

## **The Effectiveness of Group Counseling of Mindfulness-Based Cognitive Therapy on Internet Addiction and Cognitive Emotion Regulation in High School Students**

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### **Abstract**

The present study aimed to explore the effectiveness of group counseling of mindfulness-based cognitive therapy on internet addiction and cognitive emotion regulation in high school students. The research design was quasi-experimental with pretest-posttest and a two-month follow-up with a control group. The population consisted of all male high school students in Takestan in the academic year 2020-2021. The sample comprised 30 high school male students selected through convenience sampling method and randomly assigned to experimental ( $n = 15$ ) and control ( $n = 15$ ) groups. The experimental group then received 10 sessions of 90-minute group counseling of mindfulness-based cognitive therapy, and the control group did not receive any intervention. Data were gathered by Young's Internet Addiction Questionnaire (IAQ) and the Cognitive Emotion Regulation Questionnaire (CERQ). The researcher also used multivariate analysis of covariance, repeated measures, LSD post hoc test and SPSS-26 software for data analysis. The results of comparing the experimental and control groups indicated that group counseling of mindfulness-based cognitive therapy had a significant effect on Internet addiction in high school students ( $P < 0.01$ ). Furthermore, the results showed that Group counseling of mindfulness-based cognitive therapy had a significant effect on cognitive emotion regulation ( $P < 0.01$ ). The findings indicated that group counseling of mindfulness-based cognitive therapy is an effective intervention in reducing Internet addiction, enhancing positive cognitive emotion regulation strategies as well as reducing negative cognitive emotion regulation strategies in high school students.

**Keywords:** Cognitive emotion regulation, internet addiction, mindfulness-based cognitive therapy

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## Introduction

Students constitute the fundamental element of the country's educational system and paying attention to this sector of society in terms of education and training will lead to the increasing fertility and prosperity of the educational system in the society (Sobhi Gharamaleki et al., 2014). Recently, as the Internet has turned into an integral part of the daily lives of adolescents and students, both in the field of education and entertainment, their widespread use has led to Internet addiction which is one of the recent crises among students and adolescents (Lou et al., 2017).

Internet addiction is indeed an impulse control disorder and maladaptive pattern of Internet use that leads to significant clinical disorders and psychological, academic and occupational problems in people's lives, the prevalence of which in the group aged 15 - 19 is higher compared to other age groups (Throuvala et al., 2019). The American Psychiatric Association (APA) defines Internet addiction as a pattern of Internet use resulting in dysfunction or internal distress over a two-month period, and provides seven criteria for diagnosing it (at least three criteria over two months); Tolerance, withdrawal symptoms, Internet use time longer than one initially intends, persistent tendency to control behavior, spending significant time on Internet-related issues, reduction of social, occupational, and recreational activities due to Internet use, and continued use despite being aware of its negative effects (Ferrara et al., 2017).

Cognitive emotion regulation is one of the significant and influential dimensions on students' educational dimension. Emotion regulation reveals the balancing process of one or more dimensions of emotional responses (Narimani et al., 2014). As a major socio-emotional skill, the ability to regulate emotion enables flexibility in emotionally stimulating situations (Fu et al., 2020). Cognitive emotion regulation has a significant role in regulating or controlling emotions and emphasizes on managing emotions when encountering stressful or threatening situations (Garnefski & Kraaij, 2006).

Cognitive emotion regulation highlights the cognitive process that manipulates and alters the information and thoughts that play a role in evoking emotion. This process is associated with a change in the emotions experienced that can be positive or negative depending on the strategy employed (Andres et al., 2016). Cognitive emotion regulation strategies generally fall into two categories of positive strategies (positive refocusing, refocusing on planning, positive reappraisal, acceptance, open-mindedness) and negative strategies (self-blame, rumination, catastrophizing, and blaming others) (Mihalca & Tarnavska, 2013).

