Review

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Effectiveness of Acceptance and Commitment Therapy (ACT) in Group Format on Depressive Symptoms: Systematic Review

Grup Temelli Kabul ve Kararlılık Terapisinin (ACT) Depresif Belirtiler Üzerine Etkililiği: Sistematik Bir Derleme

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ABSTRACT

This study aims to systematically review randomized controlled trials that evaluate the effectiveness of group Acceptance and Commitment Therapy (ACT) in treating depressive symptoms. Studies published between January 2004 and June 2025 in English and Turkish languages were searched in databases such as Medline, PsycArticles, PubMed, Scopus, Web of Science, and TR Index. Ultimately, 17 studies meeting the inclusion criteria were included in this systematic review. In the studies, the intervention ranged from a minimum of 4 sessions to a maximum of 12 sessions. Most commonly, the interventions were implemented over 8 sessions. The studies included in this review utilized standardized measurement scales. Findings suggest that group-based Acceptance and Commitment Therapy is effective in reducing depressive symptoms and that this effect persists at follow-up measurements. As a result, group-based Acceptance and Commitment Therapy was found to be effective in treating depressive symptoms. Although most of the included studies had limited sample sizes and heterogeneous gender distribution, the inclusion of diverse groups -such as cancer patients, military personnel, and menopausal women- increases the generalizability of the findings. The results are clinically important because group therapy interventions are cost-effective and increase access to effective treatment for individuals.

Keywords: Acceptance and commitment, group therapy, depressive symptoms, effectiveness

ÖZ

Bu çalışmada depresif belirtilerin tedavisinde grup temelli Kabul ve Kararlılık Terapisinin etkililiğini ele alan randomize kontrollü çalışmaların sistematik olarak incelenmesi amaçlanmıştır. Ocak 2004 ile Haziran 2025 yılları arasında yayımlanmış, İngilizce ve Türkçe dillerindeki çalışmalar; Medline, PsycArticles, PubMed, Scopus, Web of Science ve TRDizin veri tabanlarında taranmıştır. Tarama sonucunda dahil etme kriterlerine uyan 17 çalışmaya bu sistematik derlemede yer verilmiştir. Bu çalışmalarda müdahale, en az 4 oturumdan en fazla 12 oturuma kadar değişiklik göstermiştir. Müdahalelerin çoğunlukla 8 oturum halinde uygulandığı görülmektedir. Bu derlemeye dahil edilen çalışmalarda standardize ölçüm araçları kullanılmıştır. Çalışmaların bulguları, grup temelli Kabul ve Kararlılık Terapisi'nin depresif belirtileri azaltmada etkili olduğunu ve izlem ölçümlerinde de bu etkinin devam ettiğini ortaya koymuştur. Sonuç olarak, grup temelli Kabul ve Kararlılık Terapisi'nin depresif belirtilerin tedavisinde etkili olduğu bulunmuştur. Dahil edilen çalışmaların çoğunda örneklem büyüklüğü sınırlıdır ve cinsiyet dağılımı heterojendir; ancak kanser hastaları, askerler, menopoz dönemindeki kadınlar gibi çeşitli örneklemleri kapsıyor oluşu genellenebilirliği artırmaktadır. Grup terapi müdahalelerinin maliyet-etkinlik açısından avantajlı oluşuyla ilişkili olarak etkili tedaviye erişimi artırmaları nedeniyle, bu sonuçlar klinik açıdan önem taşımaktadır.

Anahtar sözcükler: Kabul ve kararlılık, grup terapi, depresif belirti, etkililik

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Introduction

Depression is among the most common psychological problems worldwide. The World Health Organization (WHO 2017) proved that depression impacts approximately 4.4% of the world's population. Individuals suffering from depression often experience symptoms such as sadness, emptiness, constant restlessness, anhedonia, loss of energy, and dysfunction in daily activities. Moreover, individuals may experience symptoms such as outbursts of anger, guilt, feelings of worthlessness, difficulty concentrating, and disturbances in appetite and sleep patterns. Self-harm or suicidal thoughts may occur in more severe cases (American Psychiatric Association [APA] 2022). Given the high prevalence of depression and its substantial economic and social costs, only a small proportion of affected individuals are able to access appropriate treatments. Therefore, there is a critical need to improve access to effective interventions for those experiencing depression (Coto-Lesmes et al. 2020).

Acceptance and Commitment Therapy (ACT) is among the third-wave Cognitive Behavioral Therapy (CBT) approaches based on Applied Behavior Analysis (ABA), Functional Contextualism, and Relational Frame Theory (RFT)(Hayes et al. 2006). Drawing from the radical behaviorism tradition and supported by scientific research, ACT highlights the relationship between language and cognition while promoting mindfulness and present-moment awareness (Hayes et al. 1999). While traditional CBT aims to change thoughts and feelings, ACT focuses on changing an individual's relationship to these challenging internal experiences, thus promoting psychological flexibility (Harris 2023). ACT is based on the psychological flexibility model, which has six key components: contact with the present moment, acceptance, cognitive defusion, connection to the contextual self, values, and committed action. On the other hand, psychological inflexibility is defined as the absence of psychological flexibility and is marked by loss of contact with the present moment, experiential avoidance, cognitive fusion, attachment to a conceptual self, disengagement from values, and avoidance behaviors (Hayes et. al. 2006). Psychological flexibility is considered the ability of an individual to choose behaviors consistent with their values while remaining in contact with the present moment and within the context they are in, without being overly influenced by their internal experiences (Hayes et al. 2004, Bond et al. 2006). Psychological flexibility is regarded as both an effective mechanism for preventing the development of psychopathology and a positive skill for enhancing and maintaining an individual's psychological well-being (Hayes et al. 2006). Therefore, the skill of psychological flexibility also aids in the continuity of an individual's well-being and the maintenance of their mental health (Kashdan and Rottenberg 2010). Similarly, self-compassion and well-being were found to be related to psychological flexibility, suggesting that higher psychological flexibility is associated with higher self-compassion and well-being (Marshall and Brockman 2016).

ACT suggests that the lack of psychological flexibility, defined as psychological inflexibility, is one of the main underlying reasons for psychopathology and psychological problems (Hayes et al. 2006). The literature indicates a positive relationship between depression and psychological inflexibility (Berman et al. 2010, Bardeen and Fergus 2016). Additionally, studies demonstrate that experiential avoidance and cognitive fusion, which are components of psychological inflexibility, are directly associated with depression (Tull et al. 2004, Chawla and Ostafin 2007, Dinis et al. 2015, Solé et al. 2016, Moroz and Dunkley 2019). At the same time, psychological inflexibility impacts an individual's way of coping with challenging life problems (Luoma et al. 2013, Marshall and Brockman 2016). Therefore, ACT intends to enhance psychological flexibility while treating depression (Hayes et al. 2006). In order to achieve this, ACT puts its focus on the six components of psychological flexibility (Hayes et al. 2013). In ACT, techniques such as experiential exercises, metaphors, mindfulness practices, value identification, and value-focused actions are used to enhance psychological flexibility (Hayes et al. 2012). Through the functional analysis of the individuals' behaviors, ACT guides individuals to develop new behaviors that are compatible with their values. Rather than altering directly the negative thoughts and feelings related to depressive symptoms, ACT encourages acceptance and value-based actions (e.g. even if an individual feels unhappy and unmotivated, if spending time with family is a core value, the person may still choose to join family dinner despite experiencing these negative emotions) by restructuring the individual's relationship with these experiences (Hayes et al. 2006). Studies show that the practices used in ACT have a significant role in increasing psychological flexibility (Muto et al. 2011, Levin et al. 2016, Räsänen et al. 2016, Gloster et al. 2020,

Levin et al. 2020, Viskovich and Pakenham 2020, Yüncü and Aktan 2024), and that improvements in psychological flexibility lead to positive clinical changes (Hayes et al. 2006, Ruiz 2010, Bluett et al. 2014). On the other hand, there is a negative relationship between depression and psychological flexibility (Tull et al. 2004, Dinis et al. 2015, Bardeen and Fergus 2016, Moroz and Dunkley 2019, Trindade et al. 2020, Puolakanaho et al. 2023, Wang et al. 2023, Karakış and Karaaziz 2024). Based on these findings, it is concluded that ACT reduces depressive symptoms through increasing psychological flexibility. Since ACT has a process-based nature, it can be applied in a variety of settings, such as group work, online platforms, smartphone applications, and telehealth (Dindo et al. 2017).

Even though both group ACT and individual ACT are based on the same processes, participants in group-based ACT also benefit from group interaction. Different from individual therapy, group ACT gives individuals the opportunity to connect with others, promotes shared learning experiences, and reduces feelings of loneliness, and this socialization adds a unique dimension to ACT (Coto-Lesmes et al. 2020). Similar to individual ACT, group-based ACT interventions focus on the components of psychological flexibility - acceptance, cognitive defusion, contact with the present moment, connection to the contextual self, values, and committed action (Mohabbat-Bahar et al. 2015, Coto-Lemes et al. 2020). In addition to depression, group-based ACT was found to be effective in other emotional disorders, such as anxiety, psychological difficulties experienced by patients with chronic illnesses (Lappalainen et al. 2015, Golestanifar and Dasht Bozorgi 2020).

Given the high prevalence of depression, group therapy interventions for its treatment become obvious. Group therapy is a cost-effective and alternative treatment model that makes it useful in low- and middle-income societies, as well as in high-income areas with limited mental health resources. Moreover, it is time-effective (Kalodner and Hanus 2010). In addition to these economic advantages, group therapy provides important therapeutic benefits that result from the interactions between participants. Moreover, the feelings of isolation and loneliness that participants experience are reduced in group therapy, and participants have the opportunity to learn new coping strategies and model behaviors through shared experiences (Rath et al. 2017). Although there is a recent meta-analysis (Ferreira et al. 2022) evaluating the effectiveness of group-based ACT in reducing both depressive and anxiety symptoms, this meta-analysis was limited to studies with adult samples and did not include research conducted with children or adolescents. In contrast, this systematic review not only focuses exclusively on the effectiveness of group ACT for depressive symptoms but also incorporates studies that include children and adolescent populations, thereby extending the scope beyond adult samples, as in Ferreira and colleagues' (2022) study. Furthermore, given the notable increase in the number and diversity of recent studies employing ACT in various populations, there is a growing need for a focused review of the literature. Therefore, this review aims to fill these gaps by including research published after 2022 and broadening the target samples to provide a more comprehensive and up-to-date understanding of the effectiveness of group-based ACT interventions for depression. In addition, by including not only face-to-face interventions but also online interventions in this systematic review, it becomes possible to examine both face-to-face and online group interventions.

All in all, after considering the advantages of group therapy as well as ACT's potential as an effective intervention for depression, this review aims to evaluate the effectiveness of group ACT as an accessible therapeutic approach in the treatment of depressive symptoms. In other words, the aim of this review is to inform healthcare decision-making for individuals experiencing depressive symptoms. Furthermore, it seeks to improve access to treatment by evaluating randomized controlled trials (RCTs) of face-to-face and online group ACT interventions with the primary aim of reducing depressive symptoms.

Methods

Search Strategy

Studies published in English and Turkish between January 2004 and June 2025 were searched in databases such as PubMed, Scopus, Web of Science, Medline, PsycArticles, and TR Index. The keywords

used throughout the search were as follows: Acceptance and Commitment Therapy AND Group AND

Inclusion and Exclusion Criteria

Inclusion criteria were as follows: (1) ACT should be the primary intervention directly applied to the ACT protocol, (2)ACT should be conducted in a group format, (3) depression/depressive symptoms should be the primary outcome, more than one depressive symptom should be included, and depressive symptoms should be assessed using a standardized scale, (4) the study should be a RCT, (5) the study should not be a pilot study, (6) the publication should be in Turkish or English.

Exclusion criteria were as follows: (1) ACT is not the primary intervention or does not include the direct ACT protocol, even if ACT components are used, (2) the ACT intervention is conducted in an individual format, (3) the study is a self-help program, (4) depression/depressive symptoms are not the primary outcome or a standardized scale is not used (e.g., symptom presence/level assessed solely through expert opinion) or only a single depressive symptom is measured, (5) the study does not have an experimental design (e.g., qualitative research, meta-analysis), (6) the study is a pilot study, (7) the study is not a RCT, (8) the publication is not in Turkish or English. Both face-to-face and online formats have been accepted.

The study inclusion process is shown in the PRISMA flow diagram (Moher et al. 2009) (Figure 1).

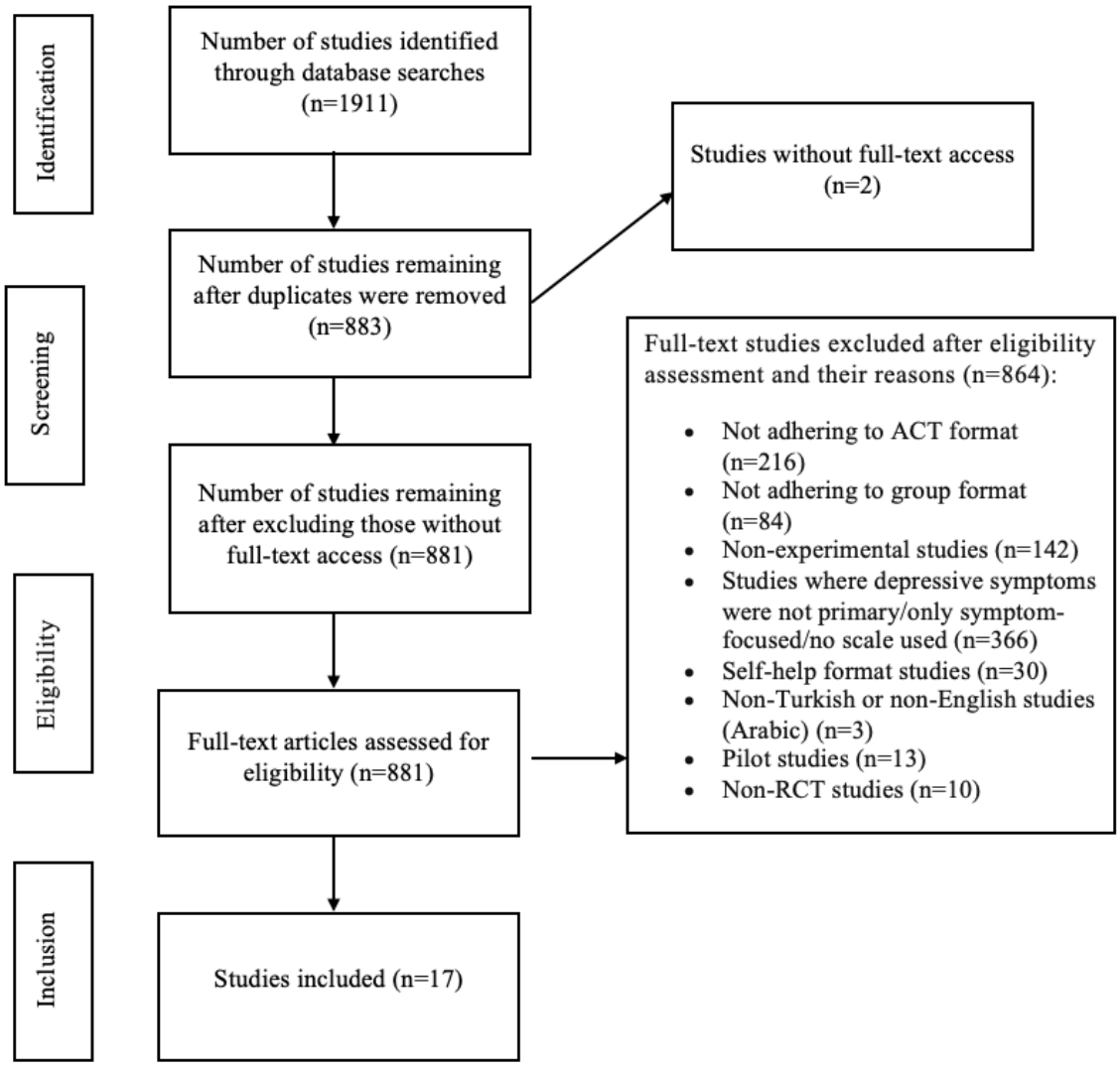

Figure 1. PRISMA flow diagram

Study Selection Process

The selection of databases was informed by those utilized in prior systematic reviews focusing on ACT. As a result of the screening, a total of 1911 studies were identified (PubMed: 158, Scopus: 769, Web of Science: 623, Medline: 214, PsycArticles: 34, TR Index: 113). After removing duplicates, 883 studies remained. Two studies were inaccessible. The remaining 881 studies were reviewed in full text and evaluated according to inclusion and exclusion criteria. Following the evaluation, 17 studies were included in the final version of the review.

Results

The included studies were conducted between January 2004 and June 2025, examining group ACT interventions delivered face-to-face (14 studies), online (2 studies), and a comparison of both formats (1 study).

Table 1 provides an overview of the 17 reviewed studies, organized alphabetically by the first author's last name. The table includes details on the author, year, and country, study design, research topic, sample characteristics, groups, session structure, measurement scales, measurement process, results, and limitations (Table 1). Additionally, Table 2 presents information on the inclusion and exclusion criteria, number of therapists, and group therapy techniques used in the reviewed studies (Table 2).

Table 1. Characteristics of the randomized controlled trials

Study	Design	Purpose	Sample	Groups	Sessions	Measures	Measurement	Results	Limitations
Ebrahimi et al. 2022 Iran	RCT	The effect of ACT and SSRI treatment on depression and quality of life in individuals with OCD.	30 participants (3 dropouts) 19 women, 8 men Avg. Age: 32	ACT group n=15 (2 dropouts) SSRI group n=15 (1 dropout)	8 sessions (4 weeks, 2 sessions per week, 1 hour each) Face-to-face	WHOQOL-BREF DASS-42	Pre-test Post-test 3-month follow-up	Both the ACT and SSRI groups were effective in reducing depression symptoms. However, the SSRI group was more effective in reducing depression symptoms compared to the ACT group. Both groups improved quality of life, and the treatment effects continued during the follow-up period.	Participants were selected from a university-affiliated center, so generalization is limited. Intensive ACT sessions could make it difficult for participants to practice sufficiently.
Fernández-Rodríguez et al. 2021 Spain	RCT	Comparison of the effectiveness of Group ACT and BA therapies in the treatment of anxiety and depression in cancer survivors.	66 participants (20 dropout) %93.5 women, %6.5 men Age: 34-62 Avg. Age: 51.49	ACT group n=22 (10 dropout) BA group n=22 (5 dropout) Control group n= 22 (5 dropout)	12 sessions (1 session per week, 90 minutes) Face-to-face	HADS BDI EROS AAQ-II BADS CSQ-8	Pre-test Post-test 3-month follow-up	Both ACT and BA groups were effective in reducing depression. ACT demonstrated better short-term results in avoidance and rumination.	Since the sample was predominantly female, generalization was limited. Random attrition has occurred in the follow-up data.
González-Fernández et al. 2018 Spain	RCT	Comparison of the effectiveness of ACT and BA therapies in the treatment of anxiety and depression in cancer survivors.	52 participants (9 dropout) %92.3 women, %7.7 men Age: 34-62 Avg Age: 51.66	ACT group n=17 (4 dropout) BA group n=18 (3 dropout) Control group n=17 (2 dropout)	12 sessions (1 session per week, 90 minutes) Face-to-face	HADS EROS AAQ-II BADS	Pre-test Post-test	Both ACT and BA groups reduced depression. ACT was more effective than BA in variables of social functioning disorder, avoidance, and rumination.	Since the sample was predominantly female, generalization is limited. There were no follow-up measurements. There were differences in some variables between the initial groups.

Table 1. Characteristics of the randomized controlled trials

Study	Design	Purpose	Sample	Groups	Sessions	Measures	Measurement	Results	Limitations
Grégoire et al. 2018 Canada	RCT	The effect of ACT group intervention on psychological flexibility, mental health, and school engagement in university students.	144 participants	ACT group n=72 %76.4 women, %23.6 men Avg Age: 32.55 Control group n=72 %70.8 women, %29.2 men Avg. Age: 30.88	4 sessions (1 session per week, 150 minutes) Face-to-face	PHQ-9 GAD-7 FFMQ MEAQ AES	Pre-test Post-test	The ACT group demonstrated higher psychological flexibility, lower stress, depression, and anxiety symptoms, and better school engagement compared to the control group.	The intervention duration was short. Long-term effects were evaluated. The study included only university students.
Ksiksou et al. 2024 Morocco	RCT	The effect of ACT on depression, anxiety, stress, and psychological flexibility in women diagnosed with breast cancer.	40 participants %100 women Avg. Age: 46.34	ACT group n=20 Control group n=20	6 sessions (1 session per week, 120 minutes and 30-minute homework assignments) Face-to-face	DASS-21 AAQ-II	Pre-test Post-test 2-month follow-up	In the ACT group, depression, anxiety, and stress were decreased; psychological flexibility and acceptance were increased. The effects persisted for 2 months.	Self-report scales might have led to social desirability bias. Long-term effects were not assessed, and since the study was based on a single cancer center, generalization was limited.
Lappalainen et al. 2014 Finland	RCT	Comparison of the effects of group-based and internet-based ACT in individuals with depressive symptoms.	38 participants (1 dropout) %68.4 women, %31.6 men Avg. Age: 44.61	ACT group n=19 (1 dropout) iACT (internet-based) group n=19	ACT group 6 sessions (1 session per week, 90 minutes) Face-to-Face iACT group 6 weeks of guided support Online	BDI-II PFQ	Pre-test Post-test 18-month follow-up	Both groups showed similar levels of improvement in depressive symptoms and psychological flexibility. The effect lasted for 18 months.	The small sample size was a limitation.

Table 1. Characteristics of the randomized controlled trials

Study	Design	Purpose	Sample	Groups	Sessions	Measures	Measurement	Results	Limitations
Liu et al. 2023 China	RCT	The effect of group ACT on depressive symptoms in individuals with post-acute stroke depression.	140 participants (1 dropout) 48 women, 91 men Avg Age: 61.91	ACT group n=70 Control group n=70 (1 dropout)	7 sessions (4 weeks, 2 sessions per week, 45-90 minutes) Face-to-face	HAM-D AAQ-II CFQ PSQI SF-12V2 CaSM	Pre-test Post-test 3-month follow-up	The ACT group showed a significant improvement in depressive symptoms compared to the control group, and these effects persisted during the 3-month follow-up period. Additionally, improvements were observed in sleep quality, psychological flexibility, and cognitive fusion.	The study was limited in its generalizability as it was conducted at a single center. Participants were predominantly individuals with mild depression. The effects on more severe cases of depression were not investigated.
Moghanloo et al. 2015 Iran	RCT	The effect of ACT on depression, psychological well-being, and guilt feelings in children aged 7-15 with diabetes.	34 participants (6 dropout) %50 women, %50 men Avg. Age: 10.47	ACT group n=17 (3 dropout) Control group n=17 (3 dropout)	10 sessions (1 session per week, 90 minutes) Face-to-face	RCDS Eysenck Feelings of Guilt Scale SWLS	Pre-test Post-test	In the ACT group, depression and feelings of guilt decreased, and psychological well-being increased. No significant changes were observed in the control group.	The small sample size and the fact that the study was conducted at only one center limited the generalizability.
Monfaredi et al. 2022 Iran	RCT	The effects of ACT on mood, sleep quality, and quality of life in women during menopause.	86 participants %100 women Avg. Age: 54.87	ACT group n=43 Control group n=43	8 sessions (1 session per week, 60-90 minutes) Face-to-face	DASS-21 MENQOL PSQI	Pre-test Post-test	In the ACT group, depression, anxiety, and stress scores decreased more than in the control group. No differences were found between the groups in terms of sleep quality and quality of life.	The sample size was small. No follow-up was conducted. Interactions were limited due to pandemic conditions.
Østergaard et al. 2019 Norway	RCT	The effect of the combination of ACT and ABM on residual symptoms of depression.	244 participants (9 dropout) 178 women, 66 men Age: 18-65 Avg. Age: 38	ACT group n=59 (4 dropout) ABM group n=60 ACT + ABM group n=65 (5 dropout) Control group n=60	8 sessions (1 session per week, 60-90 minutes) Face-to-face	BDI-II HAM-D	Pre-test Post-test 1, 2, 6, 12-month follow-up	In the ACT groups, a significant reduction in depressive symptoms was achieved over 12 months. No additional benefit of ABM was found when added to ACT. In the control groups, depressive symptoms returned to baseline levels.	The lack of monitoring of other interventions received by the control groups constituted a limitation.
Otared et al. 2021 Iran	RCT	The effects of group ACT on depression and anxiety symptoms and quality of life in healthcare workers during the COVID-19 pandemic.	40 participants	ACT group n=20 %45 women, %55 men Avg. Age: 33.4 Control group n=20 %50 women, %50 men Avg. Age: 31.5	8 sessions (1 session per week, 75 minutes) Face-to-face	BDI-II BAI QOLI GAF AAQ-II	Pre-test Post-test	The ACT group showed a significant reduction in depression, anxiety, and psychological flexibility levels compared to the control group, and a significant improvement in quality of life was found.	The generalizability was limited as participants were selected from clinics in a single city. Long-term outcomes were not examined.

Table 1. Characteristics of the randomized controlled trials

Study	Design	Purpose	Sample	Groups	Sessions	Measures	Measurement	Results	Limitations
Shahkaram et al. 2024 Iran	RCT	Comparison of the effects of ACT and UP interventions on depression, anxiety, rumination, and life satisfaction in IBS patients.	30 participants (12 dropout) %83.33 women, %16.67 men	ACT group n=15 (6 dropout) Avg. Age: 33.67 UP group n=15 (6 dropout) Avg. Age: 33.47	8 sessions (1 session per week, 45-60 minutes) Face-to-face	DASS-21 RRS SWLS	Pre-test Post-test	Both treatments were found effective in reducing depression, anxiety, and rumination. No significant difference was found between ACT and UP in terms of life satisfaction. UP was found to be more effective than ACT in reducing anxiety.	The absence of a control group and the lack of follow-up measurements constituted limitations.
Shareh and Robati 2022 Iran		The effects of group ACT on depression, hopelessness, suicidal thoughts, and cognitive flexibility in soldiers.	60 participants %100 men	ACT group n=30 Control group n=30	8 sessions (1 session per week, 90 minutes) Face-to-face	BDI-II BHS BSSI CFI	Pre-test Post-test	In the ACT group, compared to the control group, there was a significant reduction in depression, hopelessness, and suicidal thoughts, as well as a significant increase in cognitive flexibility.	The limitation for generalization was created by the sample consisting solely of soldiers. Long-term effects were not evaluated.
Shojaeifar et al. 2022 Iran	RCT	Investigation of the effects of ACT on postpartum depression.	52 participants %100 women	ACT group n=26 Control group n=26	8 sessions (1 session per week, 90 minutes) Faco-to-face	BDI-II	Pre-test Post-test 2-month follow-up	A significant reduction in depression scores was observed in the ACT group. The effects persisted during the follow-up period.	The results were limited to women with postpartum depression. Long-term effects were evaluated.
van Aubel et al. 2020 Holland	RCT	The effect of ACT in daily life on young adults with subthreshold depression and psychosis symptoms.	53 participants	ACT group n=25 %84 women, %16 men Avg. Age: 20.64 Movie group n=28 %68 women, %32 men Avg. Age:21.36	ACT group 5 sessions (1 session per week, 90 minutes) Face-to-face Movie group 5 sessions movie watching and group discussions (1 per week) Face-to-face	MADRS IDS-SR STAI-T SCL-90 CAPE FIT-60	Pre-test Post-test 6- and 12-month follow-up	In the ACT group, compared to the movie group, there was a faster decline in depression scores (MADRS). However, no difference was found between the two groups in terms of other measures (IDS-SR, STAI-T, SCL-90, CAPE).	Participants experienced long waiting periods to start the intervention. No significant change was observed in psychological flexibility or positive affect.

Table 1. Characteristics of the randomized controlled trials

Study	Design	Purpose	Sample	Groups	Sessions	Measures	Measurement	Results	Limitations
Zemestani and Mozaffari 2020 Iran	RCT	The effects of group ACT on depression symptoms, psychological flexibility, emotion regulation, and psychological well-being in physically disabled individuals.	60 participants (8 dropout) %73 women, %27 men	ACT group n=30 (7 dropout) Avg. Age: 23.72 Control group n=30 (1 dropout) Avg. Age: 25.18	8 sessions (1 session per week, 90 minutes) Face-to-face	BDI-II AAQ-II ERQ-R SPWB	Pre-test Post-test 2-month follow-up	The ACT group showed a significant reduction in depression scores, as well as significant increases in psychological flexibility, adaptive emotion regulation, and psychological well-being compared to the control group. The effects persisted during the follow-up period.	The risk of expectation bias due to the experimental group participants being aware of the intervention and the short follow-up period were limitations.
Zettle et al. 2011 USA	RCT	Comparison of the effects of group ACT and CT on depression.	25 participants (4 dropout) %100 women	ACT group n=12 (1 dropout) CT group n=13 (3 dropout)	12 sessions (1 session per week, 90 minutes) Face-to-face	DBI ATQ ATQ-B DAS	Pre-test Post-test 2-month follow-up	The ACT group showed a larger and faster reduction in depression symptoms compared to the CT group. The effects of ACT persisted during the 2-month follow-up period.	The small sample size and the fact that participants consisted solely of women were limitations for generalization. The failure of some scales to meet the assumption of homoscedasticity might have limited the accuracy of the analyses.

AAQ-II: Acceptance and Action Questionnaire-II, ABM: Attention Bias Modification, ACT: Acceptance and Commitment Therapy, AES: Academic Engagement Scale, ATQ: Automatic Thoughts Questionnaire, ATQ-B: Automatic Thoughts Questionnaire - Believability, Avg. Age: Average Age, BA: Behavioral Activation, BADS: Behavioral Activation for Depression Scale, BAI: Beck Anxiety Inventory, BDI: Beck Depression Inventory, BHS: Beck Hopelessness Scale, BSSI: Beck Scale for Suicide Ideation, CAPE: Community Assessment of Psychic Experiences, CaSM: The Confidence After Stroke Measure, CFQ: Cognitive Fusion Questionnaire, CFI: Cognitive Flexibility Inventory, CSQ-8: Client Satisfaction Questionnaire-8, CT: Cognitive Therapy, DAS: Dysfunctional Attitude Scale, DASS: Depression Anxiety Stress Scales, EROS: Environmental Reward Observation Scale, ERQ-R: The Emotion Regulation Questionnaire Reappraisal Subscale, FFMQ: Short version of the Five Facet Mindfulness Questionnaire, FIT-60: Flexibility Index Test, GAD-7: General Anxiety Disorder Questionnaire, GAF: Global Assessment of Functioning Scale, HADS: Hospital Anxiety and Depression Scale, HAM-D: Hamilton Depression Rating Scale, IBS: Irritable Bowel Syndrome, IDS-SR: Inventory of Depression Symptomatology Self-Report, MADRS: Montgomery and Asberg Depression Rating Scale, MEAQ: Multidimensional Experiential Avoidance Questionnaire, MENQOL: The Menopause Quality of Life, OCD: Obsessive-Compulsive Disorder, PHQ: Patient Health Questionnaire, PSQI: Pittsburgh Sleep Quality Index, QOLI: Quality of Life Inventory, RCT: Randomized Controlled Trial, RCDS: Reynolds Child Depression Scale, RRS: Rumination Response Scale, , SCL-90: Symptom Checklist, SF-12v2: Short Form Survey Version 2, SPWB: Scales of Psychological Well-Being, SSRI: Selective Serotonin Reuptake Inhibitors, STAI-T: State-Trait Anxiety-Inventory, SWLS: Satisfaction with Life Scale, UP: Transdiagnostic Treatment, WHOQOL-BREF: World Health Organization Quality of Life Scale.

Table 2. Details of group therapies

Study	Inclusion Criteria	Exclusion Criteria	Number of Therapists	Group Therapy Techniques
Ebrahimi et al. 2022	According to DSM-5 diagnosis of OCD, Being between the ages of 18-65, Not having other illnesses such as bipolar disorder, psychotic disorders, mental retardation, Giving consent to participate in the study, Not having received any treatment within the 30 days prior to participating in the study.	According to DSM-5 diagnosis of OCD, Being between the ages of 18-65, Not having other illnesses such as bipolar disorder, psychotic disorders, mental retardation, Giving consent to participate in the study, Not having received any treatment within the 30 days prior to participating in the study.	2	Exercises focusing on cognitive defusion, acceptance, mindful awareness, values, and value-oriented commitment were applied to develop psychological flexibility.

Table 2. Details of group therapies

Study	Inclusion Criteria	Exclusion Criteria	Number of Therapists	Group Therapy Techniques
Fernández-Rodríguez et al. 2021	Being between the ages of 18-65, Having completed oncological treatment, Not exhibiting any symptoms of oncological disease, Scoring ≥8 on one of the HADS subscales.	Receiving another form of psychotherapy, Having physical or cognitive impairments that would hinder participation.	2	ACT: Focused on psychological flexibility processes. Used metaphors, experiential exercises, behavioral programming, and value-based action planning. Added social skills training and problem-solving as needed. BA: Focused on re-establishing daily routines and increasing rewarding activities. Employed techniques such as self-observation, behavioral programming, functional behavior analysis, behavior modeling, and changing avoidance behaviors. Included social skills training and problem-solving techniques when necessary.
González-Fernández et al. 2018	Being between the ages of 18-65, Having completed oncological treatment, Not exhibiting any symptoms of oncological disease, Scoring ≥8 on one of the HADS subscales.	Receiving another form of psychotherapy, Having physical or cognitive impairments that would hinder participation, Situations where group therapy is deemed inappropriate.	2	ACT: Focused on psychological flexibility processes. Heavily utilized metaphors and experiential exercises. Applied behavioral programming and social skills training for activation and value-based actions. BA: Re-establishment of daily routines, Increasing rewarding activities, Employed techniques such as self-observation, behavior modeling, creating activity hierarchies, and behavioral programming. Used problem-solving and social skills training when necessary.
Grégoire et al. 2018	Being a university student, Being 18 years old and above, Experiencing mental health issues or agreeing to participate with the aim of preventing such issues.	Not being deemed suitable for group work due to psychological or medical conditions.	4	Utilized techniques such as cognitive defusion, mindful awareness, acceptance, and value-based action to develop psychological flexibility. Participants were encouraged to perform homework assignments like meditation and mindfulness practices at home. Implemented exercises focusing on behavioral commitment aligned with values and self-observation.
Ksiksou et al. 2024	Having been diagnosed with breast cancer, Scoring ≥10 on the DASS-21 scale, Not having any other serious illness, Being at least a primary school graduate, Being willing and motivated to participate in group activities, Being able to participate in both in-group and home-based activities.	Having a psychotic disorder, Receiving psychopharmacological and/or psychotherapeutic treatment, Being unwilling to participate in ACT training.	1	ACT: The aim was to develop psychological flexibility. Techniques focusing on acceptance, cognitive defusion, mindful awareness, and value-oriented orientation were applied. Included metaphors, experiential exercises, and mindfulness practices. Homework assignments were given to participants after each session (e.g., exercises on coping with emotions and thoughts with awareness).
Lappalainen et al. 2014	Experiencing depressive symptoms, Being 18 years of age or older, Having internet access at home and basic computer skills, Not receiving concurrent treatment for depression or other psychological issues.	Receiving another form of psychotherapy, Having a serious medical condition.	1	ACT: Focused on psychological flexibility processes. Each session included the use of metaphors and experiential exercises. Participants were supported with homework assignments that involved value-based actions. iACT: Over six weeks, six modules covering the core processes of ACT were presented: Creative hopelessness, values, value-based actions, cognitive defusion, present-moment awareness, and

Table 2. Details of group therapies

Study	Inclusion Criteria	Exclusion Criteria	Number of Therapists	Group Therapy Techniques
				acceptance. Participants engaged with the modules at their own pace and received weekly assignments that included metaphors and experiential exercises. Therapists provided written feedback on a weekly basis and suggested additional exercises when necessary.
Liu et al. 2023	Having an acute stroke diagnosis (confirmed by magnetic resonance imaging or computed tomography), The onset of the most recent stroke occurring within the last 2 weeks, Scoring at least 8 points on the HAM-D scale, Having a clear consciousness and being able to communicate effectively with the researchers, Being at least a primary school graduate, Signing an informed consent form and agreeing to participate in the group intervention on time.	Having a history of psychological disorders or dementia, Having a history of psychiatric medication or sedative use in the last 6 months, Receiving a diagnosis of cognitive impairment through the Mini Mental State Examination, Having received psychotherapy or experiencing severe psychotic symptoms in the last 3 months, Having a history of substance abuse or other neurological disorders.	2	ACT: Cognitive defusion and mindful awareness techniques were used to enhance psychological flexibility. The aim was to encourage self-observation through exercises such as self-portrayal, labeling, and unlabeling. The "well and shovel" metaphor was employed. Relaxation techniques, including abdominal breathing and relaxation with music, were utilized. Exercises were conducted to define values, set value-based goals, and commit to actions. ACT metaphors were used.
Moghanloo et al. 2015	Being between the ages of 7 and 15, Having been diagnosed with diabetes for at least one year, Not having a serious psychiatric disorder.	Needing significant changes in insulin dosage during the study, Being unable to attend long sessions due to acute or chronic medical conditions, Having serious medical complications related to diabetes, Receiving psychiatric treatment or using psychotropic medications, Having substance abuse during the course of the study.	1	Mindful awareness and acceptance techniques, along with cognitive defusion exercises ("journey with posters", "milk, milk, milk") were applied. Activities focused on defining values and committed actions based on those values were conducted. ACT metaphors such as "chessboard", "thinking of pink elephants", "the man in the cave", and "the farmer and the donkey" were extensively used. Relapse prevention and internal dialogue exercises were included.
Monfaredi et al. 2022	Being in the normal menopausal process, Being between the ages of 45 and 60, Being married, Having at least a middle school education, Having a menopausal duration of less than 10 years, Scoring mild-moderate levels on the DASS-21 scale: anxiety (4-8 points), depression (5-11 points), and stress (8-13 points).	Alcohol, tobacco, or herbal medication use, Presence of systemic diseases (cardiovascular, gastrointestinal, etc.), Use of effective medications or tranquilizers aimed at reducing menopausal symptoms, Having participated in similar trainings such as relaxation or yoga, Having a history of severe psychiatric disorders.	1	Mindful awareness and present-moment techniques, acceptance and cognitive defusion exercises, activities for identifying values and value-focused actions, ACT metaphors (guest metaphor, well and shovel metaphor, bus metaphor), and techniques for creating distance from thoughts (such as observing thoughts, role-playing) were applied.
Østergaard et al. 2019	Being between the ages of 18 and 65, Having a history of Major Depressive Disorder and being in the remission phase.	Having neurological diseases, bipolar disorder, psychosis, substance addiction, or attention deficit and hyperactivity disorder.	2	ACT: Cognitive defusion, acceptance, mindful awareness, and present-moment awareness techniques, exercises for identifying values and developing value-focused commitment, contextual self-studies, and experiential exercises were applied. ABM: Computer-based tasks aimed at changing attentional bias were given. Attention retraining exercises were conducted to teach shifting attention away from negative stimuli.
Otared et al. 2021	Being a healthcare worker experiencing depression and anxiety symptoms during the COVID-19 period,	Not wanting to continue treatment,	1	Cognitive defusion and mindful awareness techniques aimed at developing psychological flexibility, exercises for creating distance from

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Table 2. Details of group therapies

Study	Inclusion Criteria	Exclusion Criteria	Number of Therapists	Group Therapy Techniques
	Having sought treatment at psychotherapy clinics.	Attending sessions, no more than twice.		thoughts, acceptance, and value-focused actions, and present-moment awareness practices were applied. Emphasis was placed on the processes of identifying values and developing commitment.
Shahkaram et al. 2024	Having been diagnosed with IBS by a specialist doctor, Being over the age of 18, Being literate.	Not wanting to continue treatment, Missing sessions more than twice.	1	ACT: Mindful awareness and acceptance techniques were used. Cognitive defusion, value identification, and value-focused commitment exercises were applied. ACT metaphors such as the "chessboard" and "thinking about pink elephants" were employed. Present-moment awareness and creating distance from thoughts practices were included.
Shareh and Robati 2022	Being between the ages of 18-65, Experiencing symptoms of depression, suicidal thoughts, or hopelessness during military service.	Having a prior severe psychiatric diagnosis (such as bipolar disorder), Substance use, Not continuing psychotherapy.	1	Mindful awareness and present-moment awareness exercises were applied. Acceptance, cognitive defusion, and value-focused action planning techniques were implemented. ACT metaphors and experiential exercises were used.
Shojaeifar et al. 2022	Being within 2-6 months postpartum, Being between the ages of 18-54, Having at least a high school diploma, Having a BDI score in the range of 20-28 (moderate depression).	Having severe psychiatric disorders such as psychosis, Use of psychiatric medication, Having a prior history of depression, Not wanting to continue therapy.	1	Mindful awareness, acceptance, cognitive defusion, and value determination techniques were applied. Present-moment awareness and action commitment exercises were implemented. Behavioral commitment in line with values and exercises on creating distance from thoughts were conducted.
van Aubel et al. 2020	Being between the ages of 16-25, Having subthreshold symptoms of depression or psychosis (MADRS score >10 or CAPE positive distress subscale ≥2).	Psychiatric treatment or medication use, Conditions requiring intensive care.	1	ACT: Mindful awareness, acceptance, and cognitive defusion techniques were applied. Value-focused actions and creative hopelessness exercises were conducted. ACT metaphors were used.
Zemestani and Mozaffari 2020	Being over the age of 18, Receiving a diagnosis of moderate or severe depression according to DSM-5 and having a BDI-II score of 20 or above, Having a physical disability level between 25-50%, Being at least a high school graduate, Voluntarily participating in the study.	Having severe psychiatric disorders (psychosis, mania), Experiencing suicidal thoughts, substance use, or severe cognitive impairment, Having received psychotherapy within the last year, Attending fewer than 3 sessions of treatment.	1	Processes aimed at developing psychological flexibility through ACT (acceptance, cognitive defusion, present-moment awareness, contextual self, values, and committed action) were studied. Experiential exercises and self-compassion practices were conducted. As homework, behavioral commitment tasks and activities aligned with values were assigned.
Zettle et al. 2011	Being female, Being over the age of 20, Receiving a diagnosis of moderate or severe depression (BDI score above 20, MMPI depression T score above 70, HAMD score above 14).	Use of antidepressant or sedative medication, Initiation of medication use during the course of the study.	1	ACT: Cognitive defusion, mindful awareness, acceptance, and experiential exercises were applied. Participants were encouraged to engage in value-based actions. Work has been done on creating distance from depressive thoughts and addressing these thoughts within their context. CT: Cognitive restructuring and behavioral hypothesis testing techniques were applied. Cognitive reevaluation work was conducted on depressive thoughts. Focus was placed on group discussions and individual experiences.

ABM: Attention Bias Modification, ACT: Acceptