Research Paper

The Effectiveness of Acceptance-and-Commitment-Based Parenting Training on Mood and Anxiety in Children and Self-compassion in Parents

Elaheh Ghorbanikhah[1], Mohammad Ali Mohammadyfar[2*], Shahab Moradi[1], MohammadAgha Delavarpour[2]

1. Department of Psychology, Semnan Branch, Islamic Azad University, Semnan, Iran.
2. Faculty of Psychology and Educational Sciences, Semnan University, Semnan, Iran.

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ABSTRACT

Objective: Depression and anxiety are common in children and a major cause of many illnesses and disabilities in this age group; Moreover, parents have the greatest impact on shaping the mental health and well-being of their children and there is a vast literature describing the importance of parenting factors in the development of depression and anxiety in children.

Methods: We used the experimental research design in this study. The sample consisted of 34 children with depression and anxiety who were randomly allocated into ACT on parenting (intervention) and control groups via the randomization method. The intervention group received eight 2-h sessions weekly. The revised child anxiety and depression scale, parent short versions and the self-compassion scale were administered in both groups. The analyses of covariance (ANCOVA) and the repeated measures of analysis of variance (ANOVA) were employed to determine the difference between the intervention and control groups on depression, anxiety, and self-compassion.

Results: ANCOVA and repeated measures ANOVA results showed clinically significant changes in depression and anxiety in children and self-compassion in parents in the intervention group ($P<0.001$). The Mean±SD of depression in the intervention group was 16.50±0.89 at baseline, which significantly decreased to 2.94±3.27 at post-measure and 2.25±3.35 at follow-up ($P<0.001$). The Mean±SD of anxiety was 18.19±1.87, which significantly decreased to 7.63±4.34 at post-measure and 7.06±4.52 at follow-up ($P<0.001$). Additionally, the mean and SD score of self-compassion was 56.43±3.14 in pre-intervention, which significantly improved to 97.18±3.72 in post-intervention and 98.25±4.76 at follow-up ($P<0.001$).

Conclusion: The results show that ACT-based parenting is an effective treatment for depression and anxiety in children. This method also improves self-compassion in parents.

*** Corresponding Author:**
Mohammad Ali Mohammadyfar, Associate Professor.
Address: *Faculty of Psychology and Educational Sciences, Semnan University, Semnan, Iran.*
E-mail: *alimohammadyfar@semnan.ac.ir*

Highlights

- Depression and anxiety are common in children
- Parents have the greatest impact on shaping the mental health and well-being of their children;
- Self-compassion is the ability to treat oneself with care and understanding;
- ACT-based parenting is an effective treatment for depression and anxiety in children;
- ACT-based parenting method also improves self-compassion in parents.

Plain Language Summary

Depression and anxiety are common in children, which cause many illnesses and disabilities. Parents have the greatest impact on shaping the mental health and well-being of their children and there is a vast literature describing the importance of parenting factors in the development of depression and anxiety in children. Parents' psychopathology can be related to parenting and the psychopathology of the children which considers important factors in the psychological health of parents is self-compassion. Self-compassion is the ability to treat oneself with care and understanding, have a nonjudgmental understanding of inadequacies, accepting that imperfections and failures are normal and common aspects of humans. ACT-based parenting is an effective treatment for depression and anxiety in children. This method also improves self-compassion in parents.

1. Introduction

The global prevalence of depression and anxiety in children is estimated to range from 2.6% to 6.5% (Lindberg et al., 2020), and this rate is increasing (Charlson et al., 2019). According to the World Health Organization (WHO), depression and anxiety are among the top 5 causes of overall burden disease among children (Wegner et al., 2020; World Health Organization, 2018). Symptoms of depression and clinically related depressive disorders in children can have a significant negative impact on a person's psychosocial development (Ravens-Sieberer et al., 2007).

Common interventions for depression are medication and psychotherapy (Ryan, 2005). For example, selective serotonin reuptake inhibitors are the common pharmacological interventions for clinical depression; however, they have various side effects, such as weight gain and hypertension (Helmich et al., 2010). The side effect of these medications is similar in adults and children (Westergren et al., 2020).

