



## The effect of acceptance and acceptance therapy (ACT) on happiness, mental health and quality of life of mothers with autistic children

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### ABSTRACT

**Objective:** This research aims to investigate the effect of acceptance and commitment therapy on happiness, mental health and quality of life of mothers with autistic children.

**Method:** The statistical population of this research consists of 30 people (15 people each in the experimental and control groups) selected by available random sampling and then were assigned randomly into two experimental groups (ACT) and the control group. The study had a pre-test-post-test design with a control group, and both groups were pre-tested based on the Oxford Happiness Questionnaire, Mental Health Questionnaire, and Quality of Life Questionnaire, and the experimental groups were exposed to independent variables in 8 90-minute sessions (ACT). Then, both groups were given a post-test and a follow-up one month later, and multivariate covariance analysis was used to analyze the data.

**Results:** The findings with a significance level of 0.05 showed that the ACT in the experimental group subjects, compared to the control group, increased happiness, mental health, and quality of life in the experimental group. The follow-up results showed that the differences in the follow-up scores of happiness, mental health and quality of life are related to the continuation of ACT (group membership).

**Conclusion:** ACT improves the mental health, happiness, and quality of life of mothers with autistic children.

**Keywords:** Acceptance and commitment therapy, mental health, happiness, quality of life, mothers.

### 1 Introduction

The birth of any child can be a pleasant event and, on the contrary, an emotional and stressful experience for parents, and the presence of a troubled child in the family

often cause irreparable damage to the family. The vulnerability of the family in front of this lesion is sometimes to such an extent that the family's health suffers severe damage. When the child is in trouble, the mother-child relationship is disturbed because the mother does not receive

proper feedback from her child for her efforts (Anjomani & Taklavi, 2019).

Among the childhood disorders is autism spectrum disorder, which includes a range of neurodevelopmental disorders and continues throughout life (Nayar et al., 2021). Autism disorder is a type of neurodevelopmental disorder whose characteristics are revealed by continuous damage in social communication and associations and limited and stereotyped patterns of behavior with obvious signs in the first early period after birth (Anjomani & Taklavi, 2019).

Parents of autistic children constantly blame themselves for their children's autism and often experience depression, stress, confusion, frustration, feelings of failure, etc. In their lives, these feelings are usually due to the incurability of autism, the lack of understanding of society, withdrawal from society, and separation from society. It will have destructive emotional effects on the marital relationship of parents of children with autism, such as conflict, anger, aggression, stress, anxiety, incompatibility, and sometimes even divorce (Lai et al., 2015). Therefore, this disorder disrupts many dimensions of the child's family life and creates many problems for the parents of these children, especially mothers (Shahabi, Shahabi, & Foroozandeh, 2020). These mothers have more ineffective attitudes, spontaneous thoughts and negative emotions than mothers of normal children (Zare Bidaki & Jahangiri, 2019); Moreover, they experience more depression and are unable to control their anger in front of their children. A study observed that this group of mothers showed less sensitivity and were more helpless during mother-child interaction (Zare Bidaki & Jahangiri, 2019). Studies have shown that mothers of children with autism spectrum disorders have lower mental health (Hooshyar, Kakavand, & Ahmadi, 2018).

The *mental health* index is defined as a measurement variable of the state of mental health (Haider et al., 2021). Mental health is defined as people's evaluations of their lives, including: People's emotional reactions to events, their creation and their judgments about their satisfaction with life (Kazdin, 2019). People with good mental health are self-aware and aware of the motivation of their work. They can control their behaviors and use their abilities in the path of productive activities and they love their lives (Diego, Cerna, & Agdeppa, 2018).

*Quality of life* (QoL) is one of the major concerns for health professionals and is used as an indicator to measure health status in well-known health research. Exceptional child care reduces the QoL of other family members,

especially the mother (Taghizadeh, 2015). QoL is a multi-dimensional concept that includes areas related to physical, mental, emotional, and social functions. It especially focuses on the impact of health status on people's functional abilities to perform daily tasks and routine tasks of people (Sasani et al., 2020). According to the definition of the World Health Organization, QoL refers to people's understanding of their position in life in terms of culture, the value system in which they live, their goals, expectations, standards and priorities (Hamzehlouiyani et al., 2019). Based on the definitions, QoL is a feeling of satisfaction or lack of satisfaction regarding different and important aspects of life. QoL is the desirability of the objective environment in which a person lives. QoL, like beauty, lies in the eye or mind of the beholder, and happiness is considered an integral part of the QoL (Shin, 2015).

