Iran J Psychiatry 2021; 16: 1: 21-29

Original Article

Efficacy of Acceptance and Commitment Therapy Compared to Cognitive Behavioral Therapy on Anger and Interpersonal Relationships of Male Students

Samira Masoumian[1], Ahmad Ashouri[1], Soheila Ghomian[2*], Mahbobeh Keshtkar[1], Esfandiar Siahkamary[1], Neda Vahed[3]

Abstract

Objective: The aim of the present study was to determine the efficacy of acceptance and commitment therapy (ACT) compared to cognitive-behavioral therapy (CBT) on anger and interpersonal relationships among male students.
Method: In the present study, several universities were selected from the public universities in Tehran province, based on random cluster sampling. Then, 400 students from selected universities were selected randomly and Aggression Questionnaire (AGQ) was administered on them. After collecting information, among the participants who gained scores higher than the average, 30 were selected based on the lottery and randomly (sorting their names in alphabetical order and randomly selecting them) and then were placed randomly in ACT (n = 15) and CBT (n = 15) groups. Also, the Fundamental Interpersonal Relation Orientation- Behavior (FIRO-B) and Aggression Questionnaire (AGQ) was performed on both groups before and after intervention.
Results: The results indicated that at the end of treatment, there was a significant decrease in the degree of anger among the participants and a significant improvement in all subscales of interpersonal relationships. Also, a significant difference was found between the 2 groups of ACT and CBT in terms of anger changes. Considering that the anger changes in the ACT group were higher, it can be concluded that the ACT group had more changes than the CBT group, but there was no significant difference between the 2 groups of ACT and CBT in terms of FIRO-B subscales.
Conclusion: In some cases, such as anger, ACT has a better effect than CBT, and in others, such as interpersonal problems, it is as effective as CBT.

Key words: *Anger; Acceptance and Commitment Therapy; Cognitive Behavioral Therapy; Interpersonal Relationships*

1. Mental Health Research, Iran University of Medical Sciences, Tehran, Iran.
2. Clinical Psychology, University of Tehran Counseling Center, Tehran, Iran.
3. Student Research Committee, Iran University of Medical Sciences, Tehran, Iran.

***Corresponding Author:**
University of Tehran Counseling Center, Tehran, Iran, Postal Code: 1417935840.
Tel: 98-21 66419504, Fax: 98-21 66416130, Email: Soheila_ghomian@yahoo.com

Article Information:
Received Date: 2019/09/04, Revised Date: 2020/07/27, Accepted Date: 2020/08/13

Anger is a natural, beneficial, and adaptive emotion that can be strong. When anger gets out of control and becomes destructive, it can lead to problems in work, interpersonal relationships, and the overall quality of life. Anger is manifested in 2 forms: an outburst of anger called aggression, and another anger that returns to the body, which is in the form of depression, feeling guilty, anxiety, weakness, or lethargy. Spielberger et al (1) argue that anger can also be defined as an emotional state that is variable in terms of severity and can also be considered as a relatively constant personality trait.

Lack of suitable families, low income, unemployment, and low education, long-term consumption of alcohol and drugs, tendency to violence, impulsiveness and undesirable social behaviors are all factors related to anger (2). Anger is aggravated when the trigger position appears to be intentional, unjustified, and blameless. Also, anger is seen when values are compromised, promises and expectations are broken, and personal freedom and individual rights are not observed.

This excitement increases attention to stimulating situations, expands the processing of these positions, and therefore increases the reminding of provocative situations. Anger has an effect on people's communication. For example, Ananwami (3) argues that anger reduces the love of others or even self-interest that is necessary for the interconnection of human societies with each other .

Interventions related to anger are multicomponent. The first treatment was introduced by Novaquo (4), which was a combination of cognitive strategies, relaxation, and other behavioral strategies. Numerous therapeutic approaches have been used to control anger, including cognitive-behavioral therapy and acceptance-based therapy (5). The basic premise of the cognitive-behavioral approach is that cognition affects emotion and behavior, and more than events themselves, individuals respond to their cognitive representation of events (6). In the cognitive-behavioral approach, the basis for reducing aggression is cognitive reconstruction and anger management. One of the useful techniques used is different relaxation and self-monitoring of the frequency of anger. Also, other techniques include cognitive reconstruction in which the patient is taught about specific cognitive distortions (such as catastrophe, magnification, absolute thinking, and misrepresentation) and cognitive controversy strategies with these distortions (7). Therapists aim to teach anger management training, increase awareness of the symptoms of arousal and hostility, and teach self-control techniques to reduce the likelihood of antisocial aggressive behaviors that may be affected by previous cognitive events such as hatred (8). Shakibai reports that anger management therapy with a cognitive-behavioral approach improves adaptive anger mechanisms and reduces sensitivity to its stimulants in patients with aggression and anger. In this approach, familiarity with self-talk and thoughts that increase and decrease anger, as well as inflexible and flexible thoughts, play an important role. Learning to relax and solve problems is also useful and effective (9). Regarding the effectiveness of cognitive-behavioral therapy on anger management, research results show that this treatment has an effect on anger management and reduces anger in general (10-12). The results of the CBT meta-analysis of anger suggest that this treatment has widespread effects, although many of these studies have been performed on populations that experience less anger (13-16) .

On the other hand, psychological acceptance is a different therapeutic model and refers to the active process of receiving an event or a condition. In a therapeutic context, acceptance-based approaches are used to help clients experience emotions and body sensations in full (without avoidance). Also, these approaches fully regard the presence of thoughts without restricting them (17). Acceptance and commitment therapy (ACT) is one of the CBT-based therapies and based on psychological acceptance. From the perspective of ACT, anger is the natural consequence of the 6 related processes (cognitive fusion, attachment to self-conceptualization, avoidance, separation from the present moment, obscure values, and lack of attention to values) that can be followed by psychological inflexibility. This concept represent the inability to effectively regulate behavior (18). The main purpose of ACT is to develop psychological flexibility that is the ability to make practical choices among the different options that are more appropriate, rather than imposing action on the individual solely to avoid disturbing thoughts, emotions, memories, or desires. ACT helps individuals to experience problem-solving thoughts and emotions in a different way, rather than systematic attempts to change or reduce their frequency. Although there is growing evidence of the role of the 6 mentioned processes in various forms of distress of individuals (19, 20), few studies have been done on the role of these processes in the relationship with anger and its treatment (21). The results of the research of Doosti et al (22), Samadi Roshan and Jafari (23), and Chang and Wang (24) have shown that treatment based on acceptance and commitment reduces physical aggression and verbal aggression, anger, and hostility. Also, the findings of some studies show that ACT is effective in reducing aggression.

On the other hand, interpersonal problems are one of the most important issues of aggressive people. Interpersonal problems are referred to as repeated problems that people experience in their social relationships. These problems, through the use of maladaptive coping strategies that are learned during childhood, lead to an inefficient interactive style, which includes the avoidance, blame, affiliation, attack, or surrender style. Most psychiatric disorders are associated with problems in interpersonal functioning. Also, improving interpersonal performance is classified as the

world's top psychotherapeutic goal. In addition, interpersonal problems are inherently linked to psychological well-being and quality of life. Interpersonal relationship is the source of pleasure and reward for some individuals and for people with interpersonal problems it is often considered to be one of the most uncomfortable stressors they encounter daily. These people behave more offensively or passively. Interpersonal problems are an attribute that lead to personal distress and prevent the proper functioning of a person in social relationships and play an important role in the sustainability of psychological disturbances (25-29). Limited research has been done regarding the effect of ACT on interpersonal problems of clients. Nowroozi et al (30) evaluated the effectiveness of ACT on reducing interpersonal problems and experience avoidance of students and found that after checking the pretest scores, there was a significant difference between the mean scores of interpersonal problems and experience avoidance between the experimental (ACT) and control groups in the post-test phase .

According to the National Institute for Prevention and Control of Diseases, men show the highest rates of interpersonal violence. Other studies have also shown that men have a great deal of willingness to express anger at work (31, 32) and while driving (33). Even though it cannot be said that aggression is completely rooted in anger, but anger plays an important role in aggression and the expression of violent behavior. The male social role often creates the identity of men and boys which expresses anger and aggression as normal (34, 35). Campbell (36) argues that anger of men may be considered as reduced vulnerability, and being in control, and gaining respect from peers.

Various studies have been conducted on the treatment of anger of specific population. An example of these populations is the offenders (37, 38), aggressors who are intellectually disabled (39, 40), aggressive drivers (41), addicted people to cocaine (42), or anger associated with certain disorders, such as asperger syndrome (43). In a meta-analysis by Beck and Fernandez (13) on CBT of anger, it was found that only one study was conducted on male volunteers. Also, on the effectiveness of treatment based on acceptance and commitment to anger management, so far limited internal and external studies have been conducted to reduce anger (22-24). Thus, on the one hand, due to the limitation of therapeutic interventions on the reduction of men's anger, especially from the angle of ACT and comparison with CBT, and on the other, given the limited research in the field of male students' anger, this study aimed to determine whether ACT is significantly different from CBT in terms of reducing anger in male students. Then, given the importance of the impact of anger on interpersonal relationships, this study aimed to determine whether ACT is significantly different from CBT in terms of reducing interpersonal problems (as secondary variable).

