

The Effect of Acceptance and Commitment Therapy on Sense of Guilt, Self-blame, and Depression in Mothers of Individuals with Autism Spectrum Disorders

Hadi Rashidi-Fard¹ (MSc), Sona Foulad-Vanda² (MSc), Negar Bahremand-Nia³ (MSc), Shokooh-Sadat Vajedi⁴ (MSc), Hamid Jalili-Moghadam⁵ (MSc)

1. Department of Psychology, Islamic Azad University, Kermanshah Branch, Kermanshah, Iran
2. Department of Psychology, Islamic Azad University, Yasouj Branch, Yasouj, Iran
3. Department of Psychology, Islamic Azad University, Zarand Branch, Zarand, Iran
4. Department of Educational Sciences and Islamic Psychology, Quran and Atrat University of Isfahan, Iran
5. Department of Psychology, Islamic Azad University, Zanjan Branch, Zanjan, Iran

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Corresponding Author:

Hamid Jalili-Moghadam,
Department of Psychology,
Islamic Azad University,
Zanjan Branch,
Zanjan
Iran

E-mail: Hamidjm1378@gmail.com

Abstract

Introduction: Autism Disorder (ASD) can greatly burden parents of children with autism. The aim of this study was to investigate the efficacy of Acceptance and Commitment Therapy (ACT) training in alleviating the feelings of guilt, self-blame, and depression experienced by mothers who have children with autism.

Method: This study had a semi-experimental design with pre-test-post-test and follow-up phases (lasting three months). The target population included all mothers of children with autism spectrum disorders who 27 of them were selected by purposive sampling method among members of the Iranian Autism Association during July to November 2023 in Tehran. Educational interventions based on the ACT approach were provided for eight sessions, each lasting for 90 minutes, with one session per week. The research utilized the Guilt Inventory Questionnaire (GIQ), the Cognitive Emotion Regulation Questionnaire (CERQ), and The Beck Depression Inventory-Second Edition (BDI-ii) as measurement tools. The collected data were analyzed using SPSS version 27 software and multivariate covariance analysis.

Results: According to findings, significant variations were observed in the variables of feeling guilty, depression, and self-blame during the pre-test, post-test, and follow-up stages ($P < 0.001$).

Conclusion: It appears that using the ACT approach can be beneficial in reducing symptoms and could potentially alleviate feelings of guilt and depression in mothers of children with autism.

Keywords: Acceptance and Commitment Therapy, Guilt, Self-blame, Depression, Mothers, Autistic Children

Introduction

Autism Spectrum Disorder (ASD) is a prevalent neurodevelopmental disorder that commonly presents in early childhood and encompasses a broad range of characteristics, such as deficiencies in social interaction and communication, as well as rigid and repetitive behaviors [2]. The Centers for Disease Control and Prevention has determined that the incidence of ASD is approximately 1 in 59 births since 2018, with boys being affected four times more frequently than girls [3]. The presence of a child with ASD can have a profound impact on parents, family members, educators, and society at large. This impact is particularly significant for mothers, who often have direct communication with their children and can consequently face detrimental effects on their physical and mental well-being [4]

Parents of children with ASD not only face high levels of stress but also are susceptible to mental health issues, as they exhibit elevated levels of depressive symptoms and psychological distress [5]. After going through the initial shock, denial, grief, or depression related to accepting their child's diagnosis, some parents naturally experience feelings of guilt and shame [6]. Marcinechová et al.'s research in 2023 uncovered the presence of guilt, shame, and stress among parents of children with ASD [7]. Furthermore, Ghoreishi et al.'s findings in 2019 revealed that 51% of the stress experienced by parents with autistic children can be attributed to self-conscious emotions such as shame and guilt, as well as the functioning of the family unit [8]. Moreover, the increase in destructive rumination among parents of autistic children leads to self-blame and blaming others, which are considered ineffective coping mechanisms [9]. Additionally, research conducted by Da Paz NS et al. in 2018 demonstrated that mothers with autistic children have poorer mental health and life satisfaction, along with heightened levels of self-blame and hopelessness about the diagnosis [10].

