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# Comparing The Efficacy Of Mindfulness-Based Cognitive Therapy And Acceptance And Commitment-Based Therapy On Adolescent Rumination And Cognitive Avoidance In Kermanshah City

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***Abstract***

**Objective**: Adolescence is a period marked by changes in social structures and physical growth, which may lead to emotional and behavioral disturbances. This study aimed to determine the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment-based therapy on adolescent rumination and cognitive avoidance in Kermanshah city with a two-month follow-up.
**Method**: This study was conducted in 1401 on 45 adolescents in Kermanshah city. A cluster sampling method was used to select and randomly assign participants to three intervention groups: Group 1 (15 participants received mindfulness-based cognitive therapy), Group 2 (15 participants received acceptance and commitment-based therapy), and a control group (15 participants). The Response Style Questionnaire (RRS) and Cognitive Avoidance Questionnaire were used, and the data were analyzed using SPSS version 26.
**Findings**: Acceptance and commitment-based therapy was significantly more effective in reducing cognitive avoidance ($p<0.05$) than mindfulness-based cognitive therapy, and its effects persisted during the follow-up period ($p<0.05$). In healthcare settings, both mindfulness-based cognitive therapy and acceptance and commitment-based therapy can be utilized as sustainable interventions to reduce rumination and cognitive avoidance in adolescents.

***Keywords: Mindfulness-Based Cognitive Therapy, Acceptance and Commitment-Based Therapy, Rumination, Cognitive Avoidance, Adolescents.***



## Introduction

Adolescence can be considered one of the most turbulent and critical periods of life, marked by behavioral problems and challenges that often begin in childhood but peak during the adolescent and young adult years (Alizadeh, Raheb, Mirzaei, & Hosseinzadeh, 2020). Due to the social structural changes and physical growth that occur during this period, there can be discrepancies between social maturity and physiological maturity, leading to the emergence of emotional and psychological issues or anti-social behaviors (Matous, 2019; Delcea

C, et al., 2023). Among these, cognitive rumination stands out as one of the most common emotional problems affecting various age groups, especially adolescents (Kerami, Sharifi, Nikkhah, & Ghazanfari, 2018; Peng et al., 2022).

Research indicates that rumination occurs continuously and is associated with depression and other negative emotional disorders (Nolen-Hoeksema, Blair, & Sonja, 2008; Stortenbeker et al., 2022). Cognitive rumination involves repetitive and focused thinking on the causes and consequences, preventing problem-solving and leading to an increase in negative thoughts (Cheung, Gilbert, & Irons, 2014). Many theories suggest that cognitive rumination is a maladaptive emotion regulation strategy, especially in individuals prone to cognitive rumination, as they believe it helps in problem-solving, analyzing their problems, resolving discrepancies between current and ideal states, and processing information related to stressful or traumatic events (Rezaei & Rezakhani, 2018; Bululoi AS, et al., 2023).

One of the issues that adolescents often grapple with, which receives less attention, is cognitive avoidance (Pourabdel, Sobhi Qaramalki, & Abbasi, 2014). Cognitive avoidance encompasses various cognitive strategies through which individuals attempt to change their thoughts (Rad D, et al., 2023). Cognitive strategies include thought substitution, thought distraction, avoiding threatening stimuli, hypervigilance, and converting imagery to thought, all of which have been proposed by various researchers (Bögels & Mansell, 2004). The use of cognitive avoidance coping strategies can result in the formation of an incomplete cycle, leading to increased anxiety because problems remain unresolved. As anxiety intensifies, it hampers the avoidance coping mechanism and reinforces negative and distressing thoughts (Weiner & Carton, 2012). Additionally, using cognitive avoidance strategies may generate irrational thoughts, potentially leading to avoidance behavior and neglectful actions (Basak Nejad, Moini, & Mehrabizadeh, 2011).

