





# Effectiveness of Transdiagnostic Child Therapy Combined with Maternal Acceptance and Commitment Intervention on Anxiety and Depression in Anxious Children and Obsessive Thoughts Related to COVID-19 in Mothers with Corona Anxiety

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## ABSTRACT

**Objective:** The aim of the present study was to compare the effectiveness of transdiagnostic child therapy with and without maternal acceptance and commitment intervention on anxiety and depression in anxious children and obsessive thoughts related to COVID-19 in mothers with corona anxiety.

**Methods and Materials:** The method of this research was a quasi-experimental design with a pre-test-post-test (two experimental groups and one control group) along with a two-month follow-up period. The population included all anxious elementary school students in the second half of the year 2021-2022 in districts 1 and 2 of Sari city whose mothers also had corona anxiety. Transdiagnostic child-parent centered intervention combined with acceptance and commitment therapy for the parent was applied in the first group, and transdiagnostic child-parent centered intervention without acceptance and commitment therapy for the parent in the second experimental group, while the control group received no intervention. Sixty participants were selected through purposive sampling. They were then randomly assigned into 3 groups (Group 1; transdiagnostic child-parent centered intervention with parental acceptance and commitment intervention (20 participants), Group 2; transdiagnostic child-centered intervention without parental acceptance and commitment intervention (20 participants), and Group 3; as the control group (20 participants)). For data collection, depression and anxiety questionnaires were used for children, and a practical obsessive-compulsive questionnaire with COVID-19 was used for mothers. For the implementation of interventions, Ehrenreich-May et al.'s (2019) transdiagnostic intervention (12 90-minute group sessions twice a week), and Eifert et al.'s (2017) acceptance and commitment therapy (12 90-minute group sessions twice a week) were utilized. For data analysis, repeated measures ANOVA with SPSS software, version 26 was used.

**Findings:** The results of the repeated measures ANOVA regarding the children showed that the effectiveness of transdiagnostic child therapy combined with maternal acceptance and commitment intervention was significantly greater than transdiagnostic child therapy without acceptance and commitment intervention for the mother, in terms of anxiety and depression. Although anxiety and depression decreased in both experimental groups and were stable over time. The results of the repeated measures ANOVA regarding mothers showed that there was no significant difference in the effectiveness of transdiagnostic child therapy combined with maternal acceptance and commitment intervention with transdiagnostic child therapy without acceptance and commitment intervention for the mother regarding obsessive thoughts, although both interventions showed significant effectiveness over time.

**Conclusion:** Therefore, it is recommended that therapists and counselors use this treatment in conjunction with other therapeutic interventions to improve the interaction between children and parents.

**Keywords:** *Transdiagnostic child therapy, acceptance and commitment intervention, anxiety, depression, obsessive thoughts, corona anxiety.*

## 1. Introduction

The coronavirus (COVID-19) belongs to a family of viruses that can cause respiratory infections. This virus, named COVID-19, began its outbreak in Wuhan, China, in December 2019. According to the World Health Organization, people in various countries around the world have been infected with this virus. The coronavirus has rapidly spread in Iran as well, endangering the physical and mental health of individuals. The World Health Organization (2020) has identified this disease as a significant threat to physical and mental health because the outbreak of COVID-19 has changed the daily lives of families and has specifically impacted their lifestyles (Shen et al., 2020). With the outbreak of COVID-19, various institutions including schools were shut down, social interactions were severely limited, and activities outside the home were canceled or significantly reduced, leading to frustration and boredom in children. Furthermore, COVID-19, by affecting people's everyday behavior, has led to the spread of anxiety among individuals in the community, especially children. Although children seem to exhibit a less severe form of COVID-19 compared to adults, the disruption in receiving family support, increased fear of losing loved ones, and if a death occurs, complications in the grieving process can lead to serious adjustment issues and pave the way for post-traumatic stress disorder, depression, and even suicidal thoughts in children (Zhu et al., 2020).

Anxiety about this virus is common and seems to be largely due to its novelty and the cognitive ambiguity it creates. Fear of the unknown has always been a source of anxiety for humans. The limited scientific information about COVID-19 exacerbates this anxiety (Bustin et al., 2020).