Since the beginning of the Covid 19 epidemic, problems with emotion regulation (Weissman et al., 2021) as well as Internet addiction (Siste et al., 2021) has also become more prevalent, especially among adolescents. In this regard, various interventions have been designed to reduce these problems; One of the short-term treatment models that can be used to work with the challenges of adolescents and students is mindfulness-based cognitive therapy (Ahmad et al., 2020).

Mindfulness-based cognitive therapy is based on the Kabat-zinn stress reduction model and the principles of cognitive therapy were then added to it (Segal et al., 2004). This type of cognitive therapy comprises various meditations, body exercises, and several cognitive exercises that show the relationship between mood, thoughts, feelings, and bodily sensitivities. All of these exercises provide a kind of experience of physical and peripheral situations in the present moment (Sipe & Eisendrath, 2012). Essentially, mindfulness-based cognitive therapy teaches individuals how to break the habitual skills of the central system out of biases and lay the groundwork for change by directing information processing resources toward attention-neutral goals, namely, breathing or sense of the moment (Williams & Kaiken, 2012). Therefore, re-employing attention to this method makes defective processing cycles less accessible and enhances the ability of individuals to observe themselves (Evans, 2016).

In the meanwhile, based on the research of Ahmadi et al. (2021), Shamli et al. (2018), Lan et al. (2018), as well as Regan et al. (2020), mindfulness-based cognitive therapy decreases students' Internet addiction. Research literature also indicated that mindfulness-based cognitive therapy causes cognitive emotion regulation in students (Mohaddes et al., 2019). Despite the research, most of the research did not have a follow-up stage; In this regard, there are doubts about the effectiveness of this intervention in the long run. Also, in previous research, special attention has not been paid to the variety of gender and educational levels, and there is a research gap in the research that exclusively examines the high school students. In addition, due to the epidemic of coronavirus in today's societies and educational activities in cyberspace, the use of the Internet has increased (Lane, 2020), which increases the likelihood of Internet addiction. Moreover, due to the significant relationship between Internet addiction and emotion regulation during the epidemic (Moniri, Pahlavannejad & Lavasani, 2022), it is necessary to conduct research that examines short-term interventions. consequently, the present study aimed to answer the question of whether group counseling based on mindfulness-based

cognitive therapy is effective on Internet addiction and cognitive emotion regulation in high school students.

## Method

The research adopted a quantitative method using a quasi-experimental design with pretest –posttest, follow-up and a control group.

## Participants

The statistical population comprised all male high school students in Takestan studying in the second semester of the Academic Year 2020-2021. Using convenience sampling method, 30 students were selected and randomly assigned to experimental (N = 15) and control (N = 15) groups. The students were in three educational levels (tenth, eleventh and twelfth grades) and the average age in the experimental group (including 4 tenth grade, 6 eleventh grade and 5 twelfth grade students) was 17.68 while the average age in the control group (consisting 5 tenth grade, 6 eleventh grade and 4 twelfth grade students) was 16.72. The inclusion criteria were: 1) conscious and voluntary consent to participate in the study; 2) scoring above 80 in the Internet Addiction Questionnaire (IAQ); 3) lacking any serious psychiatric disorder at the discretion of the researcher; 4) lacking any physical disability and psychiatric medication use; and 5) lack of simultaneous participation in other educational interventions. The exclusion criteria included: 1) absence for more than two sessions; 2) failing to do the homework; and 3) unwillingness to participate the sessions.

## Instruments

### Instruments

**A) Internet Addiction Questionnaire (IAQ):** The Internet Addiction Questionnaire was designed in 1996 to assess people's dependence on the Internet and consists of 20 items which categorize people into one of three groups of normal Internet users, users who have encountered problems due to excessive use of the Internet and users addicted to the Internet (Young, 1996). The answers to the questionnaire are designed and scored based on a five-point Likert scale (rarely: 1, sometimes: 2, often: 3, more often: 4, always: 5). A score of 20 - 49 indicates no internet addiction, a score of 50 - 79 indicates internet addiction, and a score of 80 - 100 indicates internet addiction. In the present study, a score above 80 was considered as the cut-off point. Young (1996) reported that the internal validity of this questionnaire was 0.92 and using Cronbach's alpha method its reliability was obtained higher than 0.80. In

Iran, Alavi et al. (2010) reported the reliability of the questionnaire 0.82 using the retest method and reported internal consistency and scale halving as 0.88 and 0.72, respectively. In the present study, the reliability of the questionnaire obtained 0.88 using Cronbach's alpha method.

