention Sessions

Session 1: Introduction to Psychological Well-Being

Participants are introduced to the concept of psychological well-being and the six dimensions of Ryff's model. They reflect on their current levels of well-being and set initial goals for the program.

Session 2: Identifying Strengths and Resources

The session focuses on identifying personal strengths, resources, and positive traits. Participants engage in exercises to recognize their resilience and build a foundation for enhancing well-being.

Session 3: Self-Acceptance

This session addresses self-acceptance and self-compassion. Participants explore ways to acknowledge and embrace their strengths and limitations without self-criticism.

Session 4: Purpose in Life

Participants delve into their life goals and values, reflecting on what gives their lives meaning. Exercises focus on aligning daily activities with a sense of purpose.

Session 5: Positive Relationships

The focus shifts to cultivating and maintaining positive relationships. Participants learn communication skills and strategies for nurturing connections with others.

Session 6: Environmental Mastery

This session emphasizes the importance of managing one's environment effectively. Participants identify factors within their control and develop problem-solving skills to address challenges.

Session 7: Personal Growth

Participants explore opportunities for personal development and growth, emphasizing learning from experiences and fostering curiosity and creativity in daily life.

Session 8: Sustaining Well-Being

The final session integrates all aspects of the program, encouraging participants to reflect on their journey and create actionable plans to sustain and enhance their well-being in the long term.

2.4. Data Analysis

Data analysis was performed using SPSS version 26. Descriptive statistics, including means and standard deviations, were used to summarize the data. Normality of the data distribution was assessed using the Shapiro-Wilk test, and Levene's test was applied to verify homogeneity of variances. To evaluate the effects of the interventions, a mixed-design analysis of covariance (ANCOVA) was conducted, controlling for baseline measurements. The Greenhouse-Geisser correction was applied where assumptions of sphericity were violated. Effect sizes (Eta squared) were calculated to determine the magnitude of the observed effects, and statistical significance was set at $p < 0.05$.

3. Findings and Results

Descriptive statistics for the research variables in the pre-test, post-test, and follow-up stages are presented in Table 1. A comparison of the means in this table indicates that the mean scores of the intervention groups (Mindfulness-Based Cognitive Therapy and Well-Being Therapy) on the health indicators of patients with hypertension have changed in the post-test stage compared to the control group.

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Table 1

Descriptive Statistics of the Variables by Groups and Stages

Variables	Group	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Health Indicators	Control	133.73	2.37	130.20	2.57	-	-
	Well-Being Therapy	133.27	2.15	122.60	3.79	123.87	3.79
	Mindfulness-Based Cognitive Therapy	134.27	2.94	121.33	4.20	122.93	3.69

The results of the Shapiro-Wilk test showed that the data distribution in all three groups and at all three stages (pre-test, post-test, and follow-up) was normal. Therefore, parametric tests can be used to test the research hypotheses.

Levene's test for equality of error variances was used to assess homogeneity of variances. If the significance level is greater than 0.05, it indicates that the assumption of equal variances is not violated. The results of this test confirmed homogeneity of variances across all variables.

Table 2

Summary of ANCOVA Results for the Research Hypothesis

Source	Sum of Squares	df	Mean Squares	F	Sig.	Eta Squared
Time Factor						
Sphericity Assumed	1856.193	2	928.096	57.524	0.000	1.000
Greenhouse-Geisser Correction	1856.193	1.175	1580.172	57.524	0.000	1.000
Huynh-Feldt Correction	1856.193	1.188	1562.943	57.524	0.000	1.000
Lower-Bound Correction	1856.193	1.000	1856.193	57.524	0.000	1.000
Interaction Between Time and Repeated Factor						
Sphericity Assumed	44.067	2	22.033	14.996	0.000	0.583
Greenhouse-Geisser Correction	44.067	1.644	26.807	14.996	0.000	0.583
Huynh-Feldt Correction	44.067	1.754	25.129	14.996	0.000	0.583
Lower-Bound Correction	44.067	1.000	44.067	14.996	0.000	0.583
Error						
Sphericity Assumed	1419.807	88	16.134			
Greenhouse-Geisser Correction	1419.807	51.686	27.470			
Huynh-Feldt Correction	1419.807	52.256	27.170			
Lower-Bound Correction	1419.807	44.000	32.268			