One of the therapeutic approaches that has shown effectiveness in treating anxiety, depression (Grunberg et al., 2021; LoriHilt & Swords, 2021; Shallcross et al., 2022; Spek, Van Ham, & Nyklíček, 2013; Talebizadeh, Shahmir, & Jafar Fard, 2011; Xingmin et al., 2019), and reducing stress (Conner & White, 2014) is Mindfulness-Based Cognitive Therapy (MBCT). The term "Mindfulness-Based Cognitive Therapy" is used for therapeutic approaches that employ techniques to shape behavior and methods to change non-conforming beliefs (Carroll & Onken, 2009). Maher and Cordova (2019) reported that mindfulness-based teachings have been effective in improving job satisfaction, enhancing family performance, increasing happiness and marital satisfaction, and preventing psychological and social harms, such as anxiety, depression, and substance addiction, by enhancing adaptive coping strategies and emotionally regulated strategies.

In Mindfulness-Based Cognitive Therapy (MBCT), three main objectives are considered: a) attention regulation, b) the development of metacognitive awareness, and c) defusion and increased acceptance of mental states and contents (Baer, 2003; Didonna, 2009). In essence, the goal of MBCT is to enable patients to focus solely on their thoughts as pure mental phenomena, to perceive them as examinable mental events, to distinguish negative mental events from the reactions they often trigger, and ultimately to transform their meaning (Segal, Teasdale, & Williams, 2002).

Various studies have demonstrated that MBCT has been effective in reducing rumination (Ghadampour, Rad Mehr, & Yousefzand, 2017; Bergmadi, Asadi, & Aghili Kardamahle, 2013; LoriHilt & Swords, 2021; Moghtader, 2015), depression, and suicidal ideation (Forkmann, Brakemeier, Teismann, Schramm, & Michalak, 2016), as well as behaviors that pose health risks (Liu et al., 2020).

Another effective therapeutic approach is Acceptance and Commitment Therapy (ACT), which has proven effective in treating anxiety, depression (Hallis et al., 2016; Hor, Aghaei, Abedi, & Attari, 2012), experiential avoidance, and cognitive avoidance. ACT consists of two key processes: acceptance, which involves a willingness to experience pain or other distressing events without trying to control them, and commitment to action, which aligns with personal meaningful goals rather than avoiding unwanted experiences (Fang & Ding, 2020). The aim of acceptance and commitment training is to promote psychological flexibility, allowing individuals to choose their actions and solutions, focusing on those most suitable to their unique needs, rather than solely on actions that avoid thoughts, feelings, and distressing urges (Han, Liu, Su, & Qiu, 2019). In this approach, individuals are first taught to increase acceptance of their psychological experiences, rendering ineffective actions and avoidance behaviors futile in response to these experiences. They are encouraged to accept these experiences without any internal or external reactions. In the next stage, individuals learn to cultivate mindfulness in all aspects of life, independently act based on personal values, and ultimately motivate themselves for committed action (Ong et al., 2019).

Various studies have shown that Acceptance and Commitment Therapy (ACT) has been effective in treating depression (Hallis et al., 2016; Hor, Aghaei, Abedi, & Attari, 2012), experiential avoidance (Alfoneh et al., 2019; Narimani & Taheri Fard, 2018), and cognitive avoidance (Haji Eqharari, Asadi, Jaosi, & T., 2017; Karimi et al., 2019).

Given the importance of factors affecting the mental health of adolescents and the increasing prevalence of such issues among this age group, addressing psychological problems, preventing psychological harm, and promoting the mental health of adolescents have become essential. Adolescents who seek counseling and psychological services due to psychological problems need to acquire the necessary skills to reduce rumination and cognitive avoidance among adolescents. There is also a lack of clinical and controlled research related to this topic. Therefore, the present study aimed to compare the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) and Acceptance and Commitment Therapy (ACT) on reducing rumination and cognitive avoidance among adolescents in Kermanshah, Iran.