**B) Cognitive Emotion Regulation Questionnaire (CERQ):** The Cognitive Emotion Regulation Questionnaire is a multidimensional questionnaire developed by Garnefski, et al. (2006) which was used to identify individuals' cognitive coping strategies after experiencing negative events or situations. This questionnaire is a self-report instrument with 36 items and consists of 9 subscales. The above subscales assess the cognitive strategy of self-blame, acceptance, rumination, positive refocusing, refocusing on planning, positive re-appraisal, open-mindedness, catastrophizing, and blaming others. The internal consistency of the whole scale with Cronbach's alpha method was reported as 0.92 and the alpha for subscales ranged 0.77 - 0.87. The retest coefficient of the whole scale after 3 to 4 weeks was 0.77 which indicated appropriate reliability of the test. Exploratory factor analysis was used to determine the validity of this scale. Based on the results, alike the original version, the Persian translation of the Cognitive Emotion Regulation Scale yielded 9 factors that explained 74% of the total variance, and all path coefficients were higher than 0.40, suggesting the appropriate construct validity of the test (Hassani, 2010).

## Procedure

As mentioned in the previous section, in this study, a quasi-experimental research method with a pretest-posttest design with a control group and two-month follow-up was used. From the statistical population of the study, 30 students of Takestan city were selected as the research sample using Morgan table and available sampling. Of these, 15 were randomly assigned to the experimental group (mindfulness-based cognitive therapy) and 15 to the control group. Both groups answered the questionnaires in the pre-test stage, after which the experimental group were treated with ten 90-minute sessions, once a week of mindfulness-based cognitive therapy group counseling, based on the Practical Handbook of Mindfulness skills for the children and adolescents (Bordick, 2017, trans. Mansha'ei et al., 2017), but control group received no treatment. Then both groups answered the questionnaires again in the post-test stage. After two months, the participants completed the mentioned questionnaires. A summary of group counseling sessions of mindfulness-based cognitive therapy is given in Table 1.

**Table 1.**

*Summary of Group Counseling Sessions of Mindfulness-Based Cognitive Therapy for Adolescents (Bordick, 2017, Mansha'ie et al., 2017).*

Session	Session Description
<b>Session 1</b>	Introducing the therapist and participants / administering pre-tests, defining Internet addiction and cognitive emotion regulation, introducing and defining mindfulness and explaining the reason for implementing this training course for participants, including mindfulness exercises in daily life, providing homework
<b>Session 2</b>	Gaining awareness towards conscious breathing, talking about participants' experience of mindfulness, practicing conscious breathing and abdominal breathing training, practicing disturbed mind versus calm mind with the help of a glitter bottle, providing homework.
<b>Session 3</b>	Teaching body scan, talking about participants' experience of mindfulness and repetitive mindful breathing, and providing homework
<b>Session 4</b>	Gaining awareness of the present time, repeating basic breathing exercises and awareness of the present time with the help of a glass of water, providing homework.
<b>Session 5</b>	Gaining awareness of the five main senses of the body, talking about participants' experiences of mindfulness exercises, and teaching mindfulness about the five senses, providing homework.
<b>Session 6</b>	Gaining awareness of emotions, doing preliminary relaxation breathing, practicing mindfulness exercises for emotions and writing notes about mindfulness towards emotions, using the scenarios of "useful inspector and useless inspector". Providing homework
<b>Session 7</b>	Reviewing breathing exercises, body scanning and mindfulness exercises for "flowing river meditation" thoughts, providing homework
<b>Session 8</b>	Gaining awareness of muscle function, repeating basic breathing exercises (relaxation breathing), playing the "channel change" game. Providing homework
<b>Session 9</b>	Gaining awareness of body movements, "breathing meditation", performing mindful movements, repeating the "useful and useless inspector" scenario
<b>Session 10</b>	Applying mindfulness in everyday life, reviewing mindfulness exercises, compassionate loving meditation

