IPA
International Journal of Psychology
Vol. 15, No.1, Winter & Spring 2021
PP. 75-101

Iranian **P**sychological
Association

Comparison of the Effectiveness Acceptance and Commitment Therapy (ACT) and Mindfulness-Based Cognitive Therapy on Distress Tolerance of Female Adolescents with Self-Injury Behaviors

Article Type: *Research Article*

Maryam Komarati, PhD Student
Department of Psychology, Arak Branch, Islamic Azad University, Arak, Iran.

Firoozeh Zangeneh Motlagh, PhD*
Department of Psychology, Arak Branch, Islamic Azad University, Arak, Iran.
f-zanganeh@iau-arak.ac.ir

Zabih Pirani, PhD
Department of Psychology
Arak Branch, Islamic Azad University, Arak, Iran.

Received: 25/ 12/ 2021 Revised: 4/ 4 2022 Accepted: 12/ 7/ 2022
Dor: 20.1001.1.20081251.2021.15.1.1.0

The present study was conducted to compare the effectiveness of acceptance and commitment therapy (ACT) plus mindfulness-based cognitive therapy on distress tolerance of female adolescents with self-injury behaviors using a quasi-experimental and pretest-posttest design with control groups. Sixty female students were selected as the sample from all female students in public schools in District 1 of Tehran via stepwise cluster sampling method and randomly divided into three groups (n=20 in each group). The first experimental group (ACT) and the second experimental group (mindfulness) received 8 sessions of therapeutic interventions (60-70 minutes per week), while the control group had no intervention. The self-report list of self-injury behaviors was used before, immediately after and 2 months after the intervention sessions for data collection (Klonsky, & Glenn, 2009) plus distress tolerance scale (DTS) (Simons, & Gaher, 2005). SPSS software version 23 was used for data analysis. The results of multivariate analysis of

[Downloaded from bijp.ir on 2026-11-20]
[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

covariance (ANCOVA) indicated that both intervention methods were effective on increasing distress tolerance and its components (P<.01). The results of Bonferroni test revealed no significant difference between effectiveness of ACT and mindfulness-based cognitive therapy on distress tolerance of students with self-injury behaviors. Thus, it can be found that both intervention methods were effective on enhancing adolescent distress tolerance and both approaches can be used to improve the mental health of adolescents with self-injury behaviors.

Keywords: distress tolerance, self-injury behaviors, acceptance and commitment therapy, mindfulness, adolescents.

Adolescence is associated with a wide range of changes that significantly affect the performance of adolescents in various interpersonal and interpersonal dimensions. According to international studies and the report of World Health Organization (2005), the rate of self-injury thoughts and behaviors increases significantly during adolescence (Heilbron, & Prinstein, 2010). Intentional self-injury in the last 50 years has been classified into various forms such as suicide attempt, suicide attempt without intent to die, intentional self-injury including intentional self-poisoning and self-injury (Chamberlain, et al, 2017). A behavior that is common among adolescents today is inappropriate ways for dealing with emotional problems, stress, anger, and failure (Blasczyk-Schiep, et al, 2018). In other words, with increasing epidemic of self-injury in the 21st century, experts have found that adolescents use this method as a tool to deal with depression, distress, and confusion, which is associated with natural pain, blood, wounds, and finally healing, showing a conflict with oneself and the struggles of adolescence (Černis, et al, 2019). Self-injury behaviors reduce emotional distress in the short term and therefore may be reinforced and continued (Claes, et al, 2010). Thus, it is possible to mention distress tolerance as one of the

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

common constructs for research in the field of emotional disorder and excitement of adolescence.

Distress, as one of the crises of adolescence that occurs in response to the physical and cognitive processes during this period, is the body's physiological response to any request for psychological or physical adjustment which may be manifested by emotional representation such as aggressive behavior (Simons & Gaher, 2005). In general, distress tolerance may be a function of automatic activities (e.g., unconscious) and hard activities (e.g., voluntary) (Zvolensky et al, 2011). Distress tolerance can be defined as the ability not to respond to the opportunity for immediate negative reinforcement in distressing situations (Trafton & Gifford, 2011). By definition, people assess the expected rewards of receiving a negative reinforcement by not responding to an opportunity, as well as the expected punishments that result from responding to an opportunity to experience distress. Their decision to tolerate distress may be influenced by the assessment results. Thus, it is reasonable to assume that the expected rewards of adopting the tolerance option (not responding to a negative reinforcement opportunity) and the expected punishments of adopting the avoidance option (responding to a negative reinforcement opportunity) are assessed by the positive emotions associated with the tolerance option and negative emotions associated with the avoidance option (Seo & Kwon, 2016). Those with low distress levels may be exposed to maladaptive responses to distress and distress-inducing conditions. As a result, they may try to avoid negative emotions or related annoying states (Bernstein et al, 2009). According to a study by Kauanag & Shapiro (2004), those who equip themselves with a set of coping

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

skills and abilities were more successful in coping with problems as they used effective coping responses to overcome physical, mental, interpersonal, and social problems as well as individual conflicts; as a result, these people had a better quality of life and mental health (Ghasemzadeh Nasaji et al, 2010).