Alongside depression, anxiety impacts children's lives as a negative emotion. Anxious children are more prone to psychological disorders, such as depression, anxiety disorders, and substance abuse later in life (Carnes et al., 2019). Also, anxiety can lead to negative impacts on many aspects of their life, including social, educational, and familial (Brendel & Maynard, 2014). Furthermore, childhood anxiety has a high comorbidity with depression, both of which lead to vulnerability in a critical period of life (Adler Nevo et al., 2014; James et al., 2015). Parents are important in the formation and maintenance of a child's anxiety through maladaptive strategies (Brendel & Maynard, 2014; Ginsburg & Schlossberg, 2002; Maid et al., 2008). The results of a meta-analysis performed by Brendel (Brendel & Maynard, 2014) showed that parent-child interventions appear more effective in treating childhood anxiety than child-focused individual and group cognitive-behavioral therapy (CBT).

Parents' psychopathology can be related to parenting and the psychopathology of the children (Berg-Nielsen et al., 2002; Vostanis et al., 2006). One of the important factors in the psychological health of parents is self-compassion. Self-compassion is the ability to treat oneself with care and understanding, have a nonjudgmental understanding of inadequacies, accepting that imperfections and failures are normal and common aspects of humans (K. Neff, 2003). Self-compassion is an equally important or more effective target of intervention in improving parents' and children's mental health (Gouveia et al., 2016; Jefferson et al., 2020). Self-compassion of parents is correlated

with parenting quality, parental stress, child-directed criticism, and authoritarian or permissive parenting (Gouveia et al., 2016; Jefferson et al., 2020; Psychogiou et al., 2016).

Parenting programs are interventions that enhance the role of parenting in improving children's symptoms and health. These programs change the way parents relate to their children by changing parental beliefs, feelings, and behaviors in the moment-to-moment interchanges (Scott & Gardner, 2015). There are many parenting programs, such as positive parenting, CBT, mindful parenting, and acceptance and commitment therapy (ACT)-based parenting. Mindfulness-based interventions, when compared to CBT, can be an alternative approach for parents. Mindfulness-based interventions have various advantages, such as having a relatively simple approach compared to CBT.

ACT incorporates mindfulness and decreases experiential avoidance while increasing psychological flexibility (Brown et al., 2014; Hayes et al., 2006). In the context of parenting, ACT increases psychological flexibility and parental adjustment that lead to improving child behavior, while reducing dysfunctional parenting style (Whittingham et al., 2019). Parents are also equipped with new coping strategies along with psychological flexibility, non-judgmental attention to moment-to-moment experiences, and acceptance of internal and external experiences that make their reactions more adaptive (Brown et al., 2014; Sairanen et al., 2019). Furthermore, parents' cognition and cognitive fusion (for instance, "I cannot deal with my child.") are critical to the development and maintenance of maladaptive parenting, especially in contact with children (Coyne & Wilson, 2004). Cognitive fusion increases experiential avoidance and narrows the parent's behavioral repertoire, resulting in impractical behavioral patterns over time (Coyne & Wilson, 2004; Gould et al., 2018).

Depression and anxiety at early ages lead to many problems in all aspects of life. There are different approaches to parenting that all have a good effect on the child's upbringing; however, the problem is that parents' instability in techniques is because of the control of thoughts and feelings that lead to an increased need to learn a new technique and increase new parenting skills. Moreover, many studies have shown the efficacy of ACT for treating adult psychopathologies, such as depression and anxiety; nonetheless, there are fewer empirical studies on child populations (Swain et al., 2015). Therefore, further research is needed to examine the effectiveness of new and effective parenting approaches, such as ACT. Using this program in clinical practice can be useful for clinicians, parents, and children. Accordingly, the present study investigates the effectiveness of ACT-based parenting on mood and anxiety in children and self-compassion in parents.

2. Materials and Methods

Study participants

This was an experimental study that was conducted in 2021 in the Islamic Azad University of Semnan Branch, Semnan City, Iran. The participants included mothers who had children in the age range of 5 to 7 years with depression and anxiety in Tehran City, Iran. The purposive sampling method was used to collect the participants. In this regard, semi-structured interviews with mothers were conducted to evaluate the selection criteria in addition to completing the child anxiety and depression scale (parent form) to determine children's anxiety and depression. The sample size was calculated using the G*Power software with analysis of variance (ANOVA) and considering the effect size of 0.50, α of 0.05, and power of 0.80 in 34 participants of control and intervention groups.