In this study, multivariate analysis of covariance, repeated measures and LSD post hoc test and SPSS-26 software were used to analyze the data.. In order to observe the ethical considerations of the research, voluntary attendance at group counseling sessions and obtaining full informed consent was considered to participate in the sessions. Also, participants were given a convincing scientific and practical answer about the implementation method, purpose of the research, possible losses, achievements, nature and duration of the research. In addition, all stages of the research were carried out under the supervision of the supervisor. Meetings were free, participants were not harmed, and in the event of harm, compensation was also given priority.

This research is derived from the a Ph.D. dissertation of psychology faculty of Kharazmi University with the code of ethics IR.KHU.REC.2021.018.

## Findings

Data were analyzed using SPSS-26 software using descriptive statistics (mean and standard deviation) and inferential findings (multivariate analysis of covariance and repeated measures analysis of variance). A total of 30 high school male students participated in the study, of which 15 were in the experimental group, including 4 tenth grade students, 6 eleventh grade students and 5 twelfth grade students with an average age 17.68 and the standard deviation was 0.84 and 15 people in the control group and included 5 people in the tenth grade, 6 people in the eleventh grade and 4 people in the twelfth grade with a mean age of 16.72 and a standard deviation of 0.79. Table 2 shows the mean and standard deviation of Internet addiction and cognitive emotion regulation of the experimental and control groups.

**Table 2.**

*Descriptive Findings of Internet Addiction and Cognitive Emotion Regulation Variables in Two Studied Groups (N = 15)*

Test		Pre-test		Post-test			Follow-up	
Variables	Group	Mean	SD	Mean	SD	weighted mean	Mean	SD
Internet addiction	Experimental	81.60	3.24	76.60	6.53	76.97	76.40	<b>6.67</b>
	Controls	81.20	3.72	83.20	6.06	82.82	-	-
Negative emotion regulation strategy	Experimental	33.20	3.94	27.53	4.15	27.28	27.60	<b>3.94</b>
	Controls	31.93	1.86	31.60	5.03	31.85	-	-
Positive emotion regulation strategy	Experimental	5.00	5.04	21.13	3.22	21.09	20.40	<b>3.13</b>
	Controls	5.20	3.93	6.00	3.02	6.04	-	-

As shown in Table 2, the mean and standard deviation of the Internet addiction variable in the experimental group in the pre-test stage were 81.60 and 3.24, in the post-test stage were 76.60 and 6.53, and in the follow-up stage, 76.40 and 6.67, respectively. The mean and standard deviation of Internet addiction variables in the control group in the pre-test stage were 81.20 and 3.72, and in the post-test stage were 83.20 and 6.06, respectively. The mean and deviation of the negative cognitive emotion regulation strategy variable in the experimental group were 33.20 and 3.94 in the pre-test stage, 27.53 and 4.15 in the post-test stage, and 27.60 and 3.94 in the follow-up stage, respectively. The mean and deviation of the negative cognitive emotion regulation strategy variable in the control group in the pre-test stage were 31.93 and 1.86, and in the post-test stage were 31.60 and 5.03, respectively. The mean and deviation of the positive cognitive emotion regulation strategy variable in the experimental group in the pre-test stage were 15.00 and 5.04, in the post-test stage were 21.13 and 3.22, and in the follow-up stage were 20.40 and 3.13, respectively. The mean and deviation of the positive cognitive emotion regulation strategy variable in the control group in the pre-test stage were 15.20 and 3.93, and in the post-test stage were 16.00 and 3.02, respectively.