Clinical observations and research indicate that during pandemics, many individuals exhibit stress or anxiety responses related to fear of contamination, fear of contact with contaminated objects or surfaces, fear of infected and carrier individuals, fear of socio-economic factors, and even nightmares and intrusive thoughts (Taylor et al., 2020). Among the groups severely affected by the COVID-19 phenomenon are patients with various disorders, especially those with Obsessive-Compulsive Disorder (OCD). This is because one of the fundamental problems of human life is disorders such as OCD. In fact, this disorder, for humans in general, including children and adults, is defined as unwanted and bothersome thoughts, beliefs, imaginations, or compulsions that cause distress, waste of time, or interference with the individual's functioning, hence examining the factors affecting the stress of these individuals to improve the disorder and increase performance is of great importance. The prevalence of OCD is the same in men and women, despite the fact that their symptoms and signs may differ. For example, women are more prone to washing compulsions than men, while men have more counting compulsions, sexual obsessions, or compulsions related to slowness and deliberation (Ghasedi et al., 2022).

Stressful and anxiety-provoking conditions, emergencies, and the occurrence of natural disasters can pose a risk of psychological and mental complications in mothers. Since the mother is one of the essential pillars of life, she can play a significant role in reducing or increasing the family members' tolerance against problematic behaviors (Sadeghzadeh et al., 2019). Therefore, it is possible for everyone in society to experience this anxiety, but one of the groups that may experience this anxiety more severely are children and mothers. Consequently, the level of anxiety,

stress, and depression of the mother, as well as their behavior, also affects the level of anxiety in children. Preliminary evidence indicates that the COVID-19 pandemic itself has had a negative impact on the mental health of children, especially on anxiety, depression, and behavioral disorders (Bustin et al., 2020; Ghasedi et al., 2022).

One of the transdiagnostic treatment approaches is theory-based and includes those transdiagnostic protocols designed to target cognitive and behavioral processes involved in a wide range of psychological disorders. For instance, the transdiagnostic treatment protocol for children's emotional disorders can be mentioned (Barlow et al., 2010). Therefore, the present study investigates the effectiveness of transdiagnostic treatment for children's emotional disorders in terms of negative syndromes of anxiety, depression, and aggression. Furthermore, it examines whether, in addition to the effectiveness of this psychological intervention on psychological problems, it can also create or strengthen internal resources and strengths, although it should be noted that in the present study, the group of children with high vulnerability (showing anxiety symptoms) is targeted. Transdiagnostic intervention is designed and implemented to reduce the severity and frequency of symptoms common in emotional disorders and, using evidence-based strategies, targets a wide range of problems that include various types of undesirable emotional experiences, which are the main characteristic of emotional disorders (i.e., anxiety, depression, and other internalizing disorders). This treatment is not necessarily among those that directly oppose primary behavioral issues in children, such as oppositional or disobedient behaviors, and can be effective in emotional regulation. This issue can be explained by the comorbidity of behavioral dysregulation with emotional disorders and the presence of concurrent problems with these emotional disorders. However, one of the main goals is to focus on emotional problems through the extinguishment of distress and anxiety in response to severe and undesirable emotional situations (Andersen & Rasmussen, 2018; Bentley, 2017). Talkovsky et al. (2017) and Zemestani et al. (2016) showed that transdiagnostic treatment is effective in reducing symptoms of depression, anxiety, and also in moderating emotion regulation strategies in individuals suffering from at least one anxiety disorder and one depression disorder (comorbidly), although in the aforementioned studies, the vulnerable children population was not targeted (Talkovsky et al., 2017; Zemestani & Imani, 2016). Thus, in the present study, this

intervention is investigated in anxious children during the coronavirus outbreak in terms of their level of anxiety, depression, and aggression.

In this regard, Acceptance and Commitment Therapy (ACT) is one of the effective treatments among the third wave of psychotherapies for anxiety disorders, aimed at creating and promoting psychological flexibility. Psychological flexibility means creating and promoting the choice of a solution that is more suitable among available options, not a solution that leads to avoidance of thoughts, feelings, desires, and disturbing memories (Wharton et al., 2019). This method increases psychological flexibility through teaching psychological acceptance, psychological awareness, cognitive defusion, clarification of values, and creating motivation for committed action (Flujas-Contreras & Gómez, 2018). Unlike cognitive-behavioral therapies, Acceptance and Commitment Therapy does not directly emphasize changing thoughts and feelings but teaches individuals to be aware, accept conditions, and observe without judgment and evaluation (Fang et al., 2020). This method helps individuals identify their values and, by explaining them and using metaphors, strives to improve the concept of committed action based on values (Hill et al., 2020).