Today, researchers believe that distress and stress can no longer be considered as the inevitable consequences of adolescence, but psychological distress during this period may be abnormal, demanding intervention and treatment (Kuther, 2018). Among psychological treatments, today's therapists are faced with various patterns of treatment and reduction in psychological symptoms including the third-generation psychological treatments, which can be called general acceptance-based models, such as ACT and mindfulness-based cognitive therapy. Instead of changing cognitions, these therapies try to enhance the psychological relationship between the person and his thoughts plus feelings.

The objective of ACT is to help achieve a more valuable and satisfying life through enhancing psychological flexibility rather than focusing only on cognitive reconstruction (Kaboudi et al, 2017). The underlying philosophy does not suggest ACT based on a factual model; rather, it considers the principle of work as anticipating and influencing behavior in a precise, broad, and profound way. ACT seeks to promote a person's psychological relationship with his or her thoughts and feelings (Hayes, 2004). The study results of Roohi et al. (2019) and Izakiyan et al. (2019) showed that ACT reduced social distress and enhanced self-compassion, distress tolerance, and regulation of students' emotion. According to the study results of Lee et al. (2020), ACT caused significant changes in the severity of symptoms and trichotillomania during the day, and had a significant effect on

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

psychological flexibility which caused the treatment group to reach a near-clinical level. Bai et al. (2020) in a systematic review and meta-analysis of 18 electronically published studies between January 2010 and August 2018 concluded that ACT significantly reduced depression.

World Health Organization (WHO) has introduced mindfulness as a promising way to boost adolescent mental health in schools (Beattie et al, 2020). According to Segal, Williams, & Teasdale (2013), mindfulness changes a person's view of himself or herself and empowers him or her to forget useless habits as well as reactions to the current experience and choose more adaptive ways to respond (Cavanagh et al, 2014). Mindfulness techniques help a person observe the content of consciousness impartially and without judgment. Indeed, mindfulness facilitates confrontation with all aspects of life, even painful aspects, and gives a person the ability to respond consciously rather than automatically (Reibel et al, 2001). The study results of Babakhani (2019) and York (2021) have confirmed the effectiveness of mindfulness skills on enhancing adaptation (social, emotional, and educational) and mental health as well as well-being of adolescent students. The study results of Deng et al, (2020) on neuroscience also showed that mindfulness was effective on regulating and processing negative emotions. In short, this intervention consciously investigates the underlying stimuli of cognition plus emotions and exposes the latent concepts of life to consciousness; thus, without judgment or blame, it shows that emotions, composed of thoughts, bodily senses, raw emotions and impulses are also often signs of deep and wide-ranging inefficiency on how we relate to ourselves, others, and the world (Williams & Cullen, 2020).

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Although previous studies have shown that ACT and mindfulness-based cognitive therapy have been effective on helping a wide range of mental disorders, the effectiveness of these two approaches has not been so far reviewed on specific communities, including adolescents with self-injury behaviors. Accordingly, the present study was conducted to compare the effectiveness of ACT and mindfulness-based cognitive therapy on distress tolerance of female adolescents with self-injury behaviors with the following hypotheses:

Hypotheses

1. ACT is effective on enduring distress in adolescents with self-injury behaviors.
2. Mindfulness-based cognitive therapy is effective on enduring distress in adolescents with self-injury behaviors.
3. There is a difference between the effectiveness of ACT and mindfulness-based cognitive therapy on distress tolerance of adolescents with self-injury behaviors.

Method

A quasi-experimental study was conducted using a pretest-posttest design with a control group. The statistical population included all female students studying in public schools of the first secondary grade of District 1 of Tehran in the academic year of 2019-2020. Sixty female students were selected by stepwise cluster sampling method based on inclusion criteria and randomly divided into three groups (two experimental groups and a control group/n=20 in each group). The sample size was selected based on the sample size proposed in experimental studies (at least n =15 in each group) (Delavar, 2019) and taking into account the dropout probability. After

[Downloaded from bijp.ir on 2026-11-20]
[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

obtaining the permission, introduction letter and list of schools, 6 schools were randomly selected. By referring to each school and interviewing the officials of the studied schools, students with self-injury behaviors meeting the inclusion criteria were identified and questionnaires were provided to each of them for screening and pre-test (n=157). After completing the questionnaires, 76 students who obtained the standard score in the questionnaires were interviewed to investigate the use of psychiatric drugs and narcotics. At this stage, 16 students were excluded from the study and finally 60 students who fulfilled all inclusion and exclusion criteria were randomly divided into two experimental groups and a control group (20 people in each group).

The study inclusion criteria included age range 14-16 years, no use of psychiatric drugs and narcotics, history of hospitalization or mental disorder (which was investigated through a clinical interview), history of self-injury behaviors based on teachers' reports and educational records, minimum mean score of 40 in the self-injury behaviors questionnaire, and the informed consent of the student and one of the parents to participate in the sessions. Absence from more than two sessions was considered as one of the study exclusion criteria.

In order to observe the research ethics, all therapy stages were performed by the researcher; first the objective of performing the tests and holding sessions was explained to the participants honestly with no ambiguity. Then, the subjects were told they were absolutely free if they did not want to attend sessions at any stage of the research. Also, if they wanted to know the study results of individually, they could communicate with the researcher via email.

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

After selecting the sample group, the first and second experimental groups underwent ACT and mindfulness intervention separately during 8 weekly sessions (60-70 minutes). The control group received no intervention during this period. One week after the intervention sessions, the re-stress tolerance scale was administered for both experimental groups and the control group as a post-test.

Instruments

Self-Report List of Self-Injury Behaviors

It is a self-report tool developed by Klonsky and Glenn (2009) which consists of 39 questions and 13 functions classified under two general factors: 1) intrapersonal functions and 2) interpersonal functions. Intrapersonal functions (emotional regulation, anti-dissociation, anti-suicide, distress, and self-punishment) and interpersonal functions (independence, interpersonal privacy, interpersonal influence, peer dependence, revenge, self-care, excitement, and stubbornness). Scoring was done on a three-point Likert scale (zero = completely unrelated, 1= somewhat related, and 2 = completely related). The score range in this list was 0-78, and the mean score was 39. A higher score is a sign of more self-injury. To examine construct validity, clinical and contextual correlates of intrapersonal (Depression .25, anxiety .32, borderline Personality Disorder, .29 suicide Ideation, .36 attempted suicide .30, self-injuring while alone .33, and interpersonal functions (Depression .41, anxiety .38, borderline personality disorder .44, suicide ideation .36, attempted suicide .30, self-injuring while alone .33) supportive of the ISAS' construct validity were calculated (Klonsky & Glenn, 2009). In the studies on internal consistency, the follow-up Cronbach's alpha of the interpersonal part was .69

[Downloaded from bijp.ir on 2026-11-20]
[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

and .75 for the interpersonal part, and the reliability of the tool based on retesting (1 to 4 weeks) was .85. Convergent validity of this list has been reported to be .82 using Depression Anxiety Stress Scales (DASS-21) by Henry and Crawford, and .73 by McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) (Klonsky & Glenn, 2009). For the first time in Iran, Saffarinia et al (2015) translated and used this list. They reported the reliability of the list by Cronbach's alpha of .76 and confirmed its face plus content validity. In a study by Peymannia et al. (2018), the reliability of the list by Cronbach's alpha has been reported to be .71. In the present study, Cronbach's alpha of the questionnaire was .85.

Distress Tolerance Scale

It is a self-assessment index developed by Simons & Gaher (2005) with 15 items and 4 subscales (emotional distress tolerance, absorption of negative emotions, mental distress estimation, and adjustment of distress relief efforts) scored based on 5-point Likert-scale (strongly agree= 1 to strongly disagree= 5). A score below 40 on this scale indicates low distress tolerance. Cronbach's alpha for the subscales of emotional distress tolerance, absorption of negative emotions, mental distress estimation, and adjustment of distress relief efforts were .72, .82, .78, and .70, while being .82 for the entire scale, respectively (Simons and Gaher, 2005). This questionnaire was evaluated for the first time in Iran by Azizi (2009) and its Cronbach's alpha was .67 with the reliability coefficient by retest method being .81 for the entire scale and .71, .69, .77, and .73 for the subscales of tolerance, absorption of negative emotions, evaluation, and adjustment, respectively

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

(Azizi et al, 2010). In the present study, Cronbach's alpha of the questionnaire was .79.

Acceptance and Commitment Therapy (ACT)

ACT is a psychotherapy intervention performed in groups during 8 weekly sessions (60-70 minutes per week) according to the training package based on ACT (Izadi and Abedi, 2016) by the researcher (the first author of the article) who had passed the necessary courses in this field. The approach was conducted with 20 students (the first intervention group) who attended all treatment sessions. A summary of ACT sessions is provided in Table 1.

Mindfulness-based Cognitive Therapy

ACT is a group psychotherapy intervention performed in groups of 8 weekly sessions (60-70 minutes per week) based on Kabat-Zinn (1992) and Van Son et al (2011) protocols by the researcher (the first author of the article) with necessary training on this approach with 20 students (the second intervention group) who attended all treatment sessions. The mindfulness-based cognitive therapy sessions are summarized in Table 2.

The collected data obtained from pretest-posttest were analyzed using SPSS software version 23. Descriptive statistics (mean and standard deviation) and inferential statistics (Analysis of Covariance (ANCOVA), and Bonferroni Test) were used.

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Table 1

Summary of ACT Intervention Sessions

session	content of session
First	Establishing a therapeutic relationship using the metaphor of two mountains and a butterfly cocoon, familiarity with mental frameworks such as "if, then" using the metaphor of a tug-of-war with a monster, creating a desire to leave the inefficient program of change, using the metaphor of the hungry tiger.
Second	Increasing awareness of emotion control strategies, as responsible for a large part of the problems using metaphors of sand swamps, combat switches, and balls in the pool.
Third	Training acceptance and desire, an alternative to control using the metaphor of a tug-of-war with monsters and the allegory of pure chaos as well as the metaphor of the uninvited guest.
Fourth	Training cognitive dissociation using the metaphor of "passengers on the bus" and the metaphor of "soldiers on parade".
Fifth	Training conceptualized self, self as a dynamic self-awareness and self-observer process using the metaphors of a house with furniture and a chessboard.
Sixth	Familiarity with values and the distinction between value and objective using the metaphor of "funeral", using confrontation with the objective, and achieving goals in the path of values.
Seventh	Creating larger and more sustainable patterns of committed action using examples of experiential barriers such as difficult emotions, memories and thoughts, as well as environmental barriers such as lack of social skills, lack of support and resources, and etc.
Eighth	Training ACT algorithms aimed to replace fusion

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

	with thoughts, evaluating experiences, avoiding experiences, and reasoning for behaviors with acceptance, choice of values, and committed action.

Table 2

Summary of Mindfulness-Based Cognitive Therapy Intervention Sessions

session	content of session
First & Second	Familiarity and communication, description of objectives and rules of the sessions, emphasis on confidentiality, mutual respect, and etc., 3-minute sitting meditation practice at the beginning and end of the session, practicing a struggle with all your being and discussing this feeling, 30 minutes of meditation scanning the body while breathing and each time focusing on a part of the body, identifying and preparing a list of enjoyable daily activities of group members, training and practicing conscious attention and focus on breathing (breathing mindfulness), and describing changes in the pattern of breathing in accordance with the mood.
Third & Fourth	Body scan meditation; discussion about the experience of the previous session and the practices between sessions, the obstacles to doing the practices (restlessness, wandering, and distraction); and mindfulness program solutions to the problem (non-judgmental and letting go of disturbing thoughts); discussing differences in thoughts and feelings, sitting meditation and body scan.
Fifth & Sixth	Practicing seeing and hearing, 3-minute breathing practice at three stages, paying attention to the practice at the time of doing it, paying attention to breathing and the body, awareness of a new daily activity and mindfulness of an unpleasant event, and performing sitting meditation and mindfulness movements

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Seventh & Eighth	Releasing one-sided, one-dimensional and irrational thoughts, beliefs and desires through acceptance and awareness, considering and investigating issues in a multidimensional way with a clear and open mind, receiving feedback from group members on the principles taught, reviewing and summarizing the contents, recommending the use of mindfulness techniques (walking, eating, and etc.) in life and generalizing it to the whole life.

Results

A total of 60 female students participated in this study, whose mean age was 15.36 years in the first experimental group, 15.78 years in the second experimental group, and 14.92 years in the control group. Table 3 reports the descriptive statistics of students in the first and second experimental groups, and the control group on the variable of distress tolerance and its components.

Table 3

Mean and Standard Deviation of Distress Tolerance and its Components in the First and Second Experimental Groups, as Well as the Control Group in Pre-Test and Post-Test

variable	Test stage	N	Experimental group 1		Experimental group 2		Control group	
			M	SD	M	SD	M	SD
emotional distress tolerance	Pre-test	20	7.05	2.66	5.85	1.84	6.25	2.75
	Post-test	20	10.85	2.88	9.5	2.23	6.3	2.29
negative	Pre-test	20	8.2	2.68	7.4	2.66	7.2	2.72

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

emotions absorption	Post-test	20	11.55	2.58	10.3	2.83	7.6	2.54
mental assessment of distress	Pre-test	20	10.75	3.69	11.25	3.64	10.1	3.53
	Post-test	20	18.1	3.99	17.25	4.41	11.4	3.87
distress relief	Pre-test	20	7.9	3.19	6.3	1.78	7.25	2.75
	Post-test	20	12.25	2.07	9.95	2.85	6.75	2.44

According to the results of Table 3 in the two experimental groups, ACT and mindfulness-based cognitive therapy, the adjusted means of distress tolerance and its components increased from pre-test to post-test.

Kolmogorov-Smirnov test was employed for the normality of distress tolerance scores and its components (emotional distress tolerance, negative emotion absorption, and mental distress estimation). Z-statistic of Kolmogorov-Smirnov test indicated that the distribution of scores was normal (P> .05). Also, the results of Levene's test aiming to investigate the homogeneity of variances of the two groups revealed that the assumption of similar variances in the first and second experimental groups and the control group held (P> .05) for distress tolerance (F = 2.02 and sig = .085), tolerance (F = 2.96 and sig =.060), absorption (F = .195 and sig = 0.823), evaluation (F =.77 and sig = .466), and relief (F = 2.56 and sig = .073).