## Materials and Methods

The present research was a clinical trial study. The study population consisted of all adolescents in Kermanshah city during the spring of 2022. To determine the sample size, according to the Stevens table (Bahrami et al., 2018), for the purpose of comparing three groups and with an 80% test power, a medium effect size, and a 0.05 probability of error, considering the potential dropout rate for each group, 15 participants were selected (15 participants for each of the experimental and control groups, with each group consisting of an equal number of adolescents). These participants were selected through multi-stage cluster sampling after meeting the study's inclusion criteria. This selection was made by randomly choosing four high schools from among the second-grade high schools in Kermanshah. From each selected school, two classes were chosen, and from each class, 20 participants were selected. Among these, 45 participants who scored more than one standard deviation above the mean were chosen as the research sample.

Inclusion criteria for participation in the study included adolescents aged 12-18 years, having no specific physical or psychological problems, and providing consent to participate in the research, along with obtaining written consent from parents. The exclusion criteria from the study included a lack of willingness to cooperate in the study process, the onset of an acute physical or psychological illness during the study, missing more than one session of all research sessions, and an inability to perform tasks outside the sessions.

The first intervention group received an 8-session, 90-minute each, Mindfulness-Based Cognitive Therapy (MBCT), while the second intervention group received an 8-session, 90-minute each, Acceptance and Commitment Therapy (ACT). The control group remained on the waiting list. The MBCT sessions were conducted based on the method of Segal and colleagues (Segal et al., 2002), and the ACT sessions were conducted based on the Hayes method (Hayes, 2004).

**Table 1.** Content of sessions in mindfulness-based cognitive therapy (Segal et al., 2002)

| | |
|---|---|
| **First session** | **Explaining the rules and goals of group sessions** |
| | Mindful raisin eating (a meditation where participants briefly examine the sensory properties - visual, olfactory, taste, and tactile - of a raisin). Homework: body scan practice for 6 days. |
| | Body scan, homework: mindful doing of one daily routine activity each day (washing, eating, brushing teeth, etc.). |
| **second session** | Thoughts and feelings exercise, homework: logging pleasant and satisfying events |
| **third session** | Sitting meditation; homework: 3-minute breathing space practice three times daily. |
| | Mindful walking; homework: mindful walking. |
| | 3-minute breathing space; homework: logging pleasant and satisfying events. |
| **fourth Session** | Seeing/hearing meditation; homework: sitting meditation |
| | Sitting meditation; homework: 3-minute breathing space not only three times daily but also whenever stressed or experiencing unpleasant emotions. |
| **fifth session** | Sitting meditation; homework: guided sitting meditation |
| **sixth session** | Sitting visualization meditation; homework: shorter guided meditation at least 40 minutes daily. |
| | Uncertain scenarios; homework: 3-minute breathing space not only three times daily but also whenever stressed or experiencing unpleasant emotions. |
| **seventh session** | Relating mood and activity; homework: 3-minute breathing space not only three times daily but also whenever stressed or experiencing unpleasant emotions. |

| | |
|---|---|
| | Discussing signs of illness; homework |
| **eighth session** | Body scan, homework, reflection, feedback |

**Table 2.** Session topics in acceptance and commitment therapy

| | |
|---|---|
| **First session** | **Establishing therapeutic relationship, making treatment contract, psychoeducation** |
| **second session** | Discussing experiences and evaluating them, using effectiveness as evaluation criterion, generating creative hopelessness |
| **third session** | Explaining control as the problem, introducing willingness as an alternative response, engaging in valued actions |
| **fourth Session** | Applying cognitive defusion techniques, intervening in problematic linguistic chains, weakening fusion with thoughts and feelings |
| **fifth session** | Observing self as context, weakening conceptualized self and introducing self as observer, demonstrating separation of self, inner experiences, and behavior |
| **sixth session** | Using mindfulness skills, modeling exiting the mind, teaching to observe inner experiences as a process |
| **seventh session** | Introducing values, presenting dangers of focusing on outcomes, clarifying life's practical values |
| **eighth session** | Understanding the nature of willingness and commitment, specifying patterns of valued action |

In this study, the Ruminative Response Scale (RRS) and Cognitive Avoidance Questionnaire were completed at three time points: pretest, posttest, and follow-up.