Based on the results of Kalmogorov-Smirnov test, the distribution of both variables in both groups in three stages of measurement was normal. The homogeneity test results of the pre-test and post-test regression slope in the two variables of Internet addiction and cognitive emotion regulation in the two experimental and control groups indicated that the regression slope is identical in both groups. The results of Levene's test to investigate the homogeneity of variance of dependent variables in the two experimental and control groups indicated that the variance of Internet addiction and cognitive emotion regulation are equal in both groups. The results of the box test to investigate the covariance matrix of dependent variables between the experimental and control groups also showed that the covariance matrix of the dependent variables in the two groups is not equal ( $P < 0.05$ ). Consequently, Pillai's trace test was used to compare the linear composition of two dependent variables in the two groups. The results of multivariate analysis of covariance indicated that there was a significant difference between the experimental and control groups in the linear combination of Internet addiction and emotion regulation variables (Pillai's trace = 0.45,  $F_{(3,23)} = 6.35$ ,  $P < 0.01$ ).

**Table 3.**

*Results of Univariate Analysis of Covariance of Internet Addiction Variable and Cognitive Emotion Regulation*

The dependent variable	Source of changes	Total squares	Df	The average of the squares	F	Significance	Effect size	Test power
Internet addiction	Pre-test	134.16	1	134.16	4.46	0.045	0.15	0.53
	Group	243.78	1	243.78	8.10	0.009	0.24	0.82
	Error	751.64	25	34.44				
Negative emotion regulation strategy	Pre-test	63.48	1	63.48	3.23	0.084	0.11	0.41
	Group	149.14	1	149.14	7.58	0.011	0.23	0.85
	Error	491.49	25	19.66				
Positive emotion regulation strategy	Pre-test	0.35	1	0.35	0.03	0.86	0.001	0.05
	Group	181.59	1	181.59	17.26	0.001	0.41	0.98
	Error	262.92	25	10.52				

As seen in Table 4, the difference between the weighted mean of the two groups in the Internet addiction variable with ( $P < 0.01$ ,  $F = 8.10$ ) with the negative cognitive emotion regulation strategy with ( $P < 0.05$ ,  $F = 7.58$ ) and a positive cognitive emotion regulation strategy with ( $P < 0.01$ ,  $F = 17.26$ ) is significant. This finding means that there is a significant difference between the experimental and control groups

in the mean score of Internet addiction and cognitive emotion regulation. The weighted mean of the experimental group in both variables was lower than the weighted mean of the control group, therefore, mindfulness-based cognitive therapy is effective in reducing Internet addiction and cognitive emotion regulation of students.

**Table 4.**

*The Results of Repeated Measures Analysis of Variance to Investigate the Stability of the Effect of Group Counseling of Mindfulness-Based Cognitive Therapy, Awareness on Internet Addiction and Negative and Positive Strategies of Cognitive Emotion Regulation*

Source of changes	Source changes	of Total squares	Df	F	P	Effect size	Test power
Internet addiction	Stages	260.40	2	7.03	0.003	0.33	0.90
	Error	518.26	28				
Negative emotion regulation strategy	Stages	317.38	1.23	44.75	0.001	0.76	1.00
	Error	99.29	17.24				
Positive emotion regulation strategy	Stages	336.58	1.08	14.90	0.001	0.51	0.96
	Error	316.09	15.17				

As shown in Table 4, F ratio of analysis of variance with repeated measures in three stages shows that there is a significant difference between the three stages of measurement in Internet addiction with ( $P < 0.01$ ,  $F =$

7.03) and in negative cognitive emotion regulation strategies with ( $P < 0.01$ ,  $F = 44.75$ ) and in positive cognitive emotion regulation strategies with ( $P < 0.01$ ,  $F = 14.90$ ).