Also, the hypothesis of equality of the observed covariance matrices of the dependent variable held in the groups (F = 1.342, P>.05). Thus, multivariate analysis of variance test can be implemented. The results of multivariate analysis of covariance have been summarized in Table 4.

[Downloaded from bijp.ir on 2026-11-20]
[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

Table 4

Results of Multicovariance Analysis to Compare the Composition of the Dependent Variable in the Experimental and Control Groups

Test	Value	F	Df	Sig	Effect size
Pillai's Trace	.704	6.920	8	.0001	.352
Wilks' Lambda	.313	9.852	8	.0001	.441
Hotelling's Trace	2.145	13.141	8	.003	.518
Roy's Largest Root	2.121	27.040	4	.0001	.680

The findings of Table 4 indicate that considering the combined variable introduced into the multivariate analysis of covariance model, there is a statistically significant difference between the experimental and control groups (Eta = .352, p <.01, F = 6.920). According to the ETA coefficient, it was found that about 35% of the changes between the experimental and control groups were due to the intervention. The power of the test is due to the significance of the Pillai's Trace test.

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Table 5

Results of ANCOVA Analysis Comparison of Differences between Experimental and Control Groups in Distress Tolerance Scores and its Components

Source of variation		Total squares	df	Mean squares	F	Sig	Effect size
group	emotional distress tolerance	162.423	2	82.212	15.982	.0001	.376
	negative emotions absorption	126.317	2	62.158	15.990	.0001	.376
	mental assessment of distress	415.181	2	207.590	17.520	.0001	.398
	distress relief	254.863	2	127.431	26.487	.0001	.500

Table 5 reveals the results of analysis of covariance of distress tolerance (F = 53.714), emotional distress tolerance (F = 15.982), absorption of negative emotions (F = 15.99), subjective

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

estimate of distress (F = 17.52), and distress relief (F = 26.487) as well as the difference between the control group and the two experimental groups in terms of post-test at the level of P<.01.

Table 6 lists the results of the Bonferroni post hoc test plus the difference in distress tolerance score and its components between the first (ACT), the second (mindfulness-based cognitive therapy), and the third (control) groups.

Table 6

Bonferroni Post hoc Test of the Difference in the Effectiveness of ACT and Mindfulness-based Cognitive Therapy on Distress Tolerance

	group	mean difference i-j	Sig.
emotional distress tolerance	ACT-mindfulness	.628	.0001
	ACT- control	3.836	.0001
	Mindfulness-control	3.207	.0001
absorption of negative emotions	ACT-Mindfulness	1.123	.291
	ACT- control	3.536	.0001
	Mindfulness-control	2.413	.002
subjective estimate of distress	ACT-Mindfulness	.994	1/000
	ACT- control	6.093	.0001
	Mindfulness-control	5.099	.0001
distress relief	ACT-mindfulness	1.541	.121
	ACT- control	5.010	.0001
	Mindfulness-	3.469	.0001

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

control

The results of Table 5 showed that the difference between ACT and mindfulness-based cognitive therapy was not significant in the variables of emotional distress tolerance (M = .628, P >.05), absorption of negative emotions (M = 1.123, P >.05), subjective estimate of distress (M =.994, P >.05), and distress relief (M = 1.541, P >.05). As a result, both interventional methods were effective on enhancing distress tolerance and its components in adolescents with no significant difference.

Discussion

The present study sought to answer the question of whether there is a difference between the effectiveness of acceptance and commitment therapy and mindfulness-based cognitive therapy on distress tolerance of female adolescents with self-injury behaviors. The results of multivariate Analysis of Covariance (ANCOVA) and Bonferroni Test revealed that both treatment groups were effective on distress tolerance in comparison with the control group and enhanced distress tolerance in adolescents with self-injury behaviors. The results are consistent with the findings of York (2021), Deng et al. (2020), and Babakhani (2019), confirming the effectiveness of ACT, along with those of Roohi et al. (2019), Izakiyan et al. (2019), and Bai et al. (2020) confirming the effectiveness of mindfulness-based cognitive therapy. For explaining the effectiveness of ACT on boosting the tolerance of adolescents with self-injury behaviors, it can be stated that in ACT, it is believed that human suffering is due to psychological inflexibility, which is reinforced by cognitive fusion and empirical avoidance (Hayes et al, 2013; Quinlan et al, 2018). Thus, in this approach, the first objective of treatment is to neutralize avoidant behaviors (Quinlan et al.,

[Downloaded from bijp.ir on 2026-11-20]
[DOR: 20.1001.1.20081251.2021.15.1.1.0]
[DOI: 10.66224/ijpb.15.1.75]

2018) and the second objective is to promote psychological flexibility (Hayes, 2004) through six behavioral processes: communication with the present, acceptance, dissociation, self as the ground, identifying values, and committing to values (Hayes et al, 2013; Zhang et al., 2018).