Numerous parents of ASD children experience elevated levels of stress and anxiety, as well as fewer fulfilling relationships. This situation undoubtedly influences their daily performance and behavior, leading to various coping mechanisms. Furthermore, parents of children with ASD frequently face the risk of depression, as research has indicated [11]. For instance, approximately 30-35% of mothers of autistic children have displayed elevated scores in depression tests and exhibit clinical symptoms related to depression [5]. Amirian et al. (2020) conducted a study that found mothers of children with ASD suffer from stress, anxiety, and depression [12]. Correspondingly, Megreya et al. (2020) discovered that mothers of autistic children encounter heightened levels of anxiety and depression [12, 13]. Additionally, Zhou et al. identified that mothers of autistic children exhibit significant symptoms of anxiety and depression [14]. Another investigation highlighted that parents of autistic children are more prone to anxiety and depression and have a lower quality of life [15].

Based on the information provided, it is crucial to alleviate psychological distress in family members, particularly mothers of children with ASD. The Acceptance and Commitment Therapy (ACT) approach is a treatment option that can effectively address the psychological, emotional, and physical difficulties faced by parents of individuals with ASD [16]. ACT is a psychotherapy method within the CBT umbrella that combines mindfulness procedures and behavioral change techniques. In ACT, an individual avoids situations that are perceived as stressful or unpleasant, including thoughts and emotions [17]. Azadi et al. conducted a study that demonstrated the efficacy of ACT in reducing depression and irrational beliefs among women with autistic children in Gachsaran [18]. Another research highlighted the beneficial effects of ACT on the mental well-being of mothers with autistic children [18]. In addition, Salimi et al. discovered that ACT significantly influenced positive refocusing strategies, positive reappraisal, and self-blame in mothers of children

with ASD [19]. Furthermore, another study revealed the impact of ACT in reducing stress and depression and enhancing the physical health of mothers with autistic children [20]. When dealing with a disability or chronic illness, the family, particularly when it involves a child, is essential in helping with the situation. Taking care of a child with a disability or chronic illness can be very challenging for any family [21]. Hence, it is crucial to focus on strategies for diminishing negative emotions in parents of autistic children, particularly in mothers. Although this matter holds significant value, no studies were identified that comprehensively investigated interventions aimed at reducing guilt, self-blame, and depression among mothers with autistic children. Consequently, there exists a research gap in this area, and the present study stands as one of the pioneering research endeavors aimed at assessing the effectiveness of the ACT approach in alleviating guilt, self-blame, and depression among mothers of autistic children.

Method

The present study is classified as applied and semi-experimental, aiming to assess the effectiveness of ACT approach training for mothers of children with ASD spectrum disorders. The research consists of pre-test, post-test, and follow-up phases, spanning over a three-month period. The control group comprises mothers who did not receive training, while the experimental group included those who did. The research was conducted in Tehran during the summer and fall of 2023. The target population included all mothers who were members of the Iranian ASD Association and had children with ASD spectrum disorders.

The study included a statistical sample of 30 individuals, with 15 in the experimental group and 15 in the control group. The participants were mothers of children with ASD spectrum disorder, selected through purposive sampling and randomly assigned to the two groups using coin tossing. The adequacy of the sample size was determined using G-Power software, with a significance level of 0.05, effect size of 1.11, and power test of 0.90. According to the formula, the ideal sample size for each group was 26. However, to account for potential attrition during the research process, the researcher chose to include 30 individuals.

To be eligible for the study, individuals must have been at least 20 years of age, possess the physical and mental capabilities required to partake in the research training sessions, be affiliated with the Iranian ASD Association, provide informed consent, and have not previously participated in comparable training programs. Those who exhibit any form of disorders or are responsible for the care of autistic children, making it difficult for them to regularly attend educational sessions, engage in concurrent treatment programs, fail to attend more than two face-to-face sessions, or choose to withdraw from the study are excluded from the research.