Materials and Methods

Procedure

This was a clinical trial, in which several universities were selected from the public universities in Tehran province using random cluster sampling. Then, 400 students from universities were selected randomly and the Aggression Questionnaire (AGQ) was run on them. After collecting information, among those who gained scores higher than the average, 30 participants were randomly selected (Their names were sorted based on alphabetical order and were randomly selected.) and then were placed randomly into ACT (n = 15) and CBT (n = 15) groups. In this study, the participants and evaluators were not informed of the treatment process. The evaluators were selected from among those who did not participate in the treatment process. The Fundamental Interpersonal Relation Orientation-Behavior (FIRO-B) and AGQ were performed on both groups, before, and after intervention. The registration number of this study is IRCT2016060315577N3 in the Iranian Registry of Clinical Trials (IRCT) database and its code of ethics committee is IR.IUMS.REC.1395.25990 .

Treatment Sessions

ACT for anger is a 7-week program of group therapy and each session is held once a week for 90 minutes. A summary of ACT sessions is given in Table 1. CBT sessions are held once a week for 7 weeks. A summary of CBT is given in Table 2.

The criteria for admission of participants were as follow: lack of severe psychiatric disorders such as psychosis, substance abuse and alcohol abuse, based on information from a Structured Clinical Interview for DSM-5 disorders- Research Version (SCID-5-RV) (46) (Structured diagnostic interviews were conducted by a PhD student in Clinical Psychology.); not using any kind of treatment (other than drug therapy) during the course of the intervention; and willingness to participate in the study.

Table 1. A Summary of Acceptance and Commitment Therapy (ACT) Sessions (44)

Sessions	Contents and goals	Techniques
Session 1	The focus is on familiarizing the group members and the general familiarity with the content of ACT and anger	Survival mode; survival mode diary
Session 2	The second session explains the persistent emotion and the 5 sections of anger and the related exercises for subjects	The 5 parts of anger

Session 3	The focus of the third session is on controlling anger	Control self-assessment; imaginal review of control strategies
Session 4	The fourth session deals with how the mind produces anger. The focus of the fifth session is on tolerance and assertiveness	How the mind creates anger; what are the numbers? mary had a little…..; trigger thought worksheet
Session 5	The focus of the fifth session is on tolerance and assertiveness	Anger map; take yourself for a walk
Session 6	The use of forgetfulness to escape the annoyance is the focus of the sixth session	"The Facts"
Session 7	The seventh session emphasizes values and commitment to them	Digging your feet in the sand; standing up for something

Table 2. A Summary of Cognitive-Behavioral Therapy (CBT) Sessions (45)

Sessions	Contents and goals	Techniques
Session 1	Introduction; providing basic information about cognitive-behavioral psychotherapy; stating the cause and purpose of cognitive-behavioral group therapy sessions; expressing the rules and principles of treatment sessions	Performing homework as a practice to get to know more members of the group to do homework
Session 2	Explaining the relationship between thoughts, feelings and behavior; expressing differences of opinion, feelings and behavior; explaining the dysfunctional styles of thinking, expressing common cognitive errors;	Reconstruct thoughts worksheets
Session 3	Investigating the chain of cause, answer, consequence; explaining how the consequences themselves are placed in the larger behavioral chain	Articulating strategies to break the destructive chain
Session 4	Explaining the four main steps to rebuilding thoughts (identifying thoughts, evaluating thoughts, changing thoughts, determining the effects of modified thoughts)	Redistributing the thought reconstruction worksheets
Session 5	Explaining about stress, stressors and stress management	Muscle relaxation training
Session 6	Recognizing the problem; brainstorming; examining the consequences of solutions, and choosing the most appropriate solution	Problem solving technique
Session 7	a review of previous sessions	a review of the previous sessions techniques