Distress tolerance is considered as a basic structure consisting of tolerating, paying attention, absorbing, evaluating, plus regulating negative emotional experiences and especially preventing emotional avoidance or reaction. Meanwhile, since having a quality, comfortable, calm life full of health depends on first accepting negative and positive emotions and second the commitment to reduce negative emotions in a balanced and calm way (tolerance of distress is formed by this process), one can expect ACT effective on distress tolerance of students with self-injury behaviors. Indeed, distress tolerance is a sign of good adaptation in the person whereby the person learns to accept distress as a normal reality of life (Keough et al., 2010). ACT heightens the likelihood of distress tolerance by lowering morbid expectations, rapidly reducing negative emotions plus disturbing thoughts, and accepting them at the level of mind and body as human necessities, as well as cognitively absorbing events. So, the person absorbs, evaluates, and regulates events in a cognitive way thus increasing the distress tolerance. As mentioned, stress tolerance is a person's ability to resist and experience a negative mental state. Those with low tolerance describe distress as an unbearable structure. They can use brainstorming to observe within themselves and then focus on the inner experience with acceptance. ACT is effective on enhancing distress tolerance through the advantages of isolating the oneself from thoughts and accepting the suffering of some

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

mental problems as well as increasing the commitment to positive action in order to improve oneself.

For explaining the effectiveness of mindfulness-based cognitive therapy on boosting distress tolerance of adolescents with self-injury behaviors, it can be stated that mindfulness-based cognitive therapy is a new promise for explaining the outcome of cognitive-behavioral therapy. Mindfulness training requires metacognitive learning and new behavioral strategies to focus on attention, prevent rumination, and note anxious responses, leading to the development of new thoughts and reduction in unpleasant emotions (Segal et al, 2018). Facing negative emotion instead of avoiding it in distressing situations is one of the important objectives of mindfulness-based cognitive therapy. In mindfulness-based cognitive therapy, meditation techniques such as breathing and increasing awareness of the situation are used to cope and survive in crisis and make the person tolerate his or her physical and emotional pain. In mindfulness-based cognitive therapy, the person develops an extra-emotional construct called distress tolerance. In this way, he attracts attention to it, evaluates it, and when he cannot change the situation, he accepts and tolerates it, as well as regulates the emotions, especially the force resulting from the desire to act, in order to avoid or immediately weaken the experience with no dissociation. Distress tolerance is a person's ability to resist and experience negative mental states. This technique is a mindful approach to working with intense and difficult emotions that seeks to find the right shelter in the event of distress (Kazemi et al, 2018). It seems that people's mindfulness practices affect the cognitive system and information processing through techniques such as attention to breath and body, and focusing consciousness on the here and

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

now. With the mindfulness method, the people's thoughts are experienced as mental events where the focus and attention on breathing is used as a tool for living in the present. In this way, people are trained to distance themselves from negative thoughts. Training flexibility, mental enrichment, stopping rumination, correcting positive and negative beliefs, as well as challenging negative beliefs related to emotions would reduce distress and enhance distress tolerance (Segal et al, 2018).

In general, it was found that using either ACT and mindfulness-based cognitive therapy, an important step can be taken to boost distress tolerance of adolescents with self-injury behaviors. This therapeutic approach can be a guide for counselors and therapists to enhance mental health. Also, school counselors can use the two approaches to augment the tolerance of students with self-injury behaviors as a first step. There were some limitations in the present study. For example, the study was conducted only on female students with self-injury behaviors. Also, it was not possible to control the confounding variables such as economic status, environmental conditions, emotional status, and specific issues of the students in the sample, which limits the generalization of results. Due to the limitations of this study, it is suggested to conduct studies on both genders (male and female) and compare the results in the future.

References

Azizi, A., Mirzaei, A., Shams, J. (2010). Correlation between Distress Tolerance and Emotional Regulation with Students Smoking Dependence. *Hakim Research Journal*, *1*(11), 13-18. https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=186015

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Babakhani, V. (2019). The Effectiveness of Mindfulness Skills Training on Adjustment and Mental Health of Students. *Rooyesh-e-Ravanshenasi Journal Psychological Journal, 8*(5), 171-178. http://frooyesh.ir/article-1-1051-en.html

Bai, Z., Luo, S., Zhang, L., Wu, S., & Chi, I. (2020). Acceptance and commitment therapy (ACT) to reduce depression: A systematic review and meta-analysis. *Journal of Affective Disorders, 260*, 728-737. https://doi.org/10.1016/j.jad.2019.09.040

Beattie, M. M., Konttinen, H. M., Volanen, S.-M., Knittle, K. P., & Hankonen, N. E. (2020). Social cognitions and mental health as predictors of adolescents' mindfulness practice. *Mindfulness, 11*(5), 1204–1217. https://doi.org/10.1007/s12671-020-01331-8

Bernstein, A., Zvolensky, M. J., Vujanovic, A. A., & Moos, R. (2009). Integrating anxiety sensitivity, distress tolerance, and discomfort intolerance: A hierarchical model of affect sensitivity and tolerance. *Behavior Therapy, 40*(3), 291-301. https://doi.org/10.1016/j.beth.2008.08.001