Intervention protocol

The participants in the ACT-based parenting group were trained based on the ACT parenting program manual (Butler, 2015; Coyne & Murrell, 2009). ACT is composed of eight 2-h weekly group sessions, which were conducted for 2 months.

Study measures

Revised Child Anxiety and Depression Scale, Parent Short Version

The Revised Child Anxiety and Depression Scale, Parent short version (RCADS-P-25) was developed by Ebesutani et al. (Ebesutani et al., 2017). This scale has 25 terms and examines the components of anxiety and depression. This questionnaire is scored based on the Likert scale ranging from 0 to 3. The scale has a high internal consistency with Cronbach α of 0.83 for the depression subscale and 0.86 for the anxiety subscale. In another study conducted in Iran, the Cronbach α values for the total scores were reported at 0.92, and for anxiety and depression were obtained at 0.90 and 0.82, respectively (Rasouli & Minaei, 2017).

The Self-Compassion Scale

The Self-Compassion Scale (SCS) has 26 questions, rated on a 5-point Likert scale (K. D. Neff, 2003). SCS yields an overall score and includes 6 subscales as follows: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. The total scores are calculated by summing all 26 items (scores of self-judgment, isolation, and over-identification subscales are reversed), and higher scores indicate greater self-compassion (K. D. Neff, 2003). In a study by Neff (K. D. Neff, 2003), the internal consistency reliability of the 6 subscales was reported to range from 0.75 to 0.81, and the total score was obtained at 0.92. In another study conducted in Iran, the Cronbach α values for the total scores were reported at 0.70. Meanwhile, the test-retest reliability was obtained at 0.89 (MOMENI et al., 2014).

Study procedure

The participants included mothers who had children in the age range of 5 to 7 years who had depression and anxiety in Tehran City, Iran. The purposive sampling method was used to select the participants. They signed an informed consent letter. To reduce the dropout rate from the study, a complete explanation was given regarding the treatment conditions, the number of sessions, and the randomization of the treatment and control groups. Furthermore, to prevent dropout, the participants were thoroughly examined in terms of having enough time to attend the intervention sessions and the possibility of presence during the sessions.

Inclusion criteria

The inclusion criteria were signing the informed consent letter to participate in the research and along with a written consent; scoring above 25 in the RCADS-P-25; having 5 to 7 years of age for the children; having 18 to 50 years of age for the mothers; and having an education level of at least a diploma for mothers.

Exclusion criteria

The exclusion criteria were passing all the criteria for personality disorders and cases of interpersonal problems that interfere with group work, the existence of attention deficit hyperactivity disorder in the child, having a history of severe mental disorders (psychosis, delirium, cognitive disorders) or recent drug abuse in the mother, having participated in a psychological intervention at the same time as the study, and having received psychological treatment in the past 6 months.

After the registration of all participants, they were randomly allocated to ACT-based parenting and control groups by a simple randomization method.

Data analysis

We used the SPSS software, version 24 to analyze the data. To compare the demographic variables and differences between groups, the Chi-square test was used (see Table 1). Moreover, to evaluate differences in clinical characteristics between groups at pre-intervention, we used the independent t test. To evaluate the normality of variables, the Levene test of equality of variance was used. Finally, analyses of covariance (ANCOVA) and the repeated measures of analysis of variance (ANOVA) were used to compare the intervention and the control groups on depression, anxiety, and self-compassion.

3. Results

As shown in the study flow diagram (Figure 1), of the 34 participants, 32 completed the post-test and follow-up (16 in each group). One participant in each group did not complete the final analysis. The Chi-square test indicated that both groups were similar in terms of demographic variables (Table 1). The independent t test also indicated that both groups were similar in clinical characteristics at baseline (Table 2). Moreover, the Levene test for equality of variances (Table 2) revealed that depression, anxiety, and self-compassion in both groups were normally distributed ($P>0.05$).