Tools

- Demographic Characteristics Questionnaire: Personal information questionnaire included gender, age, education level, and marital status.
- Aggression Questionnaire (AGQ) (47): AGQ is a paper pencil self-report scale and was developed by Bass and Perry in 1992. This scale has 30 questions, and the total score is from 0 to 90 and is obtained by adding questions, except for question 18, which is a negative factor and is used to reverse this score. People who earn scores lower than the average, will have low aggressiveness and the higher the individual's score in this test, the more the amount of aggression. In Iran, the test-retest coefficients between the 2 scores and the Cronbach's alpha coefficient were 0.79 and 0.87, respectively. Also, the correlation coefficients between the PD subscale score of MMPI and AGQ was 0.58 for all participants, which is significant at P = 0.01, and correlation coefficients between the Boss and Duraki hostility questionnaire and the AGQ for all participants was reported to be 0.56 (48).
- The Fundamental Interpersonal Relation Orientation-Behavior (FIRO-B) (49): FIRO-B assesses how to communicate with each other and how a person interacts in this connection. The subscales of FIRO-B measure the orientation of a person in 3 areas of interpersonal needs, affection/openness, control and inclusion; and in each area, two modes of expression and control are measured. FIRO-B contains 54 questions and every 9 questions are related to one of the subscales. The score for FIRO-B is based on Likert scale of 6 options. This assessment ultimately gains 6 points: (a) expressive inclusion; (b) wonted inclusion; (c) expressive control; (d) want control; (e) expressive attention; and wanted attention. FIRO-B has proper predictive, content, and structural validity as well as a stable internal reliability. In Iran, FIRO-B was performed on 375 people and the results indicated an

imbalance in the affection of depressed people. The results of the study by Ahanchian et al (50) showed the Cronbach's alpha coefficient of this instrument to be 0.90. Also, the results of that study showed a significant correlation between this scale and cultural intelligence questionnaire, the highest of which is related to the correlation between the control dimension of this scale and the motivation dimension related to the cultural intelligence questionnaire, which was 0.98.

- Structured Clinical Interview for DSM-5 (SCID-5-RV version) (46): The SCID-5 structured interview is a semi-structured interview that provides diagnoses based on the DSM-5. Its semi-structural nature is due to the fact that its implementation requires the interviewer's clinical judgment on the interviewee's answers, and therefore the interviewer must have clinical knowledge and experience in the field of psychological pathology. SCID-5 has been developed in several versions: SCID-5-CV (Slinger version), SCID-5-CT (Clinical trial version), SCID-5-RV (research version), SCID-5-PD (Personality Disorders Version), and SCID-5-AMPD (Alternative for Personality Disorders). In Iran, the validity of SCID-5-RV and SCID-5-CV versions of this scale is being done in the form of a research project (SCID-5-RV: (51); SCID-5-CV: (52)).

In this study, descriptive and inferential statistical indices and methods were used to describe and analyze the research data. Independent t test was used to investigate the differences between the 2 groups in terms of anger and interpersonal relationship problems scores. SPSS 19 software was used to analyze the data.

Results

Based on the results of this study, many participants were undergraduates (66.7%) and many were single (93.3%). Also, the average age was 24.63 (3.023).

As shown in Table 3, in most research variables, mean scores decreased in both the ACT and CBT groups.

As shown in Table 4, before and after ACT, there was a significant difference in the anger and the interpersonal relationships scores of the participants. At the end of the treatment, a significant decrease was found in the degree of anger among the participants and their interpersonal relationships improved.

As shown in Table 5, a significant difference was found between the 2 groups of ACT and CBT in anger changes. Considering that the anger changes in the ACT group are higher, it can be concluded that the ACT group had more changes than the CBT group. However, as shown in this table, there was no significant difference between the 2 groups of ACT and CBT in FIRO-B subscales.

Table 3. Descriptive Results Related to the Research Variables, Comparing Acceptance and Commitment Therapy with Cognitive-Behavioral Therapy

			CBT		ACT	
			M	SD	M	SD
pretest	AGQ	AGQ	51.60	7.87	53.10	6.84
	Subscales of FIRO-B	Inclusion (others)	25.86	6.55	25.80	6.47
		Inclusion (own)	27.86	6.30	27.66	6.45
		Control (to others)	24.40	7.01	38	24.33
		Control (to own)	22.20	5.62	22.53	5.66
		Affection (to others)	29.53	4.17	29.13	4.06
		Affection (to own)	33.86	2.38	33.73	2.60
posttest	AGQ	AGQ	34.76	8.57	34.32	11.39
	Subscales of FIRO-B	Inclusion (others)	39.60	5.56	40.40	5.22
		Inclusion (own)	38.88	4.77	38.39	6.14
		Control (to others)	39.19	4.77	41.67	5.10
		Control (to own)	34.66	3.82	35.33	5.20
		Affection (to others)	36.38	3.16	35.32	3.63
		Affection (to own)	36.10	1.94	36.48	2.82

Table 4. Significant Changes in the Variables of the Research before and after Acceptance and Commitment Therapy

		Average score before starting treatment	Average score after starting treatment	T	P
AGQ	AGQ	53.10	34.32	6.06	0.00
Subscales of FIRO-B	Inclusion (others)	25.80	40.40	-8.59	0.00
	Inclusion (own)	27.66	38.39	-6.14	0.00
	Control (to others)	24.33	41.67	-11.42	0.00
	Control (to own)	22.53	35.33	-9.99	0.00
	Affection (to others)	29.13	35.32	-6.27	0.00
	Affection (to own)	33.73	36.48	-2.56	0.02

Table 5. Significant Differences between the 2 Groups of Acceptance and Commitment Therapy and Cognitive-Behavioral Therapy

		Group	Average related to pre and posttest difference	Standard deviation related to pretest and posttest difference	T	P
AGQ	AGQ	ACT	-18.77	12.00	-0.54	0.03
		CBT	-16.83	6.70		
Subscales of FIRO-B	Inclusion (others)	ACT	14.60	6.57	0.37	0.62
	Inclusion (own)	CBT	13.73	5.95		
	Control (to others)	ACT	6.77	1.74	-0.12	0.58
	Control (to own)	CBT	5.38	1.39		
	Affection (to others)	ACT	5.88	1.51	0.16	1.99
		CBT	4.09	1.05		
	Inclusion (others)	ACT	4.95	1.28	0.78	0.07
	Inclusion (own)	CBT	5.22	1.34		
	Control (to others)	ACT	3.82	0.98	0.48	0.50
	Control (to own)	CBT	3.22	0.83		
	Affection (to others)	ACT	4.15	1.07	0.08	3.23
		CBT	2.50	0.64		

Discussion

Concerning the effectiveness of cognitive-behavioral therapy on anger control, the results of this study showed that CBT has an effect on reducing anger, which is in line with another research (53). Also, the results of this study are consistent with those of Hajilo and Shafiabadi (54), Sedaghat et al (55), and Wheatley et al (56). The researchers found that group cognitive and behavioral training is effective in reducing anger and aggression. Cognitive-behavioral therapy helps to distinguish healthy anger from unhealthy anger; and therefore, when they feel unhealthy anger, it provides solutions that help them control their anger (54). Behavioral cognitive therapy also identifies thoughts, beliefs, and meanings that are activated when people become angry and feel unwell (57). Cognitively, aggressive people have difficulty processing social information. These people usually have vindictive documents and do not have adaptive problem-solving skills, and when they are physiologically aroused, they act impulsively (55). Cognitive interventions increase self-awareness and motivate people to exercise more control over their behavior, speech, and anger. Because they realize that not only external stimuli, such as words or taunts from others, initiate anger and aggression in them, but also the type of perception and perspective that the individual has

can be involved in the occurrence of aggressive reactions (58).

Also, regarding the efficacy of ACT to control anger, the findings of the present study showed the effect of ACT on reducing aggression, which is in line with another research (59). In this regard, the results of the study by Samadi Roshan and Jafari (59) that was done with the aim of examining the efficacy of ACT on reducing verbal aggression by using a pretest-posttest design with a control group, showed that ACT was effective in the verbal aggression of the experimental group and there was a statistically significant difference between the mean score of the verbal aggression in the experimental and control groups. In addition, the results of the study by Soltani et al (60) that was done with the aim of assessing the efficacy of ACT on reducing the anger of mothers with children with autism showed that after ACT sessions, anxiety control rates for mothers with autistic children increased to a certain degree. In addition to the mentioned studies, the results of Mardi and Khalatbari study (61) showed that CBT and ACT in the experimental groups reduced anger, but such changes were not observed in the control group. Also, contrary to this study, the results of that study showed no significant difference between CBT and ACT to reduce anger. In explaining the effect of ACT on anger reduction, it can be said that participants who had high level of anger and aggression, during the treatment sessions, accepted their physical and psychological feelings and symptoms, and accepting these feelings reduces excessive attention and sensitivity to report this symptoms, which improves their compatibility (23). Also, experiencing avoidance, that is, the unwillingness to experience unpleasant inner feelings and thoughts, in the long run causes more symptoms of anger and aggression. The cognitive defusion in acceptance and commitment therapy means taking a step back and watch the thoughts that cause the thoughts to be considered only thoughts and not pure reality (22).

Limited research has been done regarding the effect of ACT on interpersonal problems of clients. The study by Nowroozi et al (30) showed a significant difference between the mean scores of interpersonal problems and experience avoidance between the 2 experimental (ACT) and control groups in the posttest phase. Contrary to that study, the results of this study indicated that the ACT group and the CBT group did not significantly differ in their interpersonal relationships. It seems that the prolongation of the number of items in FIRO-B and the fatigue and inaccuracy of the participants when answering their questions as well as the probability of non-interpersonal problems among participants even in the event of aggression problems are some reasons for this result. Based on this finding, it can be concluded that cognitive behavioral therapy, which changes thoughts to change behavior and emotion, and acceptance and commitment therapy, which uses some of the methods of defusion to change behavior, both are effective in reducing anger (62).

Limitation

This study had limitations and paying attention to them will help generalize its findings. These restrictions include not using a control group due to limited sample size, not using female students, and not using clinical samples compared to nonclinical samples .

Conclusion

Based on the results of this study, it can be said that in some cases, such as anger, ACT has a better effect than CBT, and in others, such as interpersonal problems, it is as effective as CBT. In fact, given the different assumptions of these 2 approaches, it is expected that each treatment approach will be superior to the other in improving some conditions. In treatment based on acceptance and commitment, change is done indirectly. Unlike cognitive-behavioral therapy, which deals directly with changing thoughts and feelings, this treatment changes thoughts and emotions and it invites people to accept, be aware, and be observant of themselves. However, more research is needed on the differences between these 2 approaches.

Acknowledgment

We would like to thank all individuals who participated in this study. This research was conducted in Mental Health Research at Iran University of Medical Sciences. This research was supported by grant No 94-05-121-25990 from Iran University of Medical Sciences (IUMS) (Mental Health Research Center).

Conflict of Interest

According to the authors, this article has no conflict of interest.

References

1. Spielberger C, Jacobs G, Russell S, Crane R. Assessment of anger: The state-trait anger scale. Advances in personality assessment. 1983;2:161-89.
2. Warshaw LJ, Messite J. Workplace violence: preventive and interventive strategies. J Occup Environ Med. 1996;38(10):993-1006.
3. Ramírez JM, Andreu JM. Aggression, and some related psychological constructs (anger, hostility, and impulsivity); some comments from a research project. Neurosci Biobehav Rev. 2006;30(3):276-91.
4. Steffen AM. Anger management for dementia caregivers: A preliminary study using video and telephone interventions. Behavior Therapy. 2000;31(2):281-99.
5. Hawton K, Kirk j, Salkowskis P, Clark D. Cognitive Behavioral Therapy (Vol. 1) A