Blasczyk-Schiep, S., Kazen, M., Jaworska-Andryszewska, P., & Kuhl, J. (2018). Volitional determinants of self-harm behaviour and suicidal risk in persons with borderline personality disorder. *The European Journal of Psychiatry, 32*(2), 77-86. https://doi.org/10.1016/j.ejpsy.2017.10.003

Cavanagh, K., Strauss, C., Forder, L., & Jones, F. (2014). Can mindfulness and acceptance be learnt by self-help? A systematic review and meta-analysis of mindfulness and acceptance-based self-help interventions. *Clinical Psychology Review, 34*(2), 118-129. https://doi.org/10.1016/j.cpr.2014.01.001

Černis, E., Chan, C., & Cooper, M. (2019). What is the relationship between dissociation and self-harming behaviour in adolescents? *Clinical Psychology & Psychotherapy, 26*(3), 328-338. https://doi.org/10.1002/cpp.2354

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Chamberlain, S. R., Stochl, J., Redden, S. A., Odlaug, B. L., & Grant, J. E. (2017). Latent class analysis of gambling subtypes and impulsive/compulsive associations: Time to rethink diagnostic boundaries for gambling disorder? *Addictive Behaviors*, *72*, 79-85. https://doi.org/10.1016/j.addbeh.2017.03.020

Claes, L., Houben, A., Vandereycken, W., Bijttebier, P., & Muehlenkamp, J. J. (2010). The association between non-suicidal self-injury, self-concept and acquaintance with self-injurious peers in a sample of adolescents. *Journal of Adolescence*, *33*(5), 775–778. https://doi.org/10.1016/j.adolescence.2009.10.012

Delavar, A. (2019). *No Theoretical and practical foundations of research in humanities and social sciences*. Tehran: Roshd Publications.

Deng, X., Gao, Q., Zhang, L., & Li, Y. (2020). Neural underpinnings of the role of trait mindfulness in emotion regulation in adolescents. *Mindfulness*, *11*, 1120-1130. https://doi.org/10.1007/s12671-019-01276-7

Ghasemzade Nassaji, S., Peyvastegar, M., Hosseinnian, S., Mutabi, F., & Banihashemi, S. (2010). Effectiveness of cognitive-behavioral intervention on coping responses and cognitive emotion regulation strategies in women. *Journal of Behavioral Sciences, 4*(1), 35-43.

Hayes SC. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy*, *35*(4), 639-65. https://doi.org/10.1016/S0005-7894(04)80013-3

Hayes, S. C., Levin, M. E., Plumb-Vilardaga, J., Villatte, J. L., & Pistorello, J. (2013). Acceptance and commitment therapy and contextual behavioral science: Examining the progress of a distinctive model of behavioral and cognitive therapy. *Behavior*

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Therapy, *44*(2), 180-198. https://doi.org/10.1016/j.beth.2009.08.002

Heilbron, N., & Prinstein, M. J. (2010). Adolescent peer victimization, peer status, suicidal ideation, and nonsuicidal self-injury: Examining concurrent and longitudinal associations. *Merrill-Palmer quarterly (Wayne State University. Press)*, *56*(3), 388-419. https://doi.org/10.1353/mpq.0.0049

Izadi, R., & Abedi, M. R. (2016). *Acceptance & Commitment Therapy (ACT)*. Tehran: Jungel Publications.

Izakiyan, S., Mirzaian, B., & Hosseini, S. H. (2019). Effectiveness of education emotion regulation techniques on reducing stress and increasing resilience of students. *Thoughts and Behavior in Clinical Psychology*, *14*(53), 17-26. https://jtbcp.riau.ac.ir/article_1564.html?lang=en

Kabat-Zinn, J. (1992). *Psychosocial factors: Their importance and management*. Prevention of Coronary Heart Disease, Little, Brown and Company, Boston.

Kaboudi, M., Dehghan, F., & Ziapour, A. (2017). The effect of acceptance and commitment therapy on the mental health of women patients with type II diabetes. *Ann Trop Med Public Health, 10*(6), 1709-1713. https://doi.org/10.4103/ATMPH.ATMPH _ 607_17

Kazemi, H., Shojaei, F., & Soltanizadeh, M. (2018). The Effect of Mindfulness-Based Stress Reduction Intervention on Psychological Flexibility, Distress Tolerance, and Re-Experiencing the Trauma in Veterans with Post-Traumatic Stress Disorder. *Quarterly Military Caring Sciences*, *4*(14), 236-248. https://doi.org/10.29252/mcs.4.4.236

Keough, M. E., Riccardi, C. J., Timpano, K. R., Mitchell, M. A., & Schmidt, N. B. (2010). Anxiety Symptomatology: The Association with Distress Tolerance and Anxiety Sensitivity. *Behavior*

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Therapy, *41*(4), 567–574. https://doi.org/10.1016/j.beth.2010.04.002

Klonsky, E. D., & Glenn, C. G. (2009). Assessing the functions of non-suicidal self-injury: Psychometric properties of the Inventory of Statements about Self-injury (ISAS). *Journal of Psychopathology and Behavioral Assessment*, *3*(1), 215-219. https://doi.org/10.1007/s10862-008-9107-z

Kuther, T. L. (2018). *Lifespan Development: Lives in Context*. Second edition. New York: Sage publication.