The ANCOVA results in Table 2 indicate that all multivariate tests show significant variance for the interaction between group and repeated measures. For example, using the Greenhouse-Geisser correction, the interaction of time and repeated measures yields $F = 14.996$, $p < 0.01$, Eta Squared = 0.583. The effect size (Eta Squared = 0.583) confirms a significant difference in the effectiveness of Mindfulness-Based Cognitive Therapy and Well-Being Therapy on health indicators in patients with hypertension. Thus, the research hypothesis is supported.

4. Discussion and Conclusion

The results of the hypothesis indicated a significant difference in the effectiveness of mindfulness-based therapy and well-being therapy on the health indicators of patients with hypertension. Thus, the research hypothesis is confirmed.

These findings are consistent with the results of prior studies (Fava, 2019; Fava et al., 1998; Manzomeh & Akbari, 2019; Pirnia et al., 2016; Rabipour et al., 2023; Segal et al., 2013).

To interpret these results, it can be stated that mindfulness exercises are a powerful method for improving physical and mental health. This approach helps individuals achieve calmness and balance by observing and accepting their thoughts and feelings without judgment. Through mindfulness breathing techniques, individuals focus on external events and objects beyond their control. These practices, which include muscle relaxation and mindfulness meditation, contribute to stress reduction and improved mental health, particularly for patients with hypertension, thereby positively impacting their physical and psychological conditions.

Mindfulness practice is an approach that assists individuals with hypertension in enhancing their physical

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and mental health by altering their perspectives. This method helps patients reject false beliefs and reduce mental concerns, teaching them to embrace rather than avoid thoughts and stressful situations. By focusing on positive aspects and seeking personal growth, patients are guided to improve their psychological well-being. The goal is to encourage individuals to face challenges and problems, rather than avoid them, and strengthen their mindful awareness to enhance overall health (Rabipour et al., 2023; Segal et al., 2013).

Conversely, well-being therapy offers a comprehensive approach to improving the health of individuals with hypertension. This method emphasizes educating and empowering patients to achieve better physical and mental health through changes in thoughts and behaviors. Patients learn to restructure irrational thoughts and focus on the positive aspects of life (Fava, 2019; Fava et al., 1998; Pirnia et al., 2016). They are encouraged to plan and schedule activities that are controllable and enjoyable, thereby fostering a greater sense of control over their lives.

Additionally, well-being therapy emphasizes self-acceptance and improved self-esteem. Patients are encouraged to recognize both their positive and negative traits and develop a more positive outlook on themselves by accepting these characteristics.

This study has several limitations. First, the sample size was relatively small, limiting the generalizability of the findings to a broader population. Second, the study was conducted in a specific geographic and cultural context, which may influence the applicability of the results to other regions or cultures. Third, the reliance on self-reported measures may introduce bias due to social desirability or inaccurate recall. Lastly, the absence of long-term follow-up beyond three months limits the understanding of the sustained effects of the interventions over time.

Future studies should consider using larger, more diverse samples to enhance the generalizability of the findings. Longitudinal research with extended follow-up periods is recommended to assess the durability of the intervention effects. Additionally, incorporating objective physiological measures, such as blood pressure monitoring or cortisol levels, alongside self-reported data could provide a more comprehensive assessment of the interventions' impact. Comparative studies that examine the effectiveness of mindfulness-based cognitive therapy and well-being therapy in other psychological and physical health conditions could further expand the evidence base.

Healthcare practitioners should consider integrating mindfulness-based cognitive therapy and well-being therapy into treatment protocols for patients with hypertension to address both physical and psychological health. Training programs should be developed to equip clinicians with the skills necessary to implement these therapies effectively. Additionally, interventions should be tailored to the cultural and individual needs of patients to enhance engagement and outcomes. Incorporating group sessions or digital platforms for delivering these therapies could increase accessibility and support for patients in managing their health.

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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