



# Comparing the Effectiveness of Treatment Based on Acceptance and Commitment and Therapy Focused on Compassion on Cognitive Distortions of Adolescents with bad Parents

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## Abstract

**Background:** The study aimed to compare the effectiveness of acceptance and commitment therapy (ACT) and compassion-focused therapy (CFT) on cognitive distortions in adolescents living in difficult family situations.

**Methods:** The current study utilized a semi-experimental design with a pre-test, post-test, and follow-up, involving random assignment of subjects to experimental and control groups. Forty-five abused teenage girls from abusive homes in Mahabad city were selected. They were randomly assigned to two experimental groups (15 people each) and a control group (15 people). All subjects completed the Cognitive Distortions Questionnaire developed by Beck and Weissman (1987). The experimental groups received therapy sessions based on ACT by Efort and Forsis (2009) and CFT by Gilbert (2009), while the control group did not receive any intervention. The collected data were analyzed using mixed-measures analysis of variance (ANOVA) with SPSS version 27.

**Results:** The results indicated no significant difference between the effectiveness of ACT and CFT. Both therapies were found to have a positive and significant impact on reducing cognitive distortions in the participants.

**Conclusions:** The findings suggest that both ACT and CFT are effective therapeutic approaches in reducing cognitive distortions in adolescents from difficult family backgrounds.

**Keywords:** Acceptance and Commitment, Compassion, Cognitive Distortion, Adolescents, Bad Parents

## 1. Background

Family conditions are very important for children to have a healthy life. The family is an important aspect of the social environment (1). Based on this, family relationships affect not only children's development but also their mental and physical health throughout their lives (2). In today's societies, with the increase in divorce, poverty, addiction, accidents, etc., which are the consequences of the industrialization of human societies, the incidence of abuse and the number of abused children and adolescents has increased significantly (3). Adolescents who are under guardianship are people who have a guardian. However, due to reasons such as the absence of one of the parents, illness or disability of one of the parents, addiction, specific physical, mental, and behavioral diseases of the

parents, or the poor economic status of the family, it is not possible to maintain and support them properly (4).

Cognitive distortions are an important factor in directly affecting the subsequent abnormalities of people who have had negative experiences from how their parents are in charge (5, 6). Cognitive distortion is an exaggerated or irrational thought pattern that is involved in the initiation or continuation of psychological pathological states, such as depression and anxiety (7). Cognitive distortions are thoughts that cause people to misperceive reality. According to Aaron Beck's cognitive model, a negative view of reality, sometimes called negative schemas (or schemas), is a factor in the occurrence of symptoms of emotional dysfunction and poorer mental well-being. Specifically, negative thought patterns reinforce negative feelings

and thoughts (8). In difficult situations, these distorted thoughts can contribute to an overall negative view of the world and a mental state of depression or anxiety. According to hopelessness theory and Beck's theory, the meaning or interpretation that people make of their experience has an important influence on whether they will become depressed and whether they will experience severe, frequent, or prolonged episodes of depression (9).

It has been found that cognitive distortions are affected by the way parents care for adolescents, which is an important factor for later psychological problems and disorders (10-12). A study showed the positive effects of treatment based on commitment and acceptance on cognitive distortions of single women suffering from love trauma (13). Also, several studies have determined that self-compassion-based therapy can have a positive effect in reducing cognitive distortions in adults, divorced people, and post-traumatic stress sufferers (14-16).

So far, various treatment approaches, including treatment based on acceptance and commitment (17-19) and treatment focused on compassion (20), have been applied to different aspects of adolescent abuse. The main assumption in therapy based on acceptance and commitment is that people experience disturbing thoughts, emotions, and feelings, and their efforts to change or get rid of these experiences are ineffective, which sometimes leads to the aggravation of these disturbances. Finally, people turn to avoidance (21). Compassion focused therapy (CFT) is a system of psychotherapy developed by Paul Gilbert that integrates cognitive behavioral therapy techniques with concepts from evolutionary psychology, social psychology, developmental psychology, Buddhist psychology, and neuroscience (22). Compassion-focused therapy is based on a developmental neurocognitive approach to mental health problems. It focuses on four areas: Prior and historical experiences, basic fears, strategies for feeling safe, and unforeseen and unintended consequences and outcomes (23).