*Ruminative Response Scale (RRS)*

The Ruminative Response Scale (RRS) is a tool for measuring rumination. It was derived from the Response Styles Questionnaire (RSQ) developed by Nolen-Hoeksema and Morrow (1991). Rumination-related responses are assessed with 22 items from this scale, referred to as the "Ruminative Response Scale (RRS)". Participants are asked to rate how much they engage in ruminative thinking in response to sad mood on a 4-point Likert scale (1=almost never to 4=almost always). Scores range from 22 to 88. Nolen-Hoeksema and Morrow's evaluation of the internal consistency of this scale was good (0.89). Based on empirical evidence, the rumination responses scale has high internal consistency. Cronbach's alpha coefficient ranges from 0.88 to 0.92. Multiple studies show test-retest reliability for the RRS is 0.76 (Luminet, 2004). The predictive validity of the RRS has been assessed in many studies. As mentioned earlier, results from numerous studies show that the RRS can predict levels of depression at follow-up in clinical and nonclinical samples when controlling for variables like baseline depression or stressors. Furthermore, research shows individuals' vulnerability to depression can be identified with this scale. It has also been reported that the scale can predict a clinical episode of depression (Bagherinejad, Salehi Federdi, & Tabatabai, 2011). This questionnaire was translated by Fatthi (2005) and its reliability coefficients were calculated by Lotfinia et al. (2007) by administering it to 54 students with a 3-week interval, reporting 0.82 (Lotfinia et al., 2007; cited in Safarzadeh, 2013).

*Cognitive Avoidance Questionnaire*

The Cognitive Avoidance Questionnaire, consisting of 25 questions, was first created and validated by Sexton and Dugas (2009). Participants are asked to respond to the questions on a 5-point Likert scale, ranging from 1 (never) to 5 (always) (Basak Nejad et al., 2011). The internal consistency of this scale has been found to be excellent, with a Cronbach's alpha of 0.91 for total cognitive avoidance score, and also high internal consistency for its sub-scales, including thought suppression (0.90), thought substitution (0.71), distraction (0.89), avoidance of threatening stimuli (0.90), and transformation of mental images into verbal thoughts (0.84) (Basak Nejad et al., 2011). The results indicate that this questionnaire possesses favorable psychometric properties. Its reliability, measured by Cronbach's alpha, is 0.75 (Abbasi, Baghian Koleh Merz, Ghasemi Jobneh, & Dargahi, 2014). In the factor analysis of the questionnaire data in research, standard coefficients for the thought suppression sub-scale range from 0.62 to 0.78, for the thought substitution sub-scale from 0.57 to 0.70, for the distraction sub-scale from 0.58 to 0.75, for the transformation of mental images into verbal thoughts sub-scale from 0.56 to 0.76, and for the change from mental images to verbal thoughts sub-scale, the variable is (Mahmoudzadeh & Mohammadkhani, 2015).

The data in this research are divided into two sections: descriptive data (demographic information) and inferential data (mean and standard deviation). In addition, analysis of variance was used to examine the

homogeneity of the groups. Mixed analysis of variance was employed to analyze the data using SPSS 26 software. It is worth noting that before each analysis, the assumptions of mixed analysis of variance were examined and reported, including the Shapiro-Wilk test and Levene's test.

**Findings**

In Table 3, the mean and standard deviation of rumination and cognitive avoidance are presented by stage and group.

**Table 3.** Descriptive indicators of rumination and cognitive avoidance by group and test stage

| Variable | | Mindfulness-based cognitive therapy (n=15) | | Acceptance and commitment therapy (n=15) | | Control group (n=15) | |
|---|---|---|---|---|---|---|---|
| | | **Mean** | **Standard deviation** | **Mean** | **Standard deviation** | **Mean** | Standard deviation |
| Rumination | Pretest | 57.93 | 14.19 | 62.53 | 10.76 | 59.60 | **13.49** |
| | Posttest | 39.73 | 13.38 | 39.20 | 14.33 | 60.40 | **13.52** |
| | Follow-up | 38.73 | 12.41 | 38.13 | 14.48 | 60.66 | **13.51** |
| Cognitive avoidance | Pretest | 92.66 | 40.7 | 90.33 | 14.22 | 88.73 | **10.40** |
| | Posttest | 71.53 | 10.47 | 59.13 | 8.97 | 89.13 | **9.51** |
| | Follow-up | 71.40 | 10.60 | 52 | 8.63 | 89.53 | **9.58** |