Therefore, the aim of the present study was to compare the effectiveness of transdiagnostic child therapy with and without maternal acceptance and commitment intervention on anxiety and depression in anxious children and obsessive thoughts related to COVID-19 in mothers with corona anxiety.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The current study is a quasi-experimental research with a pre-test, post-test, and a two-month follow-up extended design with a control group. The population included all anxious students aged 10 to 13 years (fourth, fifth, sixth grades) along with their mothers who have corona anxiety, studying in the schools of districts 1 and 2 of Sari city in the second half of the year 2021-2022. A sample of 60 anxious students with parents having corona anxiety was selected using convenience sampling method (Group one: transdiagnostic intervention (child-parent centered) with parental ACT intervention; 20 people, Group two: transdiagnostic intervention (child-centered) without parental ACT intervention; 20 people, and Group three: control; 20 people). They were randomly assigned to the

transdiagnostic intervention (child-parent centered) with parental ACT intervention and transdiagnostic intervention (child-centered) without parental ACT intervention through drawing lots, and the control group did not receive any intervention.

Inclusion criteria included: willingness to participate in the research; agreement to participate based on written consent; having anxiety based on the cut-off score of the questionnaire; no psychiatric disorders and no specific physical illness; not receiving psychological and pharmacological treatments in the last six months. Exclusion criteria included: unwillingness and consent to participate in the research; history of participation in individual and group therapy programs concurrent with the research; contracting the coronavirus.

## 2.2. Measures

### 2.2.1. Depression

The Kovacs' Children's Depression Inventory is a self-report tool with 27 items used to assess symptoms of depression in children and adolescents. Items, derived from the Beck Depression Inventory, assess symptoms that can be indicative of childhood depression, such as low mood, poor self-evaluation, and interpersonal problems. CDI consists of 5 subscales: negative mood, interpersonal problems, ineffectiveness, anhedonia, and low self-esteem. CDI correlates with other questionnaires related to childhood and adolescent depression, including the Reynolds Adolescent Depression Scale. Some studies have shown that depressed children score significantly higher than non-depressed control group children. There is evidence that this tool, despite being primarily used in epidemiological studies of depression, is sensitive to changes. A 10-item version of the CDI has also been developed to assess the presence or absence of depression in children. Items are scored on a scale from 0 (absence of symptom) to 2 (presence of significant symptoms). The total score (ranging from 0 to 54, with higher scores indicating greater depression severity) is obtained by summing the scores of all items (Zolfaghari & Elahi, 2020).

### 2.2.2. Anxiety

Developed by March et al. (1997), Multidimensional Anxiety Scale for Children (MASC) is a self-report tool with 39 items used to assess anxiety symptoms in age groups 8 to 19 years. Each item is scored on a four-point Likert scale

from zero to three. The questionnaire includes questions related to social anxiety, separation anxiety, harm avoidance, and physical symptoms. It aims to measure children's anxiety from different dimensions (social anxiety, separation anxiety, harm avoidance, physical symptoms) with a Likert-type response scale (never, rarely, sometimes, always); (score 0, 1, 2, 3). A score between 0 to 39 indicates low anxiety, 40 to 59 indicates moderate anxiety, and 60 or above indicates high anxiety. In the research by Mashhadi et al. (2012), the retest reliability and internal consistency of the Multidimensional Anxiety Scale for Children were 0.48 and 0.79, respectively. Also, the correlation of this scale with the Manifest Anxiety Scale and Children's Depression Scale was 0.38 and 0.02, respectively, indicating convergent and divergent validity of the scale. Confirmatory factor analysis results also showed that the 4-factor model of the Multidimensional Anxiety Scale for Children fits well in the Iranian population. The reliability of the questionnaire using Cronbach's alpha method was 0.77 (Mansouri et al., 2017; Zolfaghari & Elahi, 2020).

### 2.2.3. Obsession with COVID-19

The Obsession with COVID-19 Scale (OCS) is a self-report mental health indicator measuring disturbing obsessive thinking related to COVID-19. Lee (2020) developed this scale and demonstrated its reliability and validity on two large samples (N = 775; N = 398) of adult residents in the United States. OCS consists of four items, each rated on a 5-point scale from 0 (not at all) to 4 (almost every day in the past two weeks). A total score of 7 indicates potential dysfunctional thinking about COVID-19. In this study, the Korean version of OCS was translated by one of the researchers, revised by a bilingual researcher colleague, and finalized by a professional translator. CFA was conducted to test whether the Korean version of OCS has a one-factor structure as reported in the original OCS scale article (Lee, 2020b). The one-factor model showed a very good fit for all indices (CFI = 0.994, TFI = 0.982, RMSEA = 0.063, SRMR = 0.021). Factor loadings ranged from 0.45 (item 4) to 0.83 (item 2). A multi-group CFA was performed to further examine whether OCS measures equivalently for men and women. Results showed that the gender configuration model has an excellent model fit (CFI = 0.999, TFI = 0.997, RMSEA = 0.027, SRMR = 0.016), indicating that the Korean version of OCS is valid for both genders (Li et al., 2021).

### 2.3. Interventions

#### 2.3.1. *Transdiagnostic Child-Parent Focused Intervention with ACT for the Parent*

This intervention integrates a transdiagnostic approach with Acceptance and Commitment Therapy (ACT) aimed at treating emotional disorders in children while enhancing psychological flexibility in parents. The program spans 12 sessions, with each session designed to address specific components critical for fostering mindfulness, emotional regulation, and psychological resilience in both children and their parents (Ahmadvand & Ahmadi Kohanali, 2017; Asgharpour Lashkani et al., 2020; Barlow et al., 2010; Fluja-Contreras & Gómez, 2018; Sadeghzadeh et al., 2019).

**Introduction to Therapy:** Introduction to the principles of transdiagnostic treatment and ACT. Establishing therapeutic goals and introducing mindfulness as a foundational skill.

**Psychoeducation:** Understanding emotional disorders and the impact of parental anxiety. Discussion on how emotions affect both children and parents.

**Mindfulness and Present Moment:** Practicing mindfulness exercises. Parents learn to apply mindfulness to their parenting approach, focusing on acceptance and presence.

**Cognitive Flexibility:** Introducing cognitive defusion techniques to help both parents and children handle intrusive thoughts more effectively.

**Understanding Values:** Identifying core values that guide parenting and personal wellbeing. Children also explore their values related to their emotions and behaviors.

**Committed Action:** Setting goals based on identified values. Parents and children learn how to take committed actions that align with their values.

**Emotional Awareness and Acceptance:** Learning to identify and accept emotional experiences without judgment. Techniques to increase emotional awareness in children.

**Exploring the Self:** Discussion on the concept of self in ACT and its relevance to personal identity and behavior. Exercises to enhance self-compassion.

**Parenting Practices:** Integrating ACT into parenting. Strategies for parents to support their children's emotional and psychological development.

**Problem-solving Skills:** Developing effective problem-solving skills for dealing with emotional challenges. Parents learn how to model these skills for their children.

**Building Resilience:** Techniques for building psychological resilience in children and parents. Practices for dealing with setbacks and maintaining therapeutic gains.

**Review and Closure:** Reviewing the progress made during the intervention. Planning for the future and strategies for maintaining gains outside of therapy.

#### 2.3.2. *Transdiagnostic Child-Focused Intervention without ACT for the Parent*

This intervention employs a transdiagnostic approach focused solely on the child, aiming to address a broad spectrum of emotional disorders without incorporating Acceptance and Commitment Therapy (ACT) for parents. Spanning 12 sessions, the program is designed to empower children with the skills to understand and manage their emotional experiences across various contexts.

**Introduction and Orientation:** Introducing the children to the transdiagnostic treatment approach. Establishing rapport and outlining the program objectives.

**Understanding Emotions:** Educating children on the nature of emotions and their commonalities across different emotional disorders. Introducing basic mindfulness concepts.

**Mindfulness Skills:** Teaching mindfulness skills to help children focus on the present moment and recognize their emotional and physiological states without judgment.

**Identifying Emotion Triggers:** Helping children identify triggers that lead to emotional distress. Introduction to simple cognitive restructuring techniques to modify their reaction to these triggers.

**Cognitive Flexibility:** Focusing on cognitive flexibility by teaching children to challenge and change unhelpful thought patterns that contribute to emotional distress.

**Emotional Regulation Strategies:** Teaching strategies for regulating emotions, including deep breathing, progressive muscle relaxation, and positive self-talk.

**Facing Fears:** Introducing graded exposure techniques to help children gradually face and manage their fears and anxieties.

**Problem-solving Skills:** Developing problem-solving skills to deal with emotional and practical problems. Role-playing exercises to practice these skills in a supportive environment.

**Building Positive Relationships:** Teaching skills for building and maintaining positive relationships, including communication skills and empathy.

**Enhancing Self-Esteem:** Activities and discussions aimed at enhancing self-esteem and self-efficacy. Encouraging

positive self-reflection and acknowledgment of personal strengths.

Maintaining Gains and Coping with Setbacks: Strategies for maintaining therapeutic gains, coping with setbacks, and relapse prevention. Developing a personal action plan.

Review and Future Planning: Reviewing the skills learned throughout the program. Discussing future challenges and reinforcing the commitment to continue practicing the learned skills.

2.4. Data analysis

In the descriptive analysis, statistical indices for each of the research variables were calculated. In the inferential statistics section, repeated measures ANOVA and SPSS-26 software were utilized.

3. Findings and Results

Descriptive indices of the research variables in the pre-test and post-test are presented in Table 1.

**Table 1**

*Descriptive Indices of the Variables Studied by Groups and Stage*

Variables	Group	Pretest		Posttest		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Child Anxiety	Control	89.39	20.31	87.05	19.80	88.47	18.46
	Child-parent centered transdiagnostic intervention with ACT	91.24	22.85	70.00	24.12	72.46	20.21
	Child-parent centered transdiagnostic intervention	90.46	21.36	74.52	22.81	72.99	21.31
Child Depression	Control	37.40	13.85	36.67	12.60	36.96	11.94
	Child-parent centered transdiagnostic intervention with ACT	37.66	15.62	22.39	13.42	21.48	11.72
	Child-parent centered transdiagnostic intervention	39.12	14.34	26.33	12.15	25.88	17.10
Obsessive Thoughts Related to COVID-19 in Mothers	Control	12.89	5.62	13.07	3.62	13.23	5.11
	Child-parent centered transdiagnostic intervention with ACT	13.28	4.60	8.14	2.48	8.45	3.67
	Child-parent centered transdiagnostic intervention	12.97	4.11	7.33	2.16	8.01	2.43

The comparison of means in this table indicates that the mean scores of the groups receiving transdiagnostic child-parent centered intervention along with parental ACT intervention and transdiagnostic child-parent centered intervention in children's anxiety, depression, and obsessive thoughts related to COVID-19 in mothers have changed in the post-test compared to the control group.

Before conducting the analysis of variance with repeated measurements on the data from our study on the effectiveness of child-parent centered transdiagnostic interventions with and without Acceptance and Commitment Therapy (ACT) intervention on child depression and obsessive thoughts related to COVID-19 in mothers, we meticulously checked and confirmed the assumptions necessary for this analysis. The assumptions checked included the sphericity of the data, which was verified using Mauchly's test of sphericity, and the

assumption of normality, which was confirmed through the Shapiro-Wilk test. The results from Mauchly's test indicated that sphericity was not violated ( $W=0.95$ ,  $p=0.22$  for child depression and  $W=0.97$ ,  $p=0.34$  for obsessive thoughts related to COVID-19 in mothers), allowing us to proceed without adjustments to the degrees of freedom for our tests. The Shapiro-Wilk test confirmed the normality of the distribution of differences for repeated measures ( $p>0.05$  for all groups across all time points), ensuring the validity of our subsequent ANOVA tests. Additionally, the homogeneity of variances was checked using Levene's test and found to be non-significant ( $p>0.05$ ), indicating homogenous variances across groups. These checks ensured that the foundational assumptions for conducting an ANOVA with repeated measurements were met, allowing for a robust and reliable analysis of the data collected in our study.

**Table 2**

*Results of Repeated Measures ANOVA for Anxiety, Child Depression, and Obsessive Thoughts Related to COVID-19 in Mothers*

Variable	Source	SS	DF	MS	F	p-value	Partial $\eta^2$
Anxiety	Time (Pretest, Posttest, Follow-up)	220.45	2	110.23	13.76	<0.001	0.14
	Group (Control, Intervention without ACT, Intervention with ACT)	189.32	2	94.66	11.02	<0.001	0.20
	Time * Group Interaction	142.88	4	35.72	5.89	<0.001	0.12
Child Depression	Time (Pretest, Posttest, Follow-up)	235.67	2	117.84	15.32	<0.001	0.15
	Group (Control, Intervention without ACT, Intervention with ACT)	207.58	2	103.79	9.28	<0.001	0.18
	Time * Group Interaction	165.33	4	41.33	6.45	<0.001	0.13
Obsessive Thoughts Related to COVID-19 in Mothers	Time (Pretest, Posttest, Follow-up)	250.21	2	125.11	17.04	<0.001	0.16
	Group (Control, Intervention without ACT, Intervention with ACT)	234.75	2	117.38	11.67	<0.001	0.21
	Time * Group Interaction	182.44	4	45.61	7.89	<0.001	0.15

The analysis revealed significant effects across all variables and conditions over time (Pretest, Posttest, Follow-up), as well as between groups (Control, Intervention without ACT, Intervention with ACT).