practical guide to the treatment of psychiatric disorders:Tehran;2014. (Persian)
6. Wright J, Basco M, Thase M. Learning Cognitive-Behavior Therapy:Tehran;2017. (Persian)
7. Kazemeini T, Qnbry B, Modares Garavi M, Esmaili Zade M. The effectiveness of cognitive behavioral group therapy in reducing anger and aggression drive. J Clin Psychol. 2011;3(2):1-11. (Persian)
8. Berkowitz L. Frustration-aggression hypothesis: examination and reformulation. Psychol Bull. 1989;106(1):59-73.
9. Shakibai F, Tehrani Dost M, Shahrivar Z, Asari Sh. management group therapy, cognitive - behavioral juvenile institution. Recent Adv Cogn Sci. 2004;1: 59-65. (Persian)
10. Shokouhi Yekta M, Zamani N, Mahmoudi M, Pourkarimi J, Akbari Zardkhaneh S. The effect of Cognitive Behavioral Interventions on control anger at high school students. J Clin Psychol and Personal. 2015;2(11):61-70. (Persian)
11. Ghasmzadeh A, Jani S. The effectiveness of group Cognitive-Behavioral Therapy with problem solving training on anger self-regulation and feeling of loneliness. Though Behav Clin Psycho.2013;29(8):67-89. (Persian)
12. Ansari M, Borjaili A, Ahadi H, Hosseini Almadani S. Effect of Cognitive-Behavioral Group Therapy (CBT) on reducing anger among students. The 4st of University Student's Mental Health:Iran; 2008.
13. Beck R, Fernandez E. Cognitive-behavioral therapy in the treatment of anger: A meta-analysis. Cognitive therapy and research. 1998;22(1):63-74.
14. Del Vecchio T, O'Leary KD. Effectiveness of anger treatments for specific anger problems: a meta-analytic review. Clin Psychol Rev. 2004;24(1):15-34.
15. DiGuiseppe R, Tafrate RC. Anger treatment for adults: A meta-analytic review. Clin Psycho: Sci Pract. 2003;10: 70–84.
16. Edmondson C, Conger J. A review of treatment efficacy for individuals with anger problems: Conceptual, assessment and methodological issues. Clin Psych Rev.1996;16:251–275.
17. Wright S, Day A, Howells K. Mindfulness and the treatment of anger problems. Aggress Violent Behav. 2009; 14: 396–401 .
18. Hayes SC, Strosahl KD. A practical guide to acceptance and commitment therapy:Springer Science & Business Media;2004.
19. Hayes SC. Climbing our hills: A beginning conversation on the comparison of ACT and traditional CBT. Clin Psychol.2008;15: 286–295.
20. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: model, processes and outcomes. Behav Res Ther. 2006;44(1):1-25.
21. Eifert GH, Forsyth JP. The application of acceptance and commitment therapy to problem anger. Cognitive and Behavioral Practice. 2011;18(2):241-50.
22. Dousti P, Gholami S, Torabian S. The effectiveness of Acceptance and Commitment Therapy on aggression among students with internet addiction. J Health Care. 2016;18(1): 63-72. (Persian)
23. Samadi Roshan S, Jafari D, editors. The effectiveness of Acceptance and Commitment-Based Treatment (ACT) on the reduction of student's verbal aggression. 3st World Conference on Psychology and Educational Sciences, Law and Social Sciences at the Beginning of the Third Millennium. Iran.
24. Chang D, Hwang S. The development of anger management program based on acceptance and commitment therapy for youth taekwondo players. J Exerc Rehabil. 2017;13(2):160-7.
25. Horowitz LM, Rosenberg SE, Baer BA, Ureño G, Villaseñor VS. Inventory of interpersonal problems: psychometric properties and clinical applications. J Consult Clin Psychol. 1988;56(6):885-92.
26. McKay M, Lev A, Skeen M. Acceptance and commitment therapy for interpersonal problems: Using mindfulness, acceptance, and schema awareness to change interpersonal behaviors: New Harbinger Publications; 2012.
27. Lipsitz JD, Markowitz JC. Mechanisms of change in interpersonal therapy (IPT). Clin Psychol Rev. 2013;33(8):1134-47.
28. Bolger N, DeLongis A, Kessler RC, Schilling EA. Effects of daily stress on negative mood. J Pers Soc Psychol. 1989;57(5):808-18.
29. American Psychiatric Association. Quick reference to the diagnostic criteria from DSM-IV-TR:Washington; 2000.
30. Nowroozi M, Zargar F, Akbari H. Assessing the effectiveness of acceptance and commitment therapy (ACT) on reducing interpersonal problems and student avoidance. J Research in Behavioral Sciences. 1396; 15 (2): 174-1
31. Anfuso D. Deflecting Workplace violence. Pers J. 1994; 73: 66–77 .
32. Paul RJ, Townsend JB. Violence in the workplace—a review with recommendations. Employee responsibilities and rights journal. 1998;11(1):1-14.
33. Bethesda LM, Joint M, Connell D, Joint M. Aggressive Driving: Three Studies: New York Avenue; 1997.
34. Cox DL, Stabb SD, Hulgus JF. Anger and depression in girls and boys: A study of gender differences. Psychol Women Q. 2000;24(1):110-2.
35. Levant RF. Men and emotions: A psychoeducational approach:Newbridge Communication; 1997.
36. Campbell A. Men, women, and aggression: Basic Books;1993.
37. Echeburúa E, Fernández-Montalvo J, Amor PJ. Psychological treatment of men convicted of gender violence: a pilot study in Spanish prisons. Int J Offender Ther Comp Criminol. 2006;50(1):57-70.
38. Howells K, Day A, Williamson P, Bubner S, Jauncey S, Parker A, et al. Brief anger