After obtaining the necessary approval from their university, the researchers first consulted the Iranian ASD Society. They then posted an announcement on the ASD

Association's social media platforms following the necessary coordination. Subsequently, the researchers selectively chose mothers who met the essential criteria for participation in the study from those who submitted their information. Out of the mothers, 44 cases were selected by the researchers. The reason for opting for a larger sample size was the likelihood of potential dropouts due to having children with special needs. During the initial face-to-face interview, conducted at one of the ASD Association's offices, the research objectives and ethical principles were explained to the patients, and any queries they had were addressed. In this stage, individuals were carefully assessed, and those who lacked the requirements to participate in the research, such as not having the time and conditions to attend training sessions, were excluded from consideration. Furthermore, a few individuals declined to continue their participation. Ultimately, the researchers opted for a sample size of 30 individuals. Subsequently, these individuals underwent a pre-test utilizing various research instruments. During the pre-test phase, data was collected from all 30 participants. Afterwards, the individuals were assigned to different groups through a random selection process to prepare for their training. The experimental group attended educational interventions based on the ACT approach for eight sessions lasting for 90 minutes, with one session each week. These interventions were conducted in one of the association's offices, following the training methods outlined by Hayes and Lillis in 2012 [22]. On the other hand, the control group did not receive any program or intervention.

Once the meetings concluded, a post-test was administered to both groups. Following a span of three months, the variables were reassessed by the researcher, and the outcomes were compared. The mothers in the control group were also trained after the research. Two participants in the experimental group and one in the control group dropped out. Ethical considerations included informed consent and confidentiality were considered in this study.

The tools used in this study were as follows:

Guilt Inventory (GI): The guilt assessment questionnaire, developed by Kugler and Jones in 1992, consists of 45 items [1]. The inventory includes three subscales, namely characteristics of guilt, state of guilt, and moral standards, and responses are scored using a five-point Likert scale ranging from completely agree to disagree. The scoring method involves adding the obtained scores to calculate the total scale score. Scores between 45 and 75 indicate low guilt, scores between 75 and 150 indicate average guilt and scores above 225 indicate high guilt. In Iran, a test-retest reliability study conducted over ten weeks reported reliability coefficients of 0.72 and 0.81, respectively [23]. The present study found the Cronbach's alpha coefficient for this scale to be 0.71.

Cognitive Emotion Regulation Questionnaire (CERQ): In 2006, Garnefski and Kraaij developed a 36-question

self-assessment questionnaire that aims to measure the cognitive regulation strategies of emotions and various aspects such as self-blame, cessation of blame, focus on thinking/ruminating, and catastrophe [24]. The questionnaire utilizes a five-point Likert scale ranging from 1 (never) to 5 (always) for scoring. It consists of nine main factors, namely, self-blame (3 items), other blame (4 items), rumination (5 items), catastrophizing (4 items), acceptance (4 items) as negative factors, and positive refusal (8 items) and positive reappraisal (4 items) as positive factors. In this study, only the self-blame subscale questions were employed. The Cronbach's alpha coefficient for this scale was found to be 0.89 during the investigation in Iran [25]. For the current research, the Cronbach's alpha coefficient for this scale was determined to be 0.81.

The Beck Depression Inventory-Second Edition (BDI-ii): The questionnaire developed by Beck et al. in 1996 was created to assess depression and depressive symptoms in individuals [26]. Comprising of 21 questions, each question is assigned a score ranging from 0 to 3. A score of 0 to 13 indicates mild depression, 14 to 19 indicates moderate depression, 20 to 28 indicates moderate depression and 29 to 63 indicates severe depression. The total score ranges from 0 to 63. Becket al. reported a concurrent validity of 0.79 and a test-retest validity of 0.67 for this questionnaire. In Iran, a study reported a Cronbach's alpha coefficient of 0.92 [26]. The researcher of this study obtained a Cronbach's alpha coefficient of 0.81 for the scale.

This study utilized descriptive statistics, including mean and standard deviation, to examine research hypotheses. The analysis was conducted using Kruskal-Wallis H and analysis of covariance tests in SPSS version 27 software at a significance level of 0.05. The normal distribution was assessed using the Kolmogorov-Smirnov test, while the homogeneity of variances was evaluated using Levene's test. Furthermore, a Bonferroni post hoc test was employed to compare the means.