As can be seen in Table 3, the scores of the experimental group subjects in rumination and cognitive avoidance have changed in the post-test and follow-up stages. In order to find out whether these changes made in the post-test and follow-up are statistically significant or not, a mixed between-within subjects' analysis of variance was used. To use this test, several initial assumptions must be observed, including the normal distribution of scores and the homogeneity of variances, which were first examined. To examine the normality, the Shapiro-Wilk test was used. Since the Shapiro-Wilk test values were not significant at any stage ($p>0.05$), it can be concluded that the score distribution is normal. Also, Levene's test was used to examine the homogeneity of variances. According to the results, the Levene's test statistic was not statistically significant at the three evaluation stages ($p>0.05$), and thus the assumption of equal variances was confirmed. The assumption of homogeneity of variance-covariance matrices (Box's M test) was questioned by the research data; Therefore, this assumption has also been observed ($p>0.05$). In addition, outlier data exploration was performed using SPSS, which showed no outliers. Given that the assumptions for using mixed between-within subjects' analysis of variance have been met, this statistical test can be used.

The results of the statistical test for the sphericity test, which is one of the assumptions of the mixed between-within subjects' analysis of variance, indicate that the significance level is less than 0.05 and the sphericity assumption does not hold. Since the results of the Mauchly's test are significant, the Greenhouse-Geisser test is reported to determine the within-subject effects on rumination and cognitive avoidance, the results of which are shown in Table 4.

**Table 4.** Results of within-group effects for rumination and cognitive avoidance variables

| | effect | sum of squares | df | mean square | F | Significance level | Effect size |
|---|---|---|---|---|---|---|---|
| Rumination | Sphericity assumed | 474.3432 | 4 | 119.858 | 819.49 | 001.0 | 703.0 |
| | Greenhouse-Geisser | 474.3432 | 213.2 | 194.1551 | 819.49 | 001.0 | 703.0 |
| Cognitive avoidance | Sphericity assumed | 074.6632 | 4 | 019.1658 | 365.54 | 001.0 | 721.0 |
| | Greenhouse-Geisser | 074.6632 | 116.2 | | 365.54 | 001.0 | 721.0 |

As the results shown in Table 5 indicate, in the multivariate analysis of variance, the time effect in the Greenhouse-Geisser test (F=819.49, P<0.001) is significant, which means there is a significant difference between the rumination and cognitive avoidance scores of the subjects in the pre-test, post-test and follow-up stages.

**Table 5.** Results of between-group effects for rumination and cognitive avoidance variables

| | Source | sum of squares | df | mean square | F | Significance level | Effect size |
|---|---|---|---|---|---|---|---|
| Rumination | group | 6060.326 | 2 | 3030.163 | 5.970 | 0.005 | 0.221 |
| | error | 21318.222 | 42 | 507.577 | - | - | - |
| Cognitive avoidance | group | 10872.548 | 2 | 5436.274 | 21.979 | 0.001 | 0.511 |
| | error | 10388.311 | 42 | 247.341 | - | - | - |

As the results shown in Table 5 indicate, there is a significant difference between the control and experimental groups (P<0.05). In other words, "mindfulness-based cognitive therapy and acceptance and commitment therapy have a significant effect on rumination and cognitive avoidance."
Furthermore, the comparison of the adjusted means of the test stages (pre-test, post-test and follow-up) in rumination and cognitive avoidance is presented in Table 6. Also, the Bonferroni post hoc test was used to determine at which stage rumination and cognitive avoidance differ significantly, comparing the means two by two.