It was found that the cognitive distortions (10-12) of maltreated adolescents differ from other adolescents due to the type of parents they are exposed to. On the other hand, different treatments, such as acceptance and commitment-based therapy, as well as CFT, have been developed to work on abused adolescents. However, even these therapeutic approaches have

neglected to pay attention to the cognitive distortions of abused adolescents. In some cases, treatments based on acceptance, commitment, and compassion have been used to affect different groups' cognitive distortions and resilience. However, there is not much research history on these variables in the group of abused teenagers. In addition, as mentioned, the results of therapeutic approaches based on compassion, acceptance, and commitment on the dependent variables of the present study in different groups have been evaluated positively in most cases, and which of these two treatments can have more positive effects can be considered.

## 2. Objectives

The present study aims to answer the question of whether therapy based on acceptance and commitment and therapy focused on compassion have different therapeutic effects on cognitive distortions, self-restraint, and hyper-excitement of abused adolescents.

## 3. Methods

This study was a semi-experimental design with pre-test, post-test, and follow-up (2 months) phases and random assignment of subjects to experimental and control groups. The statistical population included all abused female adolescents aged 15 - 18 living in charitable homes in Mahabad city, approximately 120 individuals. From this population, 45 participants were selected using targeted sampling and randomly assigned to three groups: One receiving acceptance and commitment therapy (ACT) (15 participants), one receiving CFT (15 participants), and a control group (15 participants). All participants completed the Cognitive Distortions Questionnaire (24) during the pre-test, post-test, and follow-up stages. The ACT group received a treatment package consisting of 12 one-hour sessions (25), while the CFT group underwent 8 sessions of 90 minutes each (23).

### 3.1. Beck and Weissman Cognitive Distortion Questionnaire

The Cognitive Distortion Questionnaire, developed by Beck and Weissman in 1987, is a widely used cognitive style assessment tool in cognitive therapy studies in the U.S. The questionnaire contains 26 items rated on a 7-point Likert Scale. Various studies have reported internal consistency of 0.90 and reliability of 0.93 for the questionnaire. Beck and Weissman designed this scale

to assess the cognitive schemas of individuals with depression. In Iran, the reliability coefficient of the dysfunctional attitudes scale was found to be 0.95 after six weeks, with a Cronbach's alpha of 0.75 (26). Data analysis was conducted using mixed ANOVA with repeated measures and SPSS27.

#### 4. Results

All participants in this study were female, with a mean age of 16.60 years and a standard deviation of 3.02. Table 1 presents the mean and standard deviation of all study variables for the three groups (ACT, CFT, and control) across the pre-test, post-test, and follow-up stages.

This study's results highlight the potential effectiveness of ACT and CFT in reducing cognitive distortions in abused adolescents. Further analysis and follow-up will determine which therapeutic approach has the most long-lasting and significant impact on the psychological well-being of these individuals.

A mixed analysis of variance (ANOVA) test with repeated measurements was used to draw statistical inferences. Prior to conducting the test, all assumptions were checked and met. These assumptions included the normality of the data, the homogeneity of variance-covariance matrices, the homogeneity of the variances, and the equality of variances among the groups. Ensuring these assumptions were satisfied was crucial for the validity of the statistical inferences made from the analysis.

Based on Table 2 and the significant column, the null hypothesis (i.e., equality of mean) can be rejected because the significant value is smaller than the minimum probability of type 1 error (0.05). As a result, a significant difference exists between the dependent variables affected by the independent variable in the studied groups. Next, in Table 3, considering that the hypothesis of sphericity is not established, the Greenhouse-Geisser test was used to test the within-group effects and the influence of the independent variable on the dependent variables.

Based on the results of Table 3, the F value was found to be significant for the pre-test, post-test, and follow-up phases, particularly in the interaction between group and time for the criterion variables ( $P = 0.001$ ). This indicates a significant difference between the average scores across the pre-test, post-test, and follow-up stages.

Before addressing the main research question, to investigate the three specific research hypotheses regarding the effect of ACT and CFT on the criterion variables, the results of the comparative test using the Bonferroni correction are presented in Table 4. This correction ensures that multiple comparisons do not inflate the Type I error rate, providing more accurate results for the specific hypotheses tested.

The results of Table 4 show that the effect of ACT and CFT on the criterion variables is significant over time, and this effect remained in the follow-up study. Next, to investigate the difference in the effectiveness of ACT and CFT interventions and determine whether there is a significant difference between the effectiveness of these two treatments, we will investigate the difference in the effectiveness of these two therapeutic approaches in pairs based on the Bonferroni correction.