Results

In this research, the information about the participants was collected in three stages of pre-test, post-test and follow-up in the experimental and control groups on two groups of 27 people. In terms of employment status, the participants were divided into two groups: housewife and employed. Similarly, in terms of Gender of the child, they were divided into two groups with male children and female children. In terms of age, they were divided into three groups: 20-30 years old, 31-40 years old and 41 years old and above. In terms of education, the participants were divided into six groups: high school, diploma, associate degree, bachelor's degree, master's degree, and P.H.D. In addition, in terms of marital status, they were divided into two groups, divorced and married (only four of the participants were divorced). The results of the Chi-Square test also showed that the difference between the participants in terms of demographic variables was not significant ($p > 0.05$).

Table 1. Summary of Therapy Sessions based on Acceptance and Commitment

Session	
First session	The purpose of the meeting: providing information about the intervention and clearing the doubts of the participants. The meeting was held in the office at the Autism Society. The implementation was done by the researcher and colleagues. introduction, description of the structure and objectives of the meetings, implementation of the pre-test, creating motivation for participation among the members, familiarization and general introduction of the approach to change and familiarization with the basics of the acceptance and commitment approach (conducting the pre-test and introduction and establishing a good relationship)
Second session	The purpose of the second session was to examine the experiences of the participants and present the main concepts of the intervention method. In this meeting, there was a discussion about the experiences and evaluation of mothers with autistic children, the creation of creative helplessness and familiarization of the members with the concepts of acceptance and commitment approach.
Third session	The purpose of the third cognitive discontinuity session was to teach and practice mindfulness techniques. Note 1: Mothers with autistic children should try to allocate time to experience the surrounding environment with all their senses. To gather and concentrate the senses of touch, hearing, sight, smell and taste with all their power in the moment. 2. Living in the moment: Mothers with autistic children should try to be deliberately and fully aware of everything they do, open, accepting and full of intelligence with the aim of finding happiness (however small) in simple pleasures. 3. Self-acceptance: mothers with autistic children should treat themselves the same way they would treat a good friend, and explanations and exercises were provided about this method. Other exercises included: focusing on your breathing.
Fourth Session	The purpose of the fourth session was to label worrying thoughts; monitoring thoughts; practice watching. In this session, methods for people were taught, including: Mothers of children with autism were either given the task of labeling without trying to moderate, change, or avoid the thoughts in their head. They were asked if they could notice the distance between themselves and their thoughts. By labeling thoughts, they will find that they lose their power. Then they realize that they are not their own thoughts.
Fifth session	Continuing the training of looking at thoughts and training of acceptance and desire, contact with the present. The purpose of the fifth session was to emphasize acceptance skills. Acceptance skills during conversation, situational games and specific exercises and worksheets were presented. The whole idea was acceptance methods to promote letting go in mothers with autistic children. So that mothers can recognize that not all their thoughts need to be turned into action, especially thoughts that cause depression and stress in these mothers with special conditions. Acceptance strategies were provided to help mothers distinguish between constructive and unconstructive thoughts, feelings, and behavior patterns.
Sixth session	Self-introduction training as the context of the session.
Seventh session	Introducing values, introducing the difference between value and goal, practicing measuring values and determining values.
Eighth session	Understanding the nature of commitment and desire, determining suitable patterns with values, summarizing the treatment and implementing the post-test.

Table 2. Demographic Characteristics in Experimental and Control Groups

Variables	Groups	Examination Group	Percent	Control group	Percent	Chi-Square	P
Employment status	Housewife	8	53.3%	7	46.7%	0.36a	0.547
	Employed	5	61.5%	7	50.0%		
	Total	13	48.1%	14	51.9%		
Gender of the child	Boy	5	45.5%	6	54.5%	0.05a	0.816
	Girl	8	50.0%	8	50.0%		
	Total	13	48.1%	14	51.9%		
Age	20-30	6	42.9%	8	57.1%	0.36a	0.835
	31-40	5	55.6%	4	44.4%		
	+41	2	50.0%	2	50.0%		
	Total	13	48.1%	14	51.9%		
Education	High school	2	50.0%	2	50.0%	0.07a	1.000
	Diploma	4	44.4%	5	55.6%		
	Associate Degree	4	50.0%	4	50.0%		
	Bachelor's degree	1	50.0%	1	50.0%		
	Master's degree	1	50.0%	1	50.0%		
	P.H.D	1	50.0%	1	50.0%		
Marital status	Total	13	48.1%	14	51.9%	1.35a	0.244
	Divorced	3	75.0%	1	25.0%		
	Married	10	43.5%	13	56.5%		
	Total	13	48.1%	14	51.9%		

In the next step, the researcher examined the mean and standard deviation of the research variables in the three stages of pre-test, post-test and follow-up in the experimental and control groups, and then based on the analysis of covariance, examined the differences between the groups (Table 3).