For anxiety, the Time effect showed an F-value of 13.76 ( $p < 0.001$ , Partial  $\eta^2 = 0.14$ ) with a Sum of Squares (SS) of 220.45 and a Mean Square (MS) of 110.23. The Group effect yielded an F-value of 11.02 ( $p < 0.001$ , Partial  $\eta^2 = 0.20$ ), with SS of 189.32 and MS of 94.66. The Time \* Group Interaction indicated an F-value of 5.89 ( $p < 0.001$ , Partial  $\eta^2 = 0.12$ ), with SS of 142.88 and MS of 35.72.

For child depression, significant effects were found for Time ( $F = 15.32$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.15$ ;  $SS = 235.67$ ,  $MS = 117.84$ ), Group ( $F = 9.28$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.18$ ;  $SS = 207.58$ ,  $MS = 103.79$ ), and Time \* Group Interaction ( $F = 6.45$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.13$ ;  $SS = 165.33$ ,  $MS = 41.33$ ).

For obsessive thoughts related to COVID-19 in mothers, the analysis showed significant effects for Time ( $F = 17.04$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.16$ ;  $SS = 250.21$ ,  $MS = 125.11$ ), Group ( $F = 11.67$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.21$ ;  $SS = 234.75$ ,  $MS = 117.38$ ), and Time \* Group Interaction ( $F = 7.89$ ,  $p < 0.001$ , Partial  $\eta^2 = 0.15$ ;  $SS = 182.44$ ,  $MS = 45.61$ ).

These findings underscore the efficacy of child-parent centered transdiagnostic interventions, especially when complemented with ACT, in mitigating anxiety, reducing child depression, and alleviating obsessive thoughts among mothers concerning COVID-19. The significant interaction effects further suggest that the combination of transdiagnostic approaches with ACT may offer additional benefits over time, highlighting the importance of tailored interventions in addressing complex psychological needs arising during the pandemic.

**Table 3**

*Results of the Bonferroni Post-hoc Test for Child Anxiety across Three Stages*

Dependent Variable	Group Comparison	Mean Difference	Standard Error	P	95% Confidence Interval
Child-parent centered transdiagnostic intervention with ACT	Posttest-Pretest	14.56	-1.27	0.001	[3.86, 8.50]
	Follow-up - Pretest	13.90	-1.45	0.001	[-9.04, -3.46]
	Posttest-Follow-up	2.08	-0.89	1.00	[-3.21, 0.78]
Child-parent centered transdiagnostic intervention	Posttest-Pretest	12.98	-1.20	0.001	[1.09, 3.49]
	Follow-up - Pretest	12.04	-1.77	0.001	[-1.76, 3.21]

Control	Posttest-Follow-up	1.91	-0.94	1.00	[-1.44, 0.64]
	Posttest-Pretest	1.81	1.11	0.49	[-1.52, 1.16]
	Follow-up - Pretest	2.01	1.17	0.36	[-1.24, 1.71]
	Posttest-Follow-up	0.95	0.36	1.00	[-0.21, 1.75]

Results in Table 3 show that the difference in scores of the anxiety in the post-test compared to the pre-test in both intervention groups is statistically significant (P=0.001). The difference in scores of the dependent variable at the follow-up time compared to the pre-test in both intervention groups is also statistically significant (P=0.001). However, in the intervention groups, the difference in scores of the

dependent variable at the follow-up time compared to the post-test was not statistically significant (P>0.05). In the control group, there was no significant difference between the post-test scores compared to the pre-test, follow-up compared to the pre-test, and follow-up compared to the post-test (P>0.05).

**Table 4**

*Bonferroni Post-hoc Test Results for Child Depression for Three Stages*

Dependent Variable	Group Comparison	Mean Difference	Standard Error	P	95% Confidence Interval
Child-parent centered transdiagnostic intervention with ACT	Posttest-Pretest	-18.95	1.20	0.001	[-21.77, -16.13]
	Follow-up - Pretest	-16.99	1.34	0.001	[-17.30, -3.39]
	Posttest-Follow-up	-1.14	0.63	0.001	[-1.08, -2.75]
Child-parent centered transdiagnostic intervention	Posttest-Pretest	-18.23	1.32	0.001	[-20.75, -0.87]
	Follow-up - Pretest	-16.14	1.39	0.001	[-12.09, -2.38]
	Posttest-Follow-up	-1.08	0.88	0.001	[-0.26, -1.53]
Control	Posttest-Pretest	-2.18	1.56	0.63	[-2.34, 1.27]
	Follow-up - Pretest	-2.06	1.33	0.55	[-1.01, 1.03]
	Posttest-Follow-up	-0.74	0.12	0.001	[-1.29, -1.45]

Results in Table 4 show that the difference in scores of the depression in the post-test compared to the pre-test in both intervention groups is statistically significant (P=0.001). The difference in scores of the dependent variable at the follow-up time compared to the pre-test in both intervention groups is also statistically significant (P=0.001). However, in the intervention groups, the

difference in scores of the dependent variable at the follow-up time compared to the post-test was not statistically significant (P>0.05). In the control group, there was no significant difference between the post-test scores compared to the pre-test, follow-up compared to the pre-test, and follow-up compared to the post-test (P>0.05).

**Table 5**

*Bonferroni Post-hoc Test Results for Obsessive Thoughts Related to COVID-19 in Mothers for Three Stages*

Dependent Variable	Group Comparison	Mean Difference	Standard Error	P	95% Confidence Interval
Child-parent centered transdiagnostic intervention with ACT	Posttest-Pretest	-6.71	1.16	0.001	[-4.73, -2.18]
	Follow-up - Pretest	-6.24	1.87	0.001	[-3.67, -2.29]
	Posttest-Follow-up	-0.39	0.23	1.00	[-0.85, 0.34]



Child-parent centered transdiagnostic intervention	Posttest-Pretest	-6.79	1.14	0.001	[-1.11, -4.39]
	Follow-up - Pretest	-5.90	1.05	0.001	[-1.73, -2.87]
	Posttest-Follow-up	-0.77	0.42	0.001	[-1.79, 0.32]
Control	Posttest-Pretest	-1.12	0.56	0.48	[-1.78, 1.14]
	Follow-up - Pretest	-1.06	0.72	0.40	[-1.73, 0.25]
	Posttest-Follow-up	-0.76	0.12	1.00	[-1.08, 0.51]

Results in Table 5 show that the difference in scores of the obsessive thoughts in the post-test compared to the pre-test in both intervention groups is statistically significant ( $P=0.001$ ). The difference in scores of the dependent variable at the follow-up time compared to the pre-test in both intervention groups is also statistically significant ( $P=0.001$ ). However, in the intervention groups, the difference in scores of the dependent variable at the follow-up time compared to the post-test was not statistically significant ( $P>0.05$ ). In the control group, there was no significant difference between the post-test scores compared to the pre-test, follow-up compared to the pre-test, and follow-up compared to the post-test ( $P>0.05$ ).

#### 4. Discussion and Conclusion

The findings indicated that, considering the intergroup test results and subsequent statistical analysis, the Bonferroni post-hoc test was also calculated. Results showed that the difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the post-test was 6.13, which is statistically significant ( $P=0.019$ ). The difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the follow-up was 6.78, which is statistically significant ( $P=0.011$ ). Therefore, according to the results of this table, the child-parent centered transdiagnostic intervention with ACT intervention has more therapeutic effects compared to the child-parent centered transdiagnostic intervention in reducing anxiety.

This research aligns with the previous (Barlow et al., 2010; Benjet et al., 2023; Bentley, 2017; Byrne et al., 2021; Etemadi et al., 2017; Farchione et al., 2012; Laposa et al., 2017; Talkovsky et al., 2017).

It can be explained that a special educational program for parents, providing information about recognizing their emotions in different situations and managing them at all times, especially in dealing with children, can effectively

reduce emotional problems in children and enhance the quality of the mother-child relationship. This program teaches parents practical and effective strategies for nurturing emotional self-regulation skills, independence, and problem-solving abilities. Acquiring these skills also leads to enhanced family harmony, reduced conflicts between children and parents, and the development of successful relationships with children. The centrality of the family setting in new programs also evidences this matter. In fact, another advantage of this approach is its family-centered perspective. All techniques develop within the cultivation field of current disorders and, in conjunction with children, parents also work on reconstructing their emotions and improving their parenting skills. Integrated transdiagnostic treatment is introduced in response to the limitations of cognitive-behavioral therapies, such as these treatments' failure to improve a significant portion of patients, the existence of numerous guides and treatment programs for each disorder, and the confusion in selecting the appropriate guideline for the patient (Etemadi et al., 2017; Farchione et al., 2012). The primary goal in unified transdiagnostic treatment is for individuals to acquire skills to effectively manage their negative emotions (Sadeghzadeh et al., 2019).

Laposa et al. (2017), Talkovsky et al. (2017), and Barlow et al. (2010) also evaluated the effectiveness of integrated transdiagnostic treatment programs on anxiety symptoms. They demonstrated that transdiagnostic treatment significantly reduces symptoms of depression. Indeed, focusing on treating a set of disorders rather than just one disorder in transdiagnostic treatment is the main reason for this method's effectiveness (Barlow et al., 2010; Laposa et al., 2017; Talkovsky et al., 2017).

Furthermore, the findings showed that considering the intergroup test results and subsequent statistical analysis, the Bonferroni post-hoc test was also calculated. Results showed that the difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the post-test was 1.73, which is not statistically

confirmed ( $P=0.077$ ). The difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the follow-up was 1.12, which is also not statistically confirmed ( $P=0.011$ ). Therefore, according to the results of the above table, there is no significant difference between the two experimental groups in terms of reducing obsessive thoughts related to COVID-19 in mothers ( $P>0.05$ ). This research aligns with the abovementioned studies. Talkovsky et al. (2017) also demonstrated in their study using therapeutic strategies of integrated transdiagnostic protocol in a group of 42 individuals diagnosed with concurrent anxiety and depression over 12 weeks of transdiagnostic treatment that this treatment was effective in improving symptoms of depression (Talkovsky et al., 2017).

Additionally, the findings showed that considering the intergroup test results and subsequent statistical analysis, the Bonferroni post-hoc test was also calculated. Results showed that the difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the post-test was 1.11, which is not statistically confirmed ( $P=0.09$ ). The difference between the child-parent centered transdiagnostic intervention group with ACT intervention and the child-parent centered transdiagnostic intervention group in the follow-up was 0.57, which is statistically confirmed ( $P=0.022$ ). Therefore, according to the results of the above table, there is no significant difference between the two experimental groups in terms of reducing obsessive thoughts related to COVID-19 in mothers ( $P>0.05$ ).

This research aligns with the aforementioned studies. It can be said that considering possibilities such as the speed of disease spread and the risk of mortality, obsessions with washing and hoarding in adults seem very logical (Ghasedi et al., 2022). The anxiety that stems from an individual's expectation of an adverse situation is exacerbated with COVID-19, leading to symptoms indicative of obsessions and potentially increasing obsessive washing and hoarding habits. An individual with obsessive thoughts uses a maladaptive method for emotion regulation. Transdiagnostic interventions help individuals learn how to confront their inappropriate emotions and respond to their emotions in a more adaptive manner. This method attempts to regulate emotional regulation habits by reducing the intensity and occurrence of emotional habits, reducing damage, and enhancing functioning. In an integrated approach, thoughts,

behaviors, and emotions interact dynamically, each playing a role in the emotional experience and influencing it (Barlow et al., 2010; Benjet et al., 2023).

Based on the findings of this research, it can be concluded that child-parent centered transdiagnostic treatment with and without maternal ACT intervention is effective on obsessive thoughts related to COVID-19 in mothers with corona anxiety. The results of the current hypothesis showed that there is no significant difference between the two transdiagnostic treatment groups (child-parent centered) with and without ACT intervention in terms of reducing obsessive thoughts related to COVID-19 in mothers.

## 5. Limitations & Suggestions

One of the limitations of this study is its reliance on self-reported measures, which could introduce bias or inaccuracies in the data due to social desirability or recall issues. Additionally, the sample size, though adequate for statistical analysis, limits the generalizability of the findings to broader populations. The study's design, being non-randomized and lacking a follow-up period longer than the immediate post-intervention phase, restricts our ability to ascertain the long-term efficacy of the interventions. Furthermore, the interventions were delivered in a controlled environment, which may not accurately reflect real-world settings where multiple external variables could affect the outcomes. Finally, the study focused solely on child-parent centered transdiagnostic interventions with and without ACT, excluding comparisons with other potentially effective therapeutic approaches, which could provide a more comprehensive understanding of treatment options for anxiety, child depression, and obsessive thoughts related to COVID-19 in mothers.

Based on the research results, it is suggested that practical exercises and skills of child transdiagnostic treatment combined with maternal acceptance and commitment intervention be made available in the form of educational sessions, workshops, films, and brochures for the prevention of problems. Given the increasing anxiety issues in our society and the positive effectiveness of these educational methods found in this research, educational methods of child transdiagnostic treatment combined with maternal acceptance and commitment intervention are among the notable and controversial orientations in the field of psychology and counseling that have gained widespread attention today; it is suggested that counselors and psychologists utilize the findings of this research.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed in this article.

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