Based on the results of Table 5, it was found that the groups receiving ACT and CFT interventions showed significant improvements in all research variables compared to the control group (referred to as the "Gantrel group"). However, there was no significant difference between the ACT and CFT groups themselves across the research variables. This indicates that while both ACT and CFT were effective in addressing the cognitive distortions in the participants, neither treatment was more effective than the other.

#### 5. Discussion

The findings showed that ACT and CFT treatment had a significant effect on the research variables, and there is no significant difference between these two treatment approaches in this regard. However, it should be mentioned that there is no similar finding in the history of studies conducted in this field. The first point is that although CFT and ACT are distinct therapeutic approaches with different theoretical foundations and techniques, they share similarities in emphasizing mindfulness and acceptance (21). The second explanatory point is the treatment content of these two approaches, which have much in common. In both treatments, becoming aware of thoughts and feelings and ineffective behaviors that keep the person away from the desired outcome and values is emphasized. In both treatments, the person is pushed in a direction that focuses on one's role and not assigning roles to others, being aware of the impact of one's behavior on others and trying to correct it. In both treatment

**Table 1.** Descriptive Statistics of Research Variables

Variables and Groups	M			SD		
	Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
<b>Success-perfectionism</b>						
ACT	22.53	17.80	17.60	4.58	4.09	3.88
CFT	22.66	17.93	17.94	4.08	3.71	3.57
Control	22.53	22.73	22.74	4.50	4.33	4.74
<b>The need for approval from others</b>						
ACT	33.66	19.26	19.20	4.53	3.57	3.32
CFT	33.73	19.60	19.06	3.65	3.83	3.59
Control	23.80	24	24.06	4.44	4.40	4.60
<b>The need to please others</b>						
ACT	17.73	13.20	12.73	3.32	1.65	1.62
CFT	17.53	14.20	14	3.11	2.45	2.39
Control	17.93	17.93	17.94	3.51	2.96	3.65
<b>Vulnerability assessment-performance</b>						
ACT	20	15.70	15.40	2	1.58	1.68
CFT	19.80	15.83	15.73	1.56	1.62	1.57
Control	19.80	19.40	19.53	1.42	1.63	2.26
<b>Cognitive distortion (total score)</b>						
ACT	84.13	66.06	64.66	5.20	4.41	3.73
CFT	83.06	66.80	66.73	4.71	5.32	5.57
Control	84.06	83.46	83.86	7.69	7.69	8.60

Abbreviations: ACT, acceptance and commitment therapy; CFT, compassion-focused therapy.

**Table 2.** Results of Multivariate Tests (Wilks' Lambda)

Effect	Values	F	Sig.
Time	0.001	65.431	0.001
Group*time	0.016	6.095	0.001

methods, self-care and life, emphasis and exercises are determined (20). Third, both treatments have had many positive and promising effects. Both the treatment based on ACT (17-19) and the treatment based on CFT (20) showed promising positive results about the examined sample reported in the present study.

The results aligned with other findings in this field regarding the effect of ACT on cognitive distortions (6, 13, 18). In explaining the present study's findings, cognitive distortions are thoughts that cause people to misunderstand reality. According to Aaron Beck's cognitive model, a negative view of reality, sometimes called negative schemas (or schemas), is a factor in the occurrence of symptoms of emotional dysfunction and poorer mental well-being. In particular, negative thinking patterns reinforce negative feelings and thoughts. On the other hand, therapy based on

acceptance and commitment allows people to face their thoughts in a practical and fully active way and do this with behavioral and operational exercises (21). Treatment based on acceptance and action equips a person with behavioral solutions for cognitive distortions to put them to the test and become aware of the distortion in their thoughts, something that was previously doubtful without this therapeutic approach.