**Table 6.** Results of the Bonferroni post hoc test for rumination and cognitive avoidance at pre-test, post-test and follow-up stages

| Variable | Differences Between Stages | Difference of means | Significance level |
|---|---|---|---|
| Rumination | Pretest - Posttest (Effect of intervention) | *13.578 | 0.001 |
| | Pretest - Follow-up (Effect of time) | * 14.178 | 0.001 |
| | Posttest - Follow-up (Stability effect of intervention) | 0.600 | 0.128 |
| Cognitive avoidance | Pretest - Posttest (Effect of intervention) | * 17.311 | 0.001 |
| | Pretest - Follow-up (Effect of time) | *19.600 | 0.001 |
| | Posttest - Follow-up (Stability effect of intervention) | * 2.289 | 0.001 |

Table 6 shows that mindfulness-based cognitive therapy and acceptance and commitment therapy have a significant effect on rumination and cognitive avoidance in both the post-test and follow-up stages.
As can be seen from the results in Table 6, the mean pre-test compared to the post-test and the mean pre-test compared to the follow-up have a greater and more significant difference than the mean post-test and follow-up. This indicates that mindfulness-based cognitive therapy and acceptance and commitment therapy had an effect on rumination and cognitive avoidance at the post-test stage and also maintained this effect at the follow-up stage. Since the obtained results did not specify which treatment method the effect created in the post-test and follow-up stages belonged to, the Bonferroni post hoc test was used to examine the difference in effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on rumination and cognitive avoidance, to determine which treatment method was more effective. The results are presented in Table 7.

**Table 7.** Pairwise comparison with Bonferroni post hoc test to determine the effect of the more effective method on rumination and cognitive avoidance

| Variable | Differences Between Stages | Difference of means | Significance |
|---|---|---|---|
| Rumination | Mindfulness-based cognitive therapy vs. acceptance and commitment therapy | -1.155 | 1.000 |
| | Mindfulness-based cognitive therapy vs. control group | *-14.75 | 0.010 |
| | Acceptance and commitment therapy vs. control group | *-13.60 | 0.020 |
| Cognitive avoidance | Mindfulness-based cognitive therapy vs. acceptance and commitment therapy | *11.378 | 0.004 |
| | Mindfulness-based cognitive therapy vs. control group | *-10.600 | 0.008 |
| | Acceptance and commitment therapy vs. control group | *-21.978 | 0.001 |

Based on Table 7, it can be concluded that mindfulness-based cognitive therapy and acceptance and commitment therapy compared to the control group led to improved scores on rumination and cognitive avoidance ($P<0.05$). There is no statistically significant difference between the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on rumination ($P>0.05$). There is a statistically significant difference between the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on cognitive avoidance ($P<0.05$). Acceptance and commitment therapy was more effective than mindfulness-based cognitive therapy on cognitive avoidance.

## Discussion and Conclusion

The present study aimed to compare the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on cognitive rumination and cognitive avoidance in adolescents in Kermanshah city. The results showed that both mindfulness-based cognitive therapy and acceptance and commitment therapy led to improvements in cognitive rumination compared to the control group ($p < 0.05$). There was no statistically significant difference in the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on cognitive rumination. These effects were sustained in the follow-up phase. This finding is consistent with the research of Damohri and colleagues (2018), Ghadampour and colleagues (2017), Moghtader (2015), Bergmadi and colleagues (2013), Hor and colleagues (2012), LoriHilt and Swords (2021), Forkmann and colleagues (2016), and Hallis and colleagues (2016).

This finding can be presented as follows: individuals with cognitive rumination perceive their problem as unsolvable and intolerable and, based on this, make no effort to achieve more desirable and effective solutions. Ultimately, their problem-solving strategies are impaired, and they fail in resolving their problems. Based on the research findings, it can be concluded that using cognitive therapy techniques based on mindfulness, such as teaching cognitive flexibility, improving attention, mindfulness, cognitive enrichment, cessation of cognitive rumination, modifying positive and negative beliefs about cognitive rumination, and challenging negative beliefs related to emotions can reduce cognitive rumination.