Lee, E. B., Homan, K. J., Morrison, K. L., Ong, C. W., Levin, M. E., & Twohig, M. P. (2020). Acceptance and commitment therapy for trichotillomania: A randomized controlled trial of adults and adolescents. *Behavior Modification*, *44*(1), 70-91. https://doi.org/10.1177/0145445518794366

Peymannia, B., Hamid, N., Mhmudalilu, M. (2018). The Effectiveness of ACT Matrix with compassion on self-injury behaviors and quality of life of Students with symptoms of Borderline Personality Disorders. *Journal of Psychological Achievements*, *4*(25), 23-44. https://doi.org/10.22055/psy.2018.23581.1905

Quinlan, E., Deane, F. P., & Crowe, T. (2018). Pilot of an acceptance and commitment therapy and schema group intervention for mental health carer's interpersonal problems. *Journal of Contextual Behavioral Science*, *9*, 53-62. https://doi.org/10.1016/j.jcbs.2018.06.006

Reibel, D. K., Greeson, J. M., Brainard, G. C., & Rosenzweig, S. (2001). Mindfulness-based stress reduction and health-related quality of life in a heterogeneous patient population. *General Hospital Psychiatry*, *23*(4), 183-192. https://doi.org/10.1016/S0163-8343(01)00149-9

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Roohi, R., Soltani, A. A., Zinedine Meimand, Z., & Razavi Nematollahi, V. (2019). The effect of acceptance and commitment therapy (act) on increasing the self-compassion, distress tolerance, and emotion regulation in students with social anxiety disorder. *Quarterly Journal of Child Mental Health*, *6*(3), 173-187. http://childmentalhealth.ir/article-1-432-en.html

Saffarinia, M., Nikoogoftar, M., & Damavandian, A. (2015). The Effectiveness of Dialectical Behavior Therapy (DBT) on Reducing Self-Harming Behaviors in Juvenile Offenders in Tehran's Juvenile Correction and Rehabilitation Centre. *Clinical Psychology Studies*, *4*(15), 141-158. https://jcps.atu.ac.ir/article_349.html?lang=en

Segal Z. J., Williams, J. M. D, & Teasdale, J. D. (2018). *Mindfulness-Based Cognitive Therapy for Depression*. (second edition). NewYork: Guilford Press.

Seo, J. W., & Kwon, S. M. (2016). Testing an affective judgment model of distress tolerance in college heavy drinkers. *Addictive Behaviors*, *58*, 100-103. https://doi.org/10.1016/j.addbeh.2016.02.021

Simons, J. S., & Gaher, R. M. (2005). The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion*, *29*(2), 83-102. https://link.springer.com/article/10.1007/s11031-005-7955-3

Trafton, J. A., & Gifford, E. V. (2011). *Biological bases of distress tolerance.* In M. J. Zvolensky, A. Bernstein, & A. A. Vujanovic (Eds.), Distress tolerance: Theory, research, and clinical applications (pp. 80–102). The Guilford Press.

Van Son, J., Nyklíček, I., Pop, V. J., & Pouwer, F. (2011). Testing the effectiveness of a mindfulness-based intervention to reduce emotional distress in outpatients with diabetes (DiaMind): Design of a randomized controlled trial. *BMC Public Health*, 11(1), 131. https://doi.org/10.1186/1471-2458-11-131

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

Williams, M., & Cullen, C. (2020). *Mindfulness: Finding Peace in a Franyic World.* Oxford Mindfulness Centre. https://www.relaxingthemind.org/wp-content/uploads/ 2021/ 01/FP-Week-4-Home-Practice-sheet.pdf

York, A. C. (2021). *Efficacy of an Online Mindfulness Training for Improving Adolescent Students' Subjective Wellbeing* (Doctoral dissertation, Grand Canyon University). https://www.proquest.com /openview/f321f21190df80936a4580a0f314727e/1?pq- origsite= gscholar&cbl=18750&diss=y

Zhang, C. Q., Leeming, E., Smith, P., Chung, P. K., Hagger, M. S., & Hayes, S. C. (2018). Acceptance and commitment therapy for health behavior change: a contextually-driven approach. *Frontiers in Psychology*, *8*, 2350. https://doi.org/10.3389/fpsyg.2017.02350

Zvolensky, M J., Bernstein, A., & Vujanovic, A A (2011). *Distress tolerance: Theory, Research, and Clinical Application*. New York: Guilford Press.

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]

[Downloaded from bijp.ir on 2026-11-20]

[DOR: 20.1001.1.20081251.2021.15.1.1.0]

[DOI: 10.66224/ijpb.15.1.75]