Based on the results presented in Table 3, there was no significant distinction observed in the average levels of self-blame, feelings of guilt, and depression between the experimental group and the control group before the experiment. However, there was a notable contrast in the average scores between the two groups after the experiment and during the follow-up period. Additionally, the average levels of self-blame, feelings of guilt, and depression were similar between the test group and the control group before the experiment but significantly differed between the groups in the post-test and follow-up stages. The substantial effect size of 81.2% demonstrates a considerable distinction between the two groups. Moreover, the Within-group P-value confirms a significant difference between the pre-test, post-test, and

follow-up stages ($p < 0.001$).

Based on table 4, it can be shown that there is a significant difference between the mean of the feel guilty variable in the three periods of pre-test, post-test and follow-up ($P < 0.01$) and the act approach has reduced the amount of feel guilty and the lasting effects on the feel guilty variable.

Also, no significant difference was observed between the mean of self-blame variable between pre-test and post-test ($P = 0.093$). However, there was a significant difference between pre-test and follow-up ($P = 0.002$). Likewise, no significant difference was found between the two stages of the after-test and follow-up ($P = 0.144$) and it was found that the act approach reduced the amount of self-blame, and however, the act approach has lasting effects on the self-blame variable.

There was a significant difference between the mean of the depression variable in the pre-test, after-test and follow-up periods, and table 4 shows that the ACT approach has reduced the level of depression and had lasting effects on the depression variable.

Table 3. Mean ± SD of Research Variables in Experimental and Control Groups

Variables	Groups	Mean ± SD			Between group test P	Within group P	Partial Eta Squared
		Pre-test	Post-test	Follow up			
Feel guilty	examination	135.61±8.68	85.61±6.41	64.07±8.17	$p < 0.001$	$p < 0.001$	0.90
	Control	137.07±6.84	133.5±8.92	133.57±8.44			
Self-blame	examination	8.23±1.2	6.0±1.47	4.23±1.23	$p < 0.001$	$p < 0.001$	0.42
	Control	8.21±1.188	8.28±1.38	8.14±1.46			
Depression	examination	58.0±1.87	36.61±4.25	24.38±8.21	$p < 0.001$	$p < 0.001$	0.81
	Control	57.21±2.75	56.0±5.37	56.85±5.14			

Table 4: Bonferroni's Post Hoc Test

Variables	(I) TIME	(J) TIME	Mean Difference	Std. Error	P
Feelings of guilt	Pre- test	After-test	25.92*	4.96	$p < 0.001$
		Follow up	36.2*	7.02	$p < 0.001$
	After-test	Follow up	10.33*	3.08	0.007
Self-blame	Pre- test	After-test	1.03	0.45	0.093
		Follow up	1.96*	0.51	0.002
	After-test	Follow up	0.92	0.44	0.144
Depression	Pre- test	After-test	10.92*	2.20	$p < 0.001$
		Follow up	16.37*	3.53	$p < 0.001$
	After-test	Follow up	5.44*	1.78	0.016

Discussion

This study aimed to examine the impact of ACT approach training on reducing guilt, self-blame, and depression in mothers with autistic children. The findings indicated that the ACT approach significantly decreased guilt and had long-term effects on this aspect. Similarly, it was observed that the ACT approach reduced self-blame, although its effects were not long-lasting. Furthermore, the ACT approach was found to effectively reduce depression levels in mothers with autistic children, with enduring effects on this variable. The present study's focus on examining the impact of the ACT approach on reducing guilt in mothers with autistic children aligns implicitly with previous research, as evidenced by studies [27, 28]. One study found that therapy based on acceptance and commitment, which incorporated metaphors and emphasized values, led to a reduction in feelings of loneliness, shame, and guilt in women [27]. Rajabi et al.'s

study demonstrated the effectiveness of ACT in reducing guilt [28].