The results of the present study, based on the positive effectiveness of CFT on cognitive distortions, are in line with the limited research findings in this field (15, 16). According to Gilbert, a concern of CFT is using compassionate mind training to help people develop and work with experiences of inner warmth, safety, and peace through compassion and self-compassion (22). On the other hand, cognitive distortions are thoughts that cause people to misunderstand reality (8). Compassion-

**Table 3.** The Results of the Greenhouse-Geisser Test to Investigate Intragroup Effects

Variables and Source	TSS	DF	MS	F	P	$\eta$
<b>Success-perfectionism</b>						
Group	318.859	2	159.430	3.243	0.007	0.211
Time	292.548	1.306	224.076	88.746	0.001	0.674
Group*time	165.807	2.611	63.500	24.582	0.001	0.539
<b>The need for approval from others</b>						
Group	307.378	2	153.689	3.313	0.005	0.219
Time	247.244	1.593	155.214	113.974	0.001	0.731
Group*time	145.644	3.186	45.716	33.569	0.001	0.615
<b>The need to please others</b>						
Group	286.711	2	143.356	6.840	0.001	0.246
Time	225.244	1.360	165.640	71.142	0.001	0.629
Group*time	121.778	2.720	44.776	19.231	0.001	0.478
<b>Vulnerability assessment-performance</b>						
Group	187.511	2	93.756	3.390	0.001	0.389
Time	258.311	1.543	167.385	115.525	0.001	0.733
Group*time	103.111	3.086	33.408	23.057	0.001	0.523
<b>Cognitive distortion (total score)</b>						
Group	4247.881	2	2123.941	20.978	0.001	0.500
Time	4195.793	2	2047.896	405.712	0.001	0.906
Group*time	2000.519	4	500.130	96.720	0.001	0.822

**Table 4.** The Results of the Post Hoc Bonferroni Test of Research Variables in Three Stages

Variables and Times	Mean Difference	Std. Error	Sig.
<b>Success-perfectionism</b>			
Pre-test post-test	3.089	0.317	0.001
Pre-test follow-up	3.156	0.322	0.001
Post-test follow-up	0.067	0.143	1.000
<b>The need for approval from others</b>			
Pre-test post-test	2.778	0.239	0.001
Pre-test follow-up	2.956	0.252	0.001
Post-test follow-up	0.178	0.155	0.777
<b>The need to please others</b>			
Pre-test post-test	2.622	0.301	0.001
Pre-test follow-up	2.844	0.313	0.001
Post-test follow-up	0.222	0.149	0.432
<b>Vulnerability assessment-performance</b>			
Pre-test post-test	2.889	0.244	0.001
Pre-test follow-up	2.978	0.258	0.001
Post-test follow-up	0.089	0.151	1.000
<b>Cognitive distortion (total score)</b>			
Pre-test post-test	11.644	0.523	0.001
Pre-test follow-up	12	0.518	0.001
Post-test follow-up	0.356	0.384	1.000

focused therapy causes the person's focus to shift inward, so they do not consider themselves the culprit

of all problems at all times and cease this distortion. In Beck's cognitive triangle (1997), one of the cases in which

**Table 5.** Pairwise Comparison with Bonferroni's Post Hoc Test to Determine the Effect of the More Effective Method on Research Variables

Variables	(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Success-perfectionism	ACT	CFT	-0.200	1.00
	CFT	Control	3.156	0.012
	ACT	Control	3.356	0.010
The need for approval from others	ACT	CFT	0.089	1.00
	CFT	Control	-3.156	0.011
	ACT	Control	-3.244	0.009
The need to please others	ACT	CFT	-0.689	1.00
	CFT	Control	-2.689	0.010
	ACT	Control	-3.378	0.009
Vulnerability assessment-performance	ACT	CFT	0.558	1.00
	CFT	Control	-2.489	0.001
	ACT	Control	-2.511	0.001
Cognitive distortion (total score)	ACT	CFT	-0.578	1.00
	CFT	Control	-12.187	0.001
	ACT	Control	-11.600	0.001

Abbreviations: ACT, acceptance and commitment therapy; CFT, compassion-focused therapy.

a person experiences deep cognitive distortion is regarding themselves (6). Compassion focused therapy tries to soften this perception with self-compassion strategies and helps the individual avoid seeing themselves as the cause of all problems in a distorted way.

### 5.1. Conclusions

The study demonstrates the positive effectiveness of both ACT and CFT in addressing cognitive distortions in adolescents with difficult family circumstances. Both therapeutic approaches were equally effective in reducing cognitive distortions, providing evidence for their utility in this population.

### Footnotes

**Authors' Contribution:** Zahra Sajadzadeh is a PhD student and the author of this article (55%); Ali Khademi is the supervisor (40%); Mahin Etemadinia is a consultant professor (5%).

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