*Happiness* is one of the necessities of life that no one can find who has not experienced, and it is recognized as one of the inalienable rights of human beings (Thomas, Ambrosini, & Hughes, 2019). Moreover, during the last several years, significant efforts have been made in psychology to pay attention to topics such as happiness, the meaning of life, and personality strengths. This movement, which is known as (positive psychology) or (the science of happiness), It is trying to identify goals that promote mental health and QoL (Kazemi et al., 2020). Happiness is satisfaction with life, pleasure, and mental happiness (Adamu, Jalo, & Oholiabs, 2021). It has three dimensions: the frequency and degree of positive emotion, the mean level of satisfaction over time, and the absence of negative emotions such as depression and anxiety (Changizi et al., 2020). Happiness helps to increase psychological well-being (Diego, Cerna, & Agdeppa, 2018) and causes positive energy and higher mental health in people (Varaee et al., 2019).

However, such children's emotions can cause irreparable damage and effects on the psychological state of the family and society. However, these losses and effects can be compensated and mitigated to a large extent, but compensating or reducing these effects requires a scientific understanding of them (Costa, Steffgen, & Ferring, 2017). In line with these problems, many methods and interventions have been used to improve the mental health and QoL of the parents of these children; among them is acceptance and commitment therapy (ACT). It means creating the ability to choose an action among different options that is more appropriate, rather than doing an action to avoid thoughts, emotions or disturbing feelings or actually imposing it on a person (Harvey et al., 2009). ACT is one of the behavioral

therapies based on attention and awareness, known as ACT. This treatment is one of the treatments of the third wave of behavioral therapy, which is based on the comprehensive vigilance of the conscious mind (Hayes et al., 2006). In this therapy, mindfulness involves bringing conscious awareness to the experience of the here and now with openness of interest and acceptance; mindfulness involves living in the here and now, being engaged with the task at hand and not being distracted by thoughts (Norton et al., 2011). Its underlying principles include accepting or wanting to experience pain or other disturbing events without trying to control them, value-based action or commitment combined with the desire to act as meaningful personal goals rather than eliminating unwanted experiences. Likewise, language methods and cognitive processes interact with other non-verbal dependencies in a way that leads to healthy functioning. This method includes text exercises on encountering linguistic metaphors and methods such as mental care (Zare Bidaki & Jahangiri, 2019). Finally, maintaining and improving the happiness, mental health and QoL of families with autistic children increases the need for research in this direction. Therefore, regarding the mentioned materials, the present study was conducted to investigate the effect of ACT on happiness, mental health and QoL of mothers with autistic children.

## 2 Methods

### 2.1 Study design and Participant

The present research is a quasi-experimental study with a pre-test and post-test design with a control group. The statistical population included all the mothers of children with autism disorder in Ahvaz city, which consisted of 500 people selected from among the mothers of children who were under the care of the centers of the Autism Children's Association. The statistical sample of this research was 30 mothers with autistic children in Ahvaz city. Inclusion criteria include Mothers with autistic children, members of the autistic children's association under the supervision of the welfare organization, who have fully participated in the treatment sessions, and the exclusion criteria: being absent more than 3 sessions, non-attendance at the sessions, no history of treatment and specific mental and physical problems. According to the inclusion and exclusion criteria, a sample of the mothers of children who are under the care of the centers of the Autism Children's Association (under the supervision of the welfare organization) is available as a random sampling; randomly, 15 people in the experimental

group of ACT; 15 people were assigned to the control group and tested.

### 2.2 Measurements

The data were collected using *Oxford Happiness Inventory (OHI)*, *Symptoms Checklist (SCL-25)* and *QoL Questionnaire (SF-36)*.

#### 2.2.1 Quality of Life

Ware and his colleagues in 1998 designed the QoL questionnaire. It includes 36 questions that measure health status in eight dimensions of physical function, physical limitation, physical pain, general health, vitality, social function, emotional role, and mental health and the answers given are given points based on the questionnaire's instructions. The questions of this questionnaire identify both positive and negative aspects of health (Ware Jr & Gandek, 1998). Also, different rating scales, such as a five-point Likert scale from excellent to poor and yes and no, are used to answer the different questions of this tool. The scoring method of the 36-question form is a separate score for each of the subscales and a score for the two general parts, physical and mental-psychological, based on its special guide. The maximum score for each section or subscale is 100 and the minimum score is zero, where high scores indicate better health status and low scores indicate poorer health status. The total QoL score is also obtained by averaging different dimensions of health status (Azizi et al., 2011). In some studies, the reliability of the QoL questionnaire has been evaluated using statistical analysis of internal consistency and validity by comparing known groups and convergent validity. Internal consistency analysis has shown that the scales of the Persian version of the Sf-36 questionnaire have a minimum standard reliability coefficient in the range of 77% to 90% (Azizi et al., 2011). In the present study, the reliability of this questionnaire was obtained based on Cronbach's alpha equal to 0.79.

#### 2.2.2 Mental Health

SCL-25 is the short form of the revised version of the ninety-item symptoms checklist, SCL-90-R, which was prepared by Najjarian and Davoodi (2001). This checklist is a self-report instrument for measuring general psychopathology. This scale consists of 25 items, scoring questions on a continuum from 1 (for none) to 5 (for most of the time). People who score high on this scale. have low

mental health and people who get lower scores have more mental health. In the study of Najjarian and Davoodi (2001), the reliability coefficients of SCL-25 were reported to be 0.78 in the test-retest method and 0.97 in the calculation of internal consistency (Najjarian & Davoodi, 2001).

### 2.2.3 Happiness

The Oxford Happiness test has 29 items and measures individual happiness. This test was developed in 1990 by Argyle and Lu based on Beck's depression questionnaire (1976). Each item has four options, and the subject must choose one of them according to his current situation. Today, this test is widely used in researches related to happiness. This test consists of 29 statements with four options, and the scoring of the options for each statement is A (0), B (1), C (2) and D (4). Thus, the highest score that the subject can get in this scale is 0.87, which indicates the highest level of happiness, and the lowest score of this scale is 0, which proves that the subject is dissatisfied with his life and depressed. Argyle and Lu (1990) reported the Oxford questionnaire's reliability using Cronbach's alpha coefficient of 0.90 and its test-retest reliability of 0.78 within seven weeks. The concurrent validity of this questionnaire was calculated using the evaluation of friends of the subjects about them as 0.43. Since happiness has three parts: positive emotion, satisfaction and the absence of negative emotion, the correlation of this questionnaire with the Bradburn positive emotion scale (0.32), with the life satisfaction index

(0.57) and with Beck's depression questionnaire (52) -0/ was calculated (Argyle & Lu, 1990). Alipour and Agah Harris (1999) were implemented to check the validity and reliability of the Oxford Happiness Inventory and obtained Cronbach's alpha equal to 0.91 for the entire inventory. The Pearson correlation between the Oxford Happiness Inventory and the Beck Depression Inventory and the extroversion and neuroticism subscales of Eysenck's personality questionnaire were equal to -0.48, 0.45 and -0.39, respectively, which confirmed the convergent and divergent validity of the Oxford Happiness Inventory (Alipour & Agah Heris, 2007). In the present study, the reliability of this questionnaire was obtained based on Cronbach's alpha equal to 0.88.

### 2.3 Intervention

After selecting the sample group and placing them in the form of random assignment in two experimental and control groups, the treatment was performed on the experimental group for 8 sessions of 90 minutes by the group leader. The group leader stated the objectives in each meeting and the framework of the meeting was determined accordingly (Hayes, 2004). The total number of sessions was 8 and a one-month follow-up was considered.

#### 2.3.1 ACT

The content of ACT session is presented in the [Table 1](#).

**Table 1**

#### ACT sessions

Session	Content
1	Conducting the pre-test, establishing a therapeutic relationship with the group members, using the metaphor of two mountains.
2	Getting to know the purpose of acceptance and commitment therapy and its concepts, creating insight into problems and negative thoughts using (the metaphor of a fake giant with cans; writing thoughts on cards)
3	Explaining creative helplessness; Using (the metaphor of falling into a well; practicing the word milk) and practicing mindfulness (eating raisins)
4	Explaining problem control and replace desire using (metaphor of lie detector; tug-of-war with a giant; clean mess vs. dirty mess) and practice mindfulness with breathing.
5	Creating acceptance and objectification using (the metaphor of smooth sands, bus passengers)
6	Self as context, self-receptive and observer and using (chess board metaphor) and practicing mindfulness
7	Teaching about value-oriented and purposeful living, stating values, realistic goals and their evaluation obstacles using (metaphor of the bad cup; finding a place to sit; gardening; bubbles in the road).
8	Reviewing last week's meeting and explaining about committed action and summarizing; Requesting opinions and final suggestions and post-test implementation

### 2.4 Data Analysis

In the descriptive statistics section, statistical indices such as mean and standard deviation were used for the inferential

statistics section, the univariate analysis of covariance and post-hoc test were used. SPSS-22 software was used to analyze the data of this research.

### 3 Findings and Results

The descriptive findings of this research include statistical indicators, such as mean and standard deviation for all variables studied in the research. Table 2 shows the mean and standard deviation of happiness, mental health and QoL in experimental (ACT) (1) and the control group (2) in the pre-test, post-test and follow-up stages.

**Table 2**

*Descriptive findings*

Variable	Group	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Happiness	1	56.26	5.62	13.60	5.12	60.26	4.74
	2	57.20	4.06	6.57	6.32	58.06	6.27
Mental health	1	59.93	5.83	4.63	5.53	63.33	4.89
	2	56.26	5.31	73.56	5.00	13.57	2.28
QoL	1	61.46	5.76	13.66	5.30	66.65	4.86
	2	60.60	6.59	93.60	6.73	61.2	6.54

As can be seen in Table 2, in the experimental and control, in the pre-test stage, the mean happiness is equal to: (56/26) and (57/2), mental health (59/93) and (56/26) and QoL (61/46) and (60/6). In the post-test stage, the mean of the happiness is equal to: (60/13) and (57/6), mental health (63/4) and (56/73) and QoL (66/13) and (60/93). In the follow-up test, the mean happiness is equal to: (60/26) and (58/06), mental health (63/33) and (57/13) and QoL (56/66) and (61/2). The correlation coefficients between pre-test and post-test of happiness, mental health and QoL were 0.86, 0.88 and 0.86 respectively. According to the obtained correlations ( $p < 0.05$ ), the assumption of linear relationships between research variables has been fulfilled. According to the correlation coefficients calculated in a range between 0.13 ( $p < 0.05$ ) and 0.41 ( $p < 0.05$ ), it can be said that the assumption of multiple collinearity between the research variables is almost confirmed. The results of the homogeneity of variances showed that ( $p < 0.05$ ) and the lack of significance of Levene’s test, it is allowed to use the analysis of covariance test. This means that the experimental and control groups were homogeneous in terms of variances before the experimental intervention (in the pre-test stage).

**Table 3**

*Results of the univariate covariance analysis*

Source	Group	SS	Df	MS	F	Sig	Effect size
Group	Happiness	306.26	2	153.13	84.43	0.001	0.81
	Mental health	333.82	2	169.91	134.84	0.001	0.97
	QoL	431.17	2	215.58	222.38	0.001	0.91

As can be seen in Table 3, the F ratio of univariate analysis of covariance was obtained: For the happiness ( $F=84.43$  and  $P=0.001$ ), mental health ( $F=134.84$  and  $P=0.001$ ) and QoL ( $F=222.38$  and  $P=0.001$ ). These findings show a significant difference in dependent variables, including happiness, mental health and QoL, between experimental and control groups. Bonferroni’s post-hoc test determined which groups differed in the dependent variables. As seen in Table 4, the adjusted average and standard error of the components of desirable social tendencies are significant.

**Table 4**

*The results of Bonferroni’s post-hoc test*

Variable	Groups	Mean diff	Error	Sig.
Happiness	Exp - Control	3.38	0.52	0.001
Mental health	Exp - Control	3.43	0.43	0.001
QoL	Exp - Control	4.53	0.38	0.001

As seen in Table 4, The difference between the control group’s average and experimental group’s average for the happiness is 3.38, QoL is 4.53, mental health is 3.43, which are significant at the 0.001 level. This finding shows a significant difference in the happiness, QoL and mental health between the average of the control group and the average of experimental group due to ACT intervention.

#### 4 Discussion and Conclusion

This research aims to investigate the effect of ACT on the happiness, mental health and QoL of mothers with autistic children. The results showed that ACT leads clients to feel unpleasant internal experiences without trying to control them. Doing so will make unpleasant experiences seem less threatening, and their impact on one's life will be reduced, resulting in greater feelings of happiness. Moreover, in ACT, the goal is to emphasize people's desire for inner experiences: To help them to experience their disturbing thoughts as just a thought and to become aware of the dysfunctional nature of their current program, and to do what is important to them in life and line with their values instead of responding to it. Therefore, ACT is effective in mental health, happiness and improving the QoL of mothers of autistic children. The findings of this research are consistent with the results of some previous studies (Azemi Zeynal, Ghaffari, & Sharghi, 2016; Hor & Manshaee, 2017; Kanter, Baruch, & Gaynor, 2006)

Considering the lower QoL of mothers with children with autism compared to mothers with deaf and blind children, QoL becomes very important. Its effect on people's mental and physical performance should be sought to increase people's more efficient and better understanding of life (Mohammadi et al., 2017).

The study of Whittingham, Sheffield and Boyd (2016) on 11 parents of children with cerebral palsy showed that ACT is effective on parents' QoL. Fashler et al. (2018) concluded that ACT effectively improves the QoL of oncology patients. In the study of Batink et al. (2016), the results indicated the effect of ACT to improving the QoL of outpatients. Many studies also showed that ACT significantly increases the QoL of mothers of children with autism (Zare Bidaki & Jahangiri, 2019). Therefore, acceptance and commitment therapy can be used as complementary therapy by creating a positive and appropriate change in the mothers of children with autism. ACT changes the relationship between problematic feelings and thoughts so that people do not perceive them as morbid symptoms and even learn to perceive them as harmless. According to the definition of the World Health Organization, mental health is complete physical, mental, and social well-being (not just illness and disability) (Moreno et al., 2020). Mental health components such as depression, anxiety, psychosomatic diseases and failure in social relationships are important factors that each affect people's QoL (Oftedal et al., 2019). In analyzing the concept of happiness, theorists mainly refer to two cognitive

and emotional components: The cognitive component, which mostly implies satisfaction with life, and the emotional component, which emphasizes situations such as laughing and humor, as well as the balance between positive and negative emotions (Kim & James, 2019). Since happiness also acts as a defensive shield against stress and improves general health (Luhmann et al., 2016). In line with the results of this research, it has been seen in other communications that there is a significant difference between the stress and happiness of the experimental and control groups in the post-test phase (Naeimi & Tajery, 2017); Happiness with high mental toughness is associated with an increase in people's ability and their happiness (Vali, Saboonchi, & Ahmadi, 2020). The research of Poursardar et al. (2018) showed a significant relationship between mental health and the level of happiness, and the effect of happiness in increasing mental health and life satisfaction can be predicted. The results of other studies showed that group ACT could help improve the mental health of mothers of children with autism spectrum disorder (Zare Bidaki & Jahangiri, 2019).

According to Hayes et al. (2004), in ACT, acceptance is not just tolerance but unbiased acceptance of experience in the present, from which treatment begins. As noted earlier, confronting maladaptive cognitions strengthens rather than diminishes these cognitions (Hayes, Strosahl, & Strosahl, 2004). Therefore, the teaching of the element of acceptance helped mothers accept the thoughts and feelings they tried to deny and keep away to restore happiness and mental health to themselves and increase their QoL. On the other hand, the positive acceptance of autistic children by the family, especially mothers, finding positive characteristics in children's behavior and personality and the positive aspects of life with them, makes parents familiar with positive methods of parenting, such as strengthening positive behaviors and correct methods of rewarding. In general, parents of children with autism spectrum disorder are highly vulnerable to all kinds of mental and physical disorders. For this reason, as a special group, they require special attention to receive therapeutic and educational interventions for prevention and treatment. (Costa, Steffgen, & Ferring, 2017).

#### 5 Limitations

From the limitations of the research, due to the variables and the large number of questions in the questionnaires, answering the subjects was associated with fatigue.

Therefore, this affects the accuracy of the research and its generalizability. Other limitations include the influence of some intervening and disturbing variables and, the lack of control of some of them by the researcher, the non-cooperation of mothers of autistic children when answering; the findings of this research can be referred to the time dimension of the related research, therefore, considering that this research is in a period has been done, one should be cautious about generalizing the results in the long term and the future.

## 6 Suggestions and Applications

According to the stated content extensive studies should be conducted to evaluate the state of happiness, mental health, and QoL in mothers of autistic children so that appropriate programs can be done to increase the happiness, mental health, and QoL in mothers of autistic children based on ACT. Finally, to familiarize more people with this

treatment's beneficial effects and use them in life, it is suggested to hold extra-organizational workshops on acceptance and commitment therapy for other people individually and in groups.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethics principles

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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