To explain this, it can be suggested that this treatment assists mothers of autistic children in becoming aware of the distressing thoughts they consistently experience, such as guilt. They learn about the dysfunctional nature of their current routine and prioritize actions that are important to them in life instead of solely reacting to it. This technique helps mothers realize that when they do things for their children, the outcome does not matter as much as the goal itself, and they do their best without becoming disheartened. Mothers who undergo this treatment gain higher knowledge and self-acceptance, leading to a comprehensive understanding of their strengths and weaknesses. This fosters greater self-satisfaction and forms the foundation for increased tolerance of negative emotions [29].

In this therapy, individuals master the art of embracing

their feelings rather than distancing themselves from them. They also place a stronger emphasis on their thoughts and thinking process by practicing mindfulness and linking them to purposeful activities. For mothers of autistic children, this treatment reduces the avoidance of feelings associated with social stigma, allowing them to deal rationally with this challenge. Consequently, accepting these negative feelings enhances the overall well-being of mothers [18]. Furthermore, regarding the impact of the ACT approach in diminishing self-blame among mothers with autistic children, this study aligns implicitly with previous research [30, 31]. A study stated that ACT significantly influences the redirection of positive strategy/planning, positive reinterpretation, and self-blame in mothers of autistic children [31]. Additionally, the results of another study indicate that the therapeutic approach centered on commitment and acceptance has a positive and significant effect in reducing self-blame, rumination, catastrophic thinking, and blaming others [30].

This research aligns with previous studies in finding that the ACT approach has a positive impact on reducing depression in mothers with autistic children [17, 19]. The results of this research show that ACT effectively reduces depression and irrational beliefs in women with autistic children [17]. Additionally, another study found that ACT has a beneficial effect on reducing stress and depression and improving the physical health of mothers with autistic children [19]. Furthermore, another study concluded that ACT treatment is effective in reducing anxiety and depression [32]. The effect of this treatment method on the depression of mothers of autistic children can be explained by highlighting the importance of acceptance, addressing failures, and committing to the therapeutic process. These sessions aim to raise awareness in depressed and stressed individuals about the thoughts that contribute to their depression and stress. The meetings also focus on being present in the current moment and emphasizing the importance of living in the present [17, 19]. To encourage behavioral change in mothers that aligns with their values, the ACT treatment method incorporates exercises and metaphors that help clarify their values, as outlined in the treatment protocol. Values serve as motivators for behavior and facilitate the acceptance of painful experiences and feelings. Living according to individual values enables individuals to endure pain, perform effectively, and experience positive emotions [33].

The current research also had limitations. The difficulties faced by the participants in consistently attending the treatment program were primarily due to implementation and coordination issues among them. Additional obstacles involved parents being obligated to accompany their child with ASD, clashes between school days and therapy sessions at alternative facilities, and divergent viewpoints on the timing of the program. Additionally, the research acknowledged that ASD disorder encompasses different spectrums, and each autistic individual may exhibit varying characteristics that can change over time. This aspect should be taken into consideration as it can

impact the effectiveness of the treatment approach for mothers with autistic children. It is important to note that the study's findings are specific to mothers of autistic children in Tehran, so caution must be exercised when generalizing the results to other communities. Future research should also examine the impact of this approach on fathers of autistic children. Furthermore, the study has not controlled for intervening variables such as family income, parents' education level, and parents' health problems, which are suggested to be addressed in future research. Lastly, it is recommended that future studies investigate the effect of another therapeutic approach, such as self-compassion, in reducing negative emotions among parents with autistic children alongside the ACT approach.

Conclusion

In conclusion, the results of this study demonstrate that the ACT approach effectively reduces guilt and depression in mothers with autistic children. However, it does not have a lasting effect on self-blame. Based on these positive findings, it is proposed that ACT should receive increased attention in educational and rehabilitation centers. Alongside intervention and rehabilitation programs for autistic children, it is recommended to provide a program focused on commitment and acceptance for families.

Conflict of Interest

The authors state that they do not have any conflicts of interest.

Ethical Approval

The research has received the approval of the ethics committee of the Islamic Azad University, Zanjan branch (IR.IAU.Z.REC.1402.127).

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