The Mean±SD of depression (Table 3) in the intervention group at the baseline measure was 16.50±0.89, which decreased to 2.94±3.27 in post measure, and 2.25±3.35 in the follow-up. Table 4 shows the comparison of outcome measures based on ANCOVA. According to the presented data in Table 4 and Table 5, depression scores were significantly reduced in the intervention group from pre-test to post-test and follow-up. The effect size (Table 5) was 0.86 in the post-measure and 0.87 in the follow-up ($P<0.001$). Table 5 also demonstrates the results of repeated measures ANOVA to compare the changes in clinical symptoms by considering the time (baseline, post-intervention, and endpoint) and time×group.

The results of the repeated measure ANOVA for depression scores (Table 5) were $F=153.48$ and $P<0.001$, with an effect size of 0.83. The within-subject test results were $F=137.26$ and $P<0.001$ with an effect size = 0.82. In other words, the intervention group showed significant changes in depression over time.

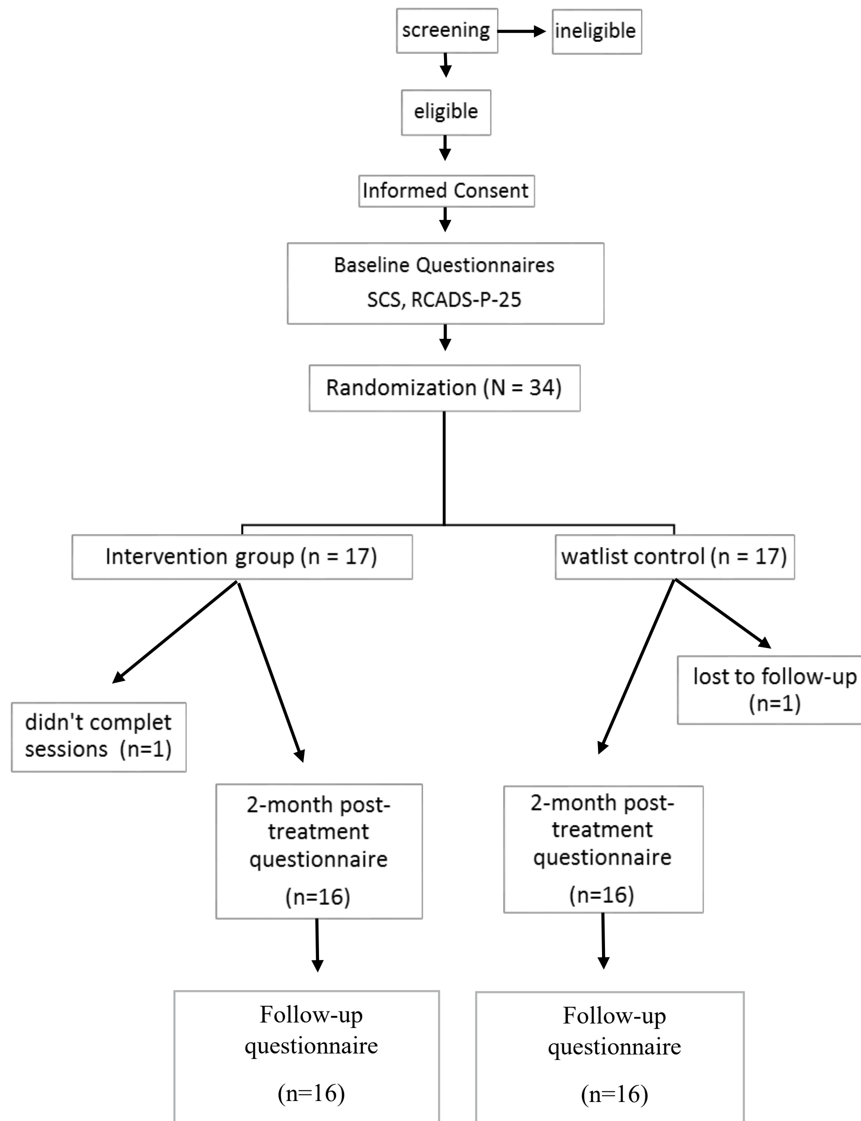

Figure 1. Study flow diagram

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The results also show that anxiety scores were significantly reduced in the intervention group from pre-test to post-test and follow-up (P<0.001). The Mean±SD of anxiety at baseline was 18.19±1.87, which significantly decreased to 7.63±4.34 at post measure, and 7.06±4.52 at follow-up. The effect size (based on ANCOVA results) was 0.48 at post-measure and 0.52 at follow-up (P<0.001).