management programs with offenders: Outcomes and predictors of change. The Journal of Forensic Psychiatry & Psychology. 2005;16(2):296-311.
39. Taylor JL, Novaco RW, Gillmer B, Thorne I. Cognitive-behavioural treatment of anger intensity among offenders with intellectual disabilities. J Appl Res Intellect Disabil. 2002;15:151–165.
40. Taylor JL, Novaco RW, Gillmer BT, Robertson A, Thorne I. Individual cognitive-behavioural anger treatment for people with mild-borderline intellectual disabilities and histories of aggression: a controlled trial. Br J Clin Psychol. 2005;44:367-82.
41. Galovski TE, Blanchard EB. The effectiveness of a brief psychological intervention on court-referred and self-referred aggressive drivers. Behav Res Ther. 2002;40(12):1385-1402.
42. Reilly PM, Shopshire MS. Anger management group treatment for cocaine dependence: preliminary outcomes. Am J Drug Alcohol Abuse. 2000;26(2):161-77.
43. Attwood T. Cognitive behaviour therapy for children and adults with Asperger's syndrome. Behav Change. 2004;21(3):147-61.
44. Foret MM, Eaton P. Acceptance and Commitment Therapy Anger Group. Kaiser Permanent Department of Psychiatry Vallejo Medical Center Vallejo, CA. 2014 .
45. Shapshir M, Riley PM. Practical Guide to Cognitive Behavioral Therapy of Anger: Sharafat Publications;2012. (Persian)
46. First M, Williams J, Karg R, Spitzer R. Structured clinical interview for DSM-5—Research version (SCID-5 for DSM-5, research version; SCID-5-RV). Arlington, VA: American Psychiatric Association;2015. p1-94.
47. Buss AH, Perry M. The aggression questionnaire. J Pers Soc Psychol. 1992;63(3):452-9.
48. Farmani, M. The Effect of Aggressive Behavior on Marital Adjustment. Master Thesis in Psychology:Shahid Beheshti University of Tehran;2005 .
49. Schutz WC. FIRO: A three-dimensional theory of interpersonal behavior. Oxford, England: Rinehart, 1958 .
50. Ahanchian M, Amiri R, Bakhshi M. Investigating the correlation between cultural intelligence and social interaction in nurses. Health Promotion Management. 2012; 1(2):44-53.
51. Setareh Forouzan A, Mohammadkhani P, Hoshyari Z, Abbasi A. Psychometric Coordinates of Structured Clinical Interviews for Psychological Disorders of Statistical and Diagnostic Booklet Version 5 and its Clinical Application in Iran. Research Project: University of Social Welfare and Rehabilitation Sciences;2019.
52. Shabani, A. Evaluation of Psychometric Specifications of Structured Clinical Interview for DSM-5, Clinical Version (SCID-5-CV) in the population of patients with psychiatric disorders in Tehran:Iran University of Medical Sciences; 2019.
53. Shokouhi Yekta M, Zamani N, Mahmoudi M, Pourkarimi J, Akbari Zardkhani, S. The Effect of Cognitive Behavioral Interventions on Anger Control in High School Students. Clin Psychol Personal. 2015; 11: 61-70
54. Hajilo S, Shafiabadi A. Determining the effectiveness of Group Counseling Based on Cognitive-Behavioral Interventions (CBT) on anger control in first high school female students. Scientific Journal of Educational Research. 2016;37(1):1-20.
55. Sedaghat S, Moradi O, Ahmadian H. The effectiveness of anger cognitive behavioral group training on aggression of third grade aggressive female students in Baneh's high schools. Medical Science Journal of Islamic Azad Univesity. 2015;24(4):215-220.
56. Wheatley A, Murrihy R, Van Kessel J, Wuthrich V, Remond L, Tuqiri R, et al. Aggression management training for youth in behaviour schools: A quasi-experimental study. Youth Studies Australia. 2009;28(1):29.
57. Roustaei A, Abolghasemi Sh, Mohammadi Aria A, Saedi S. A comparison effect of training the anger management and medicine cure on aggression in prisoners. New Findings in Psychology. 2012; 7(21): 17-31.
58. Ghasmzadeh A, Jani S. The effectiveness of group Cognitive-Behavioral Therapy with problem solving training on anger self-regulation and feeling of loneliness. Thought & Behavior in Clinical Psychology. 2013;29(8): 67-89. (Persian)
59. Samadi Roshan Sh, Jafari D. The Effectiveness of Acceptance and Commitment (ACT) Therapy on Student Verbal Aggression;Third World Conference on Psychology and Educational Sciences, Law and Social Sciences at the beginning of the third millennium;1395
60. Soltani S, Right Joe R, Jahani, OA. Efficacy of acceptance and commitment therapy for controlling the anger of mothers with autistic children:Third International Conference on Recent Innovations in Psychology, Counseling and Behavioral Sciences;1395.
61. Hossein Mardi AA, Khalatbari J. Comparison of the effectiveness of cognitive-behavioral therapy (CBT) and Acceptance and Commitment Therapy (ACT) on the Rate of Anger in High School Students in Tehran. Pajouhan Scientific Journal. 2018;16(2):59-66.
62. Dor J. Comparison of ACT with CBT: Cognitive Failure against Reconstruction.(Fayzi A translation);Psychology and Life Advice Center Web Site: 2015 (cited 01 April, 2015).