In explaining the effectiveness of acceptance and commitment therapy on cognitive rumination, it can be said that identifying an alternative to control, which is willingness and acceptance of influential processes in this therapy, allows individuals to accept their unpleasant internal experiences without making any effort to control them. This leads to a reduction in the perceived threatening nature of these internal experiences and cognitive rumination and has less impact on the individual's life. In other words, it creates a focus on internal events that are observed by the individual, rather than perceiving these events as a part of themselves. This approach, which participants have used to solve the problems and challenges in their inner world, has become problematic, and after abandoning these solutions themselves and using warning monitor metaphors and the black box, we show that the more they try to control their inner world, the more the persistence of thoughts, memories, feelings, desires, and bodily sensations in their minds increases, and by taking avoidance actions in relation to the inner world, they become more persistent. The mind's definition from the perspective of ACT in another phase suggests that a healthy mind is attributed to a mind that creates various thoughts, and participants experience greater progress with the acquisition of new awareness, and cognitive rumination has less impact on their functioning.

Furthermore, the results showed that both mindfulness-based cognitive therapy and acceptance and commitment therapy led to improvements in cognitive avoidance compared to the control group. There is a statistically significant difference in the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on cognitive avoidance. Acceptance and commitment therapy was more effective than mindfulness-based cognitive therapy in reducing cognitive avoidance. These effects were sustained in the

follow-up phase. This finding is consistent with the research of Alfoneh and colleagues (2019), Karimi and colleagues (2019), Narimani and Taheri Fard (2018), Haji Eqharari and colleagues (2017), Ghadampour and colleagues (2017), and Li and colleagues (2021).

In explaining the above findings, it can be argued that mindfulness-based cognitive therapy assists the patient by making cognitive patterns more accessible at the appropriate time, thus neutralizing emotional and physical sensations before they expand and develop (Helmes & Ward, 2017). Based on the results obtained from the present research, it can be suggested that deliberate and mindful attention to the present moment, being exposed to unpleasant emotions and thoughts, and not avoiding these emotions, leads to cognitive changes and ultimately results in the improvement of psychological symptoms and their reduction. This is likely one of the characteristics of post-mindfulness training therapy: a shift from avoidance to acceptance of emotions and thoughts in coping strategies. Teaching and training in observing and monitoring disruptive thoughts and emotions without judgment and accepting them, as opposed to avoiding them by mentally engaging with them, leads to increased awareness of the experience and the emergence of conscious and adaptive responses. This, in turn, results in better control of unpleasant thoughts or emotions in adolescents. Consequently, the continuation of mindfulness exercises leads to behavioral changes for better self-care.

Furthermore, in explaining the findings of the current research, it can be noted that individuals, in the context of acceptance and commitment therapy, tend to perceive their internal emotions, feelings, and thoughts as distressing. As a result, they try to replace or avoid these thoughts with other thoughts. The primary goal of this therapy is to cultivate psychological flexibility. Psychological flexibility refers to the ability to choose actions that are more suitable among various options and to perform actions that are not just for avoidance with vigilance from distressing thoughts, emotions, memories, and stimuli (Levin, Hildebrandt, Lillis, & Hayes, 2012). Identifying an alternative to control, which is willingness and acceptance in the face of avoidance, is considered one of the therapeutic processes in acceptance and commitment therapy. The willingness and acceptance component allows individuals to accept their unpleasant inner experiences without any effort to push them away. This action leads to a reduced perception of the threatening nature of these unpleasant experiences and less engagement in cognitive rumination. Another characteristic of this therapy is the emergence of cognitive defusion and the application of mindfulness techniques, which lead participants to weaken their attachment to thoughts and emotions. They learn to release themselves from the grip of cognitive fusion and the rules of language that have created their problems. This empowers them to address their struggles, conflicts, and the transformation of images into thoughts effectively.

The limitations of this study include the low external validity and generalizability of the results due to the controlled research conditions and the use of adolescents as the study population. Therefore, it is recommended that future research should involve more controlled experimental studies on clinical samples. Additionally, it is suggested that instructional DVDs of therapy sessions, supported by relevant organizations financially, be prepared by researchers and therapists and delivered to teachers and their families as educational packages. This way, the therapy can be applied practically so that counselors, teachers, families with adolescent children, and other individuals facing issues with cognitive rumination and cognitive avoidance can make the best use of these studies and therapeutic methods.

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