The repeated measures ANOVA for anxiety score, with treatment as within-subjects factors, found a main effect of time (F=74.81, P<0.001, effect size=0.71) and a significant group×time interaction (F=26.06, P<0.001, effect size=0.46).

The results also showed that the total scores of self-compassions with positive subscales, including self-kindness, common humanity, and mindfulness have increased in the intervention group (P<0.001). Total self-compassion in the intervention group was 56.43±3.14 at baseline, which significantly improved to 97.18±3.72 at post-test, and 98.25±4.76 at follow-up (P<0.001).

Additionally, the Mean±SD of self-kindness, common humanity, and mindfulness were respectively 10.50±1.31, 9.93±1.12, and 9.62±1.45 at baseline measure, which significantly improved to 17.81±1.55, 15.50±1.31, and 15.43±1.75 after the intervention, and 18.93±2.08, 15.25±1.77, and 15.18±1.47 after a 3-month follow-up (P<0.001).

Table 1. Demographic characteristics of the participants

Variables		Mean±SD/No.		P
		ACT	WLC	
Age of children (y)		5.93±1.18	5.93±0.92	1.000*
Age of mothers (y)		37.18±4.41	36.68±3.78	0.733*
Children's gender	Boy	7	7	1.000**
	Girl	9	9	
Education level of the mother	Diploma	1	6	0.185**
	Associate	2	1	
	Bachelor	9	7	
	Master	4	2	
	PhD	0	0	
Marital status	Married	16	16	1.000**
	Single	0	0	
	Divorced	0	0	
	Widow	0	0	
Occupation	Have a job	2	2	1.000**
	Housewife	14	14	

ACT, acceptance and commitment therapy; WLC, waitlist control group; SD, standard deviation

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*Independent samples t-test; **Chi-square test

Table 2. Levene test of equality of error variances and independent t-test for equality of means

Variables	Subscales	Levene Test of Equality of Variances, Sig.			Independent t Test for Equality of Means in the Baseline, Sig. (2-Tailed)
		Pre-test	Post-test	Follow-up	
Depression	Depression	0.140	0.277	0.156	0.252
Anxiety	Anxiety	0.232	0.441	0.256	0.637
Self-compassion	Self-kindness	0.433	0.370	0.116	0.729
	Common-humanity	0.437	0.877	0.604	0.358
	Mindfulness	0.577	0.771	0.994	0.404
	Self-judgment	0.143	0.959	0.891	0.299
	Isolation	0.092	0.167	0.460	0.224
	Overidentified	0.718	0.280	0.105	0.462
	Total	0.551	0.367	0.833	0.672

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Table 3. Mean and standard deviation

Variables	Subscales	Groups	Mean±SD		
			Pre-test	Post-test	Follow-Up
Depression	Depression	ACT	16.50±0.89	2.94±3.27	2.25±3.35
		WLC	17.00±1.46	16.81±2.25	16.44±1.89
Anxiety	Anxiety	ACT	18.19±1.87	7.63±4.34	7.06±4.52
		WLC	18.56±2.52	15.63±4.25	15.88±4.36
Self-compassion	Self-kindness	ACT	10.5±1.31	17.81±1.55	18.93±2.08
		WLC	10.31±1.70	10.56±2.12	11.50±1.54
	Common humanity	ACT	9.93±1.12	15.50±1.31	15.25±1.77
		WLC	9.56±1.15	9.75±1.12	9.25±1.69
	Mindfulness	ACT	9.62±1.45	15.43±1.75	15.18±1.47
		WLC	9.18±1.47	9.5±1.71	9.06±1.76
	Self-judgment	ACT	21.18±1.60	12.18±1.32	11.75±1.34
		WLC	20.68±1.01	20.06±1.34	19.56±1.20
	Isolation	ACT	12.43±0.81	8.12±1.40	8.50±1.54
		WLC	12.93±1.38	13.25±1.69	13.93±1.34
	Over-identification	ACT	15.93±1.69	9.31±1.13	8.87±1.45
		WLC	15.50±1.63	15.31±1.40	15.31±1.35
	Total	ACT	56.43±3.14	97.18±3.72	98.25±4.76
		WLC	56.00±2.63	59.18±2.90	59.25±4.62

ACT: acceptance and commitment therapy; WLC: waitlist control group; SD: standard deviation.

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Furthermore, the scores of self-judgment, isolation, and over-identification in the intervention group were respectively 21.18±1.60, 12.43±0.81, and 15.93±1.69 at baseline, which significantly decreased to 12.18±1.32, 8.12±1.40, and 9.31±1.13 after the intervention, and 11.75±1.34, 8.50±1.54, and 8.87±1.45 at follow-up ($P<0.001$).

The effect size for total self-compassion was 0.97 post-intervention and 0.94 at the 3-month follow-up. For self-kindness, common humanity, mindfulness, self-judgment, isolation, and over-identification, the effect size was respectively 0.80, 0.85, 0.77, 0.90, 0.74, and 0.87 at post-intervention, and 0.81, 0.76, 0.79, 0.91, 0.78, and 0.88 at the 3-month follow-up. Moreover, the observed power was one for all self-compassion subscales.

Additionally, the results of repeated measures ANOVA for the total score of self-compassion, with treatment as within-subjects factors, found a main effect of time ($P<0.001$ and effect size=0.94) and a significant group×time interaction ($P<0.001$ and effect size=0.92).

4. Discussion

This study examined the effectiveness of ACT-based parenting on depression and anxiety in children and self-compassion in parents. The results showed statistically significant changes in depression and anxiety in children and self-compassion in parents compared to the control group. Symptoms of anxiety significantly declined in the experimental group after the intervention and follow-up. These findings were similar to the results of previous research on the ACT in treating children's anxiety (Burke,

Table 4. Comparison of outcome measures at pretreatment to post-treatment and follow-up based on analysis of covariance

Variables	Subscales	Sources	F	Sig.	Effect Size	Observed Power
Depression	Depression	Post-intervention	180.12	0.000	0.861	1.000
		Follow-up	203.39	0.000	0.875	1.000
		Multivariate tests	107.80	0.000	0.885	1.000
Anxiety	Anxiety	Post-intervention	26.81	0.000	0.480	0.999
		Follow-up	32.11	0.000	0.525	1.000
		Multivariate tests	15.53	0.000	0.526	0.998
Self-compassion	Self-kindness	Post-intervention	117.28	0.000	0.802	1.000
		Follow-up	126.55	0.000	0.814	1.000
		Multivariate tests	138.52	0.000	0.908	1.000
	Common humanity	Post-intervention	168.19	0.000	0.853	1.000
		Follow-up	92.30	0.000	0.761	1.000
		Multivariate tests	99.05	0.000	0.876	1.000
	Mindfulness	Post-intervention	98.81	0.000	0.773	1.000
		Follow-up	110.43	0.000	0.792	1.000
		Multivariate tests	56.91	0.000	0.803	1.000
	Self-judgment	Post-intervention	259.76	0.000	0.900	1.000
		Follow-up	323.76	0.000	0.918	1.000
		Multivariate tests	183.88	0.000	0.929	1.000
	Isolation	Post-intervention	85.09	0.000	0.746	1.000
		Follow-up	107.76	0.000	0.788	1.000
		Multivariate tests	62.16	0.000	0.816	1.000
	Over-identification	Post-intervention	210.00	0.000	0.879	1.000
		Follow-up	217.74	0.000	0.882	1.000
		Multivariate tests	131.49	0.000	0.904	1.000
	Total score	Post intervention	1025.75	0.000	0973	1.000
		Follow-up	539.78	0.000	0.949	1.000
		Multivariate tests	546.02	0.000	0.975	1.000

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Table 5. Comparison of outcome measures at pretreatment to post-treatment and follow-up based on repeated measure of analysis of variance

Variables	Subscales	Tests of Within-Subjects Effects				
		Sources	F	Sig.	Effect Size	Observed Power
Depression	Depression	Time	153.48	0.000	0.836	1.000
		Time×group	137.26	0.000	0.821	1.000
Anxiety	Anxiety	Time	74.81	0.000	0.714	1.000
		Time×group	26.06	0.000	0.465	1.000
Self-compassion	Self-kindness	Time	63.37	0.000	0.679	1.000
		Time×group	42.15	0.000	0.584	1.000
	Common humanity	Time	45.94	0.000	0.605	1.000
		Time×group	47.48	0.000	0.613	1.000
	Mindfulness	Time	41.73	0.000	0.582	1.000
		Time×group	38.69	0.000	0.563	1.000
	Self-judgment	Time	216.47	0.000	0.878	1.000
		Time×group	146.97	0.000	0.830	1.000
	Isolation	Time	23.68	0.000	0.441	1.000
		Time×group	42.17	0.000	0.584	1.000
	Over-identification	Time	122.99	0.000	0.804	1.000
		Time×group	110.26	0.000	0.786	1.000
	Total score	Time	518.31	0.000	0.945	1.000
		Time×group	379.21	0.000	0.927	1.000

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2010; Hancock et al., 2018; Lee et al., 2008; Semple et al., 2010). Additionally, symptoms of depression improved in the intervention group after the intervention and follow-up. These findings are comparable to other similar studies on depression in children, such as the study by Moghanloo et al. (Moghanloo et al., 2015), which indicated that ACT was effective for depression in children with diabetes in the age range of 7 to 15 years. Furthermore, the self-compassion scores of parents significantly changed in the ACT group. These results were comparable to other studies on acceptance-based interventions on self-compassion, such as the study by Yadavaia et al. (Yadavaia et al., 2014), which showed that self-compassion improved in the ACT group.

These changes can be explained by the processes of ACT. From the ACT perspective, experiential avoidance and psychological inflexibility in parents lead to maladaptive parenting behaviors that influence the child's psycho-emotional development and psychopathology (Flujas-Contreras & Gómez, 2018; Whittingham, 2014). In contrast, the parent's psychological flexibility is associated with adaptive parenting practices and leads to decreased internalization problems in children, such as depression and anxiety (Brassell et al., 2016). Additionally, parents learned to be mindful of daily moments and include the time of interaction with their children. Mindfulness has been described as an individual's characteristic of having nonjudgmental awareness of one's present moment internal (thoughts, emotions, and bodily sensations) and external experiences (Kabat-Zinn,

2009). Mindfulness increases emotional awareness and emotion regulation skills that decrease stress and mood dysfunction (Bishop et al., 2004; Khazraee et al., 2018). Furthermore, mindfulness brings moment-to-moment awareness to the parent-child relationship, increases self-regulation in the parent, and brings compassion and nonjudgmental acceptance to their parenting interactions (Duncan et al., 2009). Finally, values-directed behavior helps parents create a meaningful life while in contact with their children (Whittingham & Coyne, 2019).

5. Conclusion

According to this study, ACT-based parenting is an effective intervention in treating depression and anxiety in children. The results also support the potential utility of the ACT parenting model for improving the self-compassion of parents. This approach provides a promising basis for further therapy development and challenges us to reconsider the parenting experience. Furthermore, this study reinforces the value of an ACT parenting intervention in improving parent and child outcomes.

Study limitations

One limitation was the gender of the parents in the study sample. All parents were female and this led to the limited interpretation of results to the other gender parents. Another limitation was the relatively small sample size. Future investigations should attempt to replicate and extend these results and tests of generalizability to other parents' genders and have a bigger sample size. Furthermore, the study's strength was an evaluation of the efficacy of a new intervention and techniques in the field of parenting.

Ethical Considerations

Compliance with ethical guidelines

The Research Committee of the Azad University of Semnan branch, Semnan City, Iran, approved this study (Code No.: IR.IAU.SEMNAN.REC.1400.024).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declare no conflict of interest.

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