**Table 5.**

*Results of LSD Post Hoc Test of Counseling Group of Mindfulness-Based Cognitive Therapy in Internet Addiction And Cognitive Emotion Regulation*

The dependent variable	Group	Stage	Stage	Differences in means	standard error	Level p
Internet addiction	Experimental	Pre-test	Post-test	5.00	1.46	0.004
			Follow up	5.20	1.78	0.012
		Post-test	Follow up	0.20	1.44	0.89
Negative emotion regulation strategy	Experimental	Pre-test	Post-test	5.66	0.82	0.001
			Follow up	5.60	0.80	0.001
		Post-test	Follow up	-0.07	0.31	0.83
Positive emotion regulation strategy	Experimental	Pre-test	Post-test	-6.13	1.39	0.001
			Follow up	-5.40	1.55	0.004
		Post-test	Follow up	0.73	0.38	0.08

As seen in Table 5, there is a significant difference in the Internet addiction variable between the pre-test and post-test stages and between the pre-test and post-test stages with a mean difference of 5.00 and between the pre-test follow-up stages with a mean difference of 5.20 ( $P < 0.05$ ). Consequently, mindfulness-based cognitive therapy is effective in reducing students' Internet addiction. There is no significant difference between the

post-test and follow-up stages with a mean difference of 0.20 and a significance level of 0.89 ( $P > 0.05$ ). Therefore, the effect of mindfulness-based cognitive therapy in reducing students' Internet addiction is long-term. In the negative cognitive emotion regulation strategy variable of the mindfulness-based cognitive therapy group, there is a significant difference between the pre-test and post-test stages with a mean difference

of 5.66 and between the pre-test follow-up stages with a mean difference of 5.60 ( $P < 0.05$ ). As a result, mindfulness-based cognitive therapy is effective in reducing the students' use of negative cognitive emotion regulation strategy. There is no significant difference between post-test and follow-up stages with a mean difference of -0.31 and a significance level of 0.83 ( $P > 0.05$ ), therefore, the effect of mindfulness-based cognitive therapy in reducing the use of negative cognitive emotion regulation strategy in students is stable in the long-term. There is a significant difference in the positive cognitive emotion regulation strategy variable in the mindfulness-based cognitive therapy group between the pre-test and post-test stages with a mean difference of -6.13 and between the pre-test follow-up stages with a mean difference of -5.40 ( $P < 0.05$ ). Consequently, mindfulness-based cognitive therapy is effective in increasing the students' use of positive cognitive emotion regulation strategy. There is no significant difference between post-test and follow-up stages with a mean difference of 0.73 and a significance level of 0.08 ( $P > 0.05$ ). Therefore, the effect of mindfulness-based cognitive therapy on increasing the use of positive cognitive emotion regulation strategies in students is stable in the long term.

## Discussion

The present study aimed at investigating the effectiveness of group counseling of mindfulness-based cognitive therapy on Internet addiction and cognitive emotion regulation in high school students. Findings of the present study indicated that group counseling of mindfulness-based cognitive therapy has a significant effect on students' Internet addiction ( $P < 0.01$ ). This means that group counseling of mindfulness-based cognitive therapy can decrease high school students' Internet addiction. A study directly investigating the effect of group counseling of mindfulness-based cognitive therapy on Internet addiction in high school students was not found to investigate its consistency. However, this finding was consistent with the findings of Ahmadi et al. (2021), Shamli et al. (2015), Lan et al. (2018) and Regan et al. (2020).

In explaining the research finding, the achievement of the group counseling of mindfulness-based cognitive therapy for these students was that without completely preventing them from playing, it helped them to be aware of their feelings and emotions while experiencing the pleasure of playing and finally manage them. In fact, students perform mindfulness exercises, including teaching the concept of mindfulness and relationships and interaction between thoughts, emotion, through techniques such as body inspection and experiences,

breathing exercises and meditation to get aware of bodily thoughts and feelings, avoiding experimental avoidance and stress anxiety, to be able to increase patience and reduce the variety seeking, focus on their emotions in the present moment and control their negative thoughts and addictive behaviors more than the past (Lan et al., 2018). In fact, mindfulness-based cognitive therapy group counseling first uses attention to breathing, which is always available to the person so that the individuals realize that they can at least pay attention to breathing and his body and thus, find their way to their thoughts and judgments and ultimately manage them. In this way, they no longer blame themselves and do not get caught in the endless cycle of unsuccessful attempts and return to the previous state (Ahmadi et al., 2021).

Moreover, time is the main indicator of addiction and addictive behaviors. The time allotted to addictive activity and the repetition of those behaviors carries the label of addiction. Because these students spend so much time online and playing addictively, thus group counseling of mindfulness-based cognitive can immerse the person in an activity at any given moment and separate them from the hustle and bustle of the Internet. This feature of mindfulness promises each moment of dynamism in the use of time, which is the opposite of addictive behaviors such as attachment and addictive time spending on the Internet (Shamli et al., 2018).

Another finding of the present study indicated that group counseling of mindfulness-based cognitive therapy significantly affects students' cognitive emotion regulation ( $P < 0.01$ ). That is, group counseling of mindfulness-based cognitive therapy enhances positive cognitive emotion regulation strategies and reduces negative cognitive emotion regulation strategies in high school students. A study that directly investigated the effect of mindfulness-based cognitive therapy group counseling on cognitive emotion regulation in high school students was not found to compare the consistency of the results. However, this finding was consistent with the results of research by Mohaddes et al. (2019), Hedayati Zafarghandi et al. (2021), Shahidi et al. (2017) and Chiodelli et al. (2018).

In explaining this research finding, during the implementation of the mindfulness model, people learn to pay deep attention to the connection between emotional states and automatic experiences and also to refrain from perceiving disturbing experiences in emotional, cognitive and behavioral dimensions (Mohaddes et al., 2019). Also, by enhancing people's awareness of their inner emotions, it is possible to regulate and manage them more constructively and increase their ability to deal with this inner dimension more constructively and control it better. Since one of

the goals of mindfulness-based cognitive therapy is unbiased acceptance of emotions, this type of acceptance facilitates healthy encountering with emotions and allows individuals to face their emotions and accept them in an unbiased manner without involvement in emotions or avoiding them (Shahidi et al., 2017). Through unbiased acceptance, one can access appropriate cognitive emotion regulation strategies instead of getting caught up in the habitual patterns of coping with emotions, which is actually involvement or avoidance, and reduce negative cognitive emotion regulation strategies in the individual (Zafarghandi et al., 2021).

## Conclusion

The results of the study showed that when adolescents face problems and difficulties, the use of mindfulness techniques such as awareness raising, physical awareness, body awareness, etc. can reduce or avoid severe conflict with disturbing thoughts and feelings. If conscious attention is paid to emotional regulation, the improvements in emotional regulation can be due to an overall increase in positive emotional experiences and a decrease in negative emotional experiences. In addition, mindfulness enhances students' ability to cognitively regulate emotion by reducing negative emotions. Acceptance distracts attention to less disturbing aspects of negative emotion-provoking stimuli and thus reduces negative emotions (Chiodelli, et al., 2018)

Just like other studies, the present study had its limitations; for example due to the COVID-19 pandemic, group counseling sessions were held online and in the Skyroom space, therefore, the effectiveness of some exercises may have faced limitation. Another limitation of the present study was the lack of control over change processes and the role of mediating and moderating variables, and therefore it was not possible to study the change process and mechanisms. Intervening and mediating variables are recommended to be examined in future research. It is also suggested that in future research, this research be conducted on the female adolescent population to compare the results with the present study. In addition, it is suggested that in future research, other interventions such as emotion-based group therapy, acceptance and commitment therapy, and compassion-focused therapy to compare the results with the present study. Moreover, the use of qualitative and in-depth studies consistent with the concerns of adolescence is another research suggestion. It is suggested to consider the possibility of measuring the changes made from the perspective of family members and parents in future research. It is suggested that Ministry of Education include the teacher training

program for the implementation of such interventions within in-service training agenda to prepare the implementation of such interventions in schools. It is suggested to use the results of this research in the form of educational and counseling interventions in counseling centers special for adolescents and students.

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## Conflicts of Interest

No conflicts of interest declared.

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