

The Effectiveness of Mindfulness-Based Cognitive Therapy on Psychological Flexibility and Zest for Life in Adolescents

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Article Info

Article type:

Original Research

How to cite this article:

Farrashzadehjeldar, R., & Mohammadzadeh Admolae, R. (2025). The Effectiveness of Mindfulness-Based Cognitive Therapy on Psychological Flexibility and Zest for Life in Adolescents. *Journal of Adolescent and Youth Psychological Studies*, 6(6), 1-6.
<http://dx.doi.org/10.61838/kman.jayps.6.6.1>



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ABSTRACT

Objective: The present study aimed to determine the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on psychological flexibility and zest for life in adolescents.

Methods and Materials: The research method was a quasi-experimental design with experimental and control groups, including pre-test and post-test. The statistical population consisted of adolescents who referred to counseling centers in the city of Babol in 2023. The research sample included 30 adolescents selected through convenience sampling, who were then randomly assigned into two groups of 15 participants each (experimental and control). To assess the variables under study, the Psychological Flexibility Questionnaire and the Zest for Life Questionnaire were employed. The experimental group received eight 90-minute sessions of MBCT, while the control group did not receive any specific intervention.

Findings: The findings from data analysis showed that there was a significant difference in the post-test mean scores of psychological flexibility and zest for life between the experimental and control groups ($p < 0.01$).

Conclusion: Therefore, it can be concluded that Mindfulness-Based Cognitive Therapy has an effect on psychological flexibility and zest for life in adolescents.

Keywords: *Mindfulness-Based Cognitive Therapy, psychological flexibility, zest for life, adolescents.*

1. Introduction

Adolescence is a critical period in life characterized by rapid physical, psychological, and social changes, which, due to inevitable fluctuations and conflicts, can pose certain risks. In other words, the hazards of this stage—being a gateway to adulthood and the formation of identity—may alter the course of an adolescent's personal, professional, and familial life (Yang et al., 2023). Adolescence is considered

a critical transitional phase due to extensive and rapid physiological, cognitive, and psychological changes. During this period, adolescents face hormonal changes, cognitive development, and identity transformations. Additionally, the need for emotional balance—especially in maintaining psychological and emotional stability in the face of environmental stressors and balancing emotion and reason—is one of the most significant psychological needs during adolescence (Urbańska-Grosz, 2024).

Cognitive flexibility changes throughout a person's life span. Furthermore, specific conditions such as obsessive-compulsive disorder are associated with reduced cognitive flexibility. Since cognitive flexibility is a vital and necessary component of learning, any deficits in this area may lead to other consequences. Psychological flexibility refers to the degree of openness an individual has toward internal and external experiences and entails the ability to remain connected to the present moment and to distinguish the self from inner thoughts and experiences (Hasheminejad et al., 2024).

Flexibility enables individuals to respond effectively and adaptively to pressures, challenges, and other emotional and social demands. The ability to shift cognitive schemas to adapt to changing environmental stimuli is a core element in definitions of cognitive flexibility. Researchers define cognitive flexibility as an individual's assessment of the controllability of situations—an assessment that varies across contexts (Eshagh Neymvari et al., 2024). Psychological flexibility helps individuals confront their current situations and conditions, allowing them to evaluate their circumstances and accordingly modify or maintain their behavior. Thus, individuals become assured that they are acting effectively in those circumstances (Norouzi et al., 2023).

A crucial element for efficient and effective living is zest. Zest for life is essential because it is the only effective way to confront life's obstacles. Zest is something we practice in different ways every day. Additionally, employee enthusiasm is defined as a positive attitude formed by the employee toward the organization and its achievements, linked to the value of performance outcomes. Employee zest refers to the extent to which individuals engage or disengage from their personal values through their performance roles. Zest is characterized by high levels of involvement (passion, excitement, and absorption) in work and the organization (pride and identity), as well as emotional energy (enthusiasm and alertness) and a sense of presence in work (Ghadami, 2018; Hasan Zadeh, 2019, 2020). In other words, zest is an intense inclination toward an important activity in which the individual invests substantial time and energy and attaches significant value (Hasan Zadeh, 2019, 2020).

Mindfulness-Based Cognitive Therapy (MBCT), as one of the third-wave cognitive-behavioral approaches, has shown effectiveness across a wide range of psychological problems and disorders (Del-Azar et al., 2022). Originally developed by Williams and colleagues for the prevention of depression relapse, MBCT integrates elements of cognitive

therapy with meditative techniques, aiming to help clients gain control over their attention so they can identify subtle mood changes and prevent relapse. MBCT enhances cognitive flexibility, reduces rumination, overgeneralization in autobiographical memory, and self-critical evaluations, while promoting beneficial cognitive processes such as non-judgmental observation of mental content. In this approach, clients are encouraged to process experiences non-judgmentally as they are and to alter their relationship with challenging thoughts and feelings, learning to accept them (Segal et al., 2013).

Therefore, this study seeks to answer the question: Does Mindfulness-Based Cognitive Therapy affect psychological flexibility and zest for life in adolescents?

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with experimental and control groups, including pre-test and post-test. The statistical population consisted of adolescents who referred to counseling centers in the city of Babol in 2023. The research sample comprised 30 adolescents selected through convenience sampling. They were randomly assigned to two groups of 15 participants each (experimental and control). To measure the variables under study, the Psychological Flexibility Questionnaire and the Zest for Life Questionnaire were used. The experimental group received eight 90-minute sessions of Mindfulness-Based Cognitive Therapy (MBCT), while the control group did not receive any specific intervention.

2.2. Measures

2.2.1. Psychological Flexibility

This self-report questionnaire was developed by Dennis and Vander Wal in 2010. It is a short, 20-item tool designed to assess a type of flexibility necessary for success in replacing dysfunctional thoughts with more effective ones. It is used to evaluate an individual's progress in clinical and non-clinical contexts and to assess progress in cultivating flexible thinking within cognitive-behavioral therapy (CBT) for depression and other mental disorders. The questionnaire aims to measure three components of cognitive flexibility: (a) the willingness to perceive difficult situations as understandable (Perceived Controllability: Items 1, 2, 4, 7, 9, 11, 15, 17), (b) the ability to understand multiple

alternative justifications for life events and human behaviors (Perceived Behavioral Justification: Items 8, 10), and (c) the ability to generate multiple alternative solutions for difficult situations (Perceived Alternatives: Items 3, 5, 6, 12, 13, 14, 16, 18, 19, 20). It uses a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Items 2, 4, 7, 9, 11, and 17 are reverse-scored. The total score ranges from 20 to 140. In Dennis and Vander Wal's (2010) study, concurrent validity of the questionnaire was reported as $r = -.39$ with the Beck Depression Inventory, and convergent validity as $r = .75$ with the Martin and Rubin Cognitive Flexibility Scale. Cronbach's alpha for the total scale, Perceived Controllability, and Perceived Alternatives was reported as .91, .84, and .91, respectively. Test-retest reliability was reported as .81, .77, and .75, respectively. In Iran, Shareh et al. (2013) reported a test-retest reliability coefficient of .71 for the total scale and a Cronbach's alpha of .90. In the present study, Cronbach's alpha was calculated at .85.

2.2.2. Zest for Life

The Zest for Life Questionnaire was developed by Ramazan Hassan Zadeh in 2015. It consists of 50 items scored on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." Items 8, 11, 13, 16, 19, 27, 33, and 44 are reverse-scored as follows: strongly agree = 1, agree = 2, neutral = 3, disagree = 4, strongly disagree = 5. The remaining items are directly scored in the opposite direction. The reliability of the questionnaire was calculated using Cronbach's alpha ($\alpha = .93$) and test-retest method ($r = .85$). Concurrent validity was reported with the following instruments: 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 ($r = .70$). A higher score on this questionnaire indicates greater zest for life, while a lower score indicates less zest for life.

2.3. Intervention

The intervention protocol consisted of eight structured sessions of Mindfulness-Based Cognitive Therapy (MBCT), each lasting 90 minutes and conducted weekly for the experimental group. The sessions were designed based on standard MBCT manuals and included practices such as mindful breathing, body scan, mindful movement, and awareness of thoughts and emotions. Each session focused on cultivating present-moment awareness, developing nonjudgmental observation of inner experiences, and enhancing psychological flexibility through cognitive restructuring and experiential exercises. Participants were also assigned daily home practices, including mindfulness meditations and reflective journaling, to reinforce session content and encourage skill integration into daily life. No therapeutic intervention was provided to the control group during this period.

2.4. Data Analysis

Data analysis was conducted using SPSS software, employing both descriptive and inferential statistical methods. Descriptive statistics, including means and standard deviations, were calculated to summarize the pre-test and post-test scores of psychological flexibility and zest for life in both experimental and control groups. To assess the normality of data distribution, the Kolmogorov-Smirnov test was used. Given that the assumptions of normality and interval-level measurement were met, univariate analysis of covariance (ANCOVA) was employed to compare post-test scores between groups while controlling for pre-test scores. Effect sizes were reported using eta squared (η^2) to determine the magnitude of group differences. A significance level of $p < .05$ was set for all statistical tests.

3. Findings and Results

Table 1 shows that the means and standard deviations of psychological flexibility and zest for life changed from pre-test to post-test in the sample.

Table 1

Descriptive Indicators of Variables in Experimental and Control Groups

Variable	Group	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD
Psychological Flexibility	Experimental	15	56.38	6.35	66.57	7.35
	Control	15	55.87	6.14	53.69	6.56
Zest for Life	Experimental	14	49.86	5.35	51.74	5.74
	Control	14	52.35	5.86	61.51	7.69

The results of the Kolmogorov–Smirnov test indicated that the distribution of the research variables was normal. Given that the variables in both the pre-test and post-test

followed a normal distribution and that the measurement scale was interval-level, parametric analysis of covariance (ANCOVA) was used for data analysis.

Table 2

Univariate ANCOVA Results for Psychological Flexibility

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance	Eta ²
Psychological Flexibility	Pre-test	2869.861	1	2869.861	32.38	.001	.59
	Group	3418.651	2	1709.325	39.86	.001	.56
	Error	2216.915	27	82.107			
	Total	45216.357	29				

As shown in Table 2, the calculated significance level is less than the alpha level of .05, indicating that the computed F-value is statistically significant. Therefore, it can be

concluded that Mindfulness-Based Cognitive Therapy has a significant effect on adolescents' psychological flexibility.

Table 3

Univariate ANCOVA Results for Zest for Life

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance	Eta ²
Zest for Life	Pre-test	1388.278	1	1388.278	9.86	.001	.49
	Group	1453.691	1	1453.691	22.34	.001	.52
	Error	1254.537	27	46.464			
	Total	34286.821	29				

The ANCOVA results in Table 3 indicate that, after controlling for pre-test scores, the group variable had a statistically significant effect on post-test scores of zest for life. Specifically, post-intervention scores in the experimental group increased significantly compared to the control group. Therefore, it can be concluded that Mindfulness-Based Cognitive Therapy has a significant effect on adolescents' zest for life.

4. Discussion and Conclusion

The findings from the data analysis indicated that there was a significant difference in the post-test mean scores of psychological flexibility between adolescents in the experimental and control groups. Therefore, Mindfulness-Based Cognitive Therapy (MBCT) has an impact on adolescents' psychological flexibility. This result is consistent with prior findings (Abbasi, 2023; Dokani et al., 2021; Moradi et al., 2021; Ramaci et al., 2019; Shoghi et al., 2023).

One of the key components of this therapy is teaching individuals how to cope with negative thoughts and stressful events through breathing exercises and mindfulness practices. Through this method, individuals learn how to overcome negative aspects of their lives and instead focus

on the positive. These mindfulness techniques help clients gain greater control over their mind and body, thereby improving their overall well-being. Meditation practices—such as mindful breathing, eating, seeing, and hearing—emphasize present-moment awareness. In this approach, clients learn to restructure irrational thoughts and focus on positive aspects of life. They are encouraged to plan and schedule activities that are both enjoyable and within their control. This, in turn, helps them gain a stronger sense of control over their lives. Moreover, therapeutic well-being emphasizes self-acceptance and enhancing self-esteem. Clients are encouraged to recognize both their strengths and weaknesses and, through this process of acceptance, develop a more positive self-view.

The findings also revealed that there was a significant difference in the post-test mean scores of zest for life between adolescents in the experimental and control groups. Therefore, Mindfulness-Based Cognitive Therapy affects adolescents' zest for life. This result is consistent with prior findings (Del-Azar et al., 2022; Goldberg et al., 2018; Kabat-Zinn, 1994; Oraki et al., 2022; Rashidi Shiraz, 2022; Rostami et al., 2016; Segal et al., 2013).

Mindfulness fosters increased awareness, ease, and renewed discovery in all of life's experiences. The ultimate goal of this process is to enhance access to inherent sources

of joy, compassion, and connection. Mindfulness techniques are used to cultivate mental states and emotions that facilitate adaptive responses to various situations. Mindfulness enhances the ability to focus on one task at a time. This capacity for concentration can be applied to all actionable tasks. Mindfulness teaches individuals how to avoid distractions and maintain high levels of attention on their tasks. Those with higher levels of mindfulness possess greater insight and knowledge regarding their cognitive processes and abilities and apply effective strategies when dealing with life's challenges. Mindfulness increases awareness of the self, others, and the present moment. This heightened awareness may account for the observed improvements in health indicators and psychological adjustment. In other words, increased awareness and attentiveness enable individuals to remain present under any circumstance and to fully utilize the opportunities available in various activities that can serve as effective strategies for enhancing well-being.

5. Limitations & Suggestions

One of the main limitations of this study was the relatively small sample size, which may limit the generalizability of the findings to broader adolescent populations. Additionally, the use of convenience sampling and self-report questionnaires may have introduced response bias and reduced the objectivity of the data. The lack of long-term follow-up also restricts understanding of the sustained effects of Mindfulness-Based Cognitive Therapy on psychological flexibility and zest for life. Furthermore, the study did not account for potential confounding variables such as family dynamics, socioeconomic status, or co-occurring psychological conditions.

Future research is recommended to replicate this study with larger and more diverse samples to enhance the external validity of the findings. Including follow-up assessments would help determine the long-term effectiveness and durability of MBCT outcomes. It is also suggested that future studies incorporate multi-informant data, such as parental or teacher reports, to strengthen the reliability of the results. Exploring the integration of MBCT with other therapeutic approaches and assessing its impact on additional psychological constructs, such as anxiety, self-compassion, or academic performance, could provide further insight into its benefits for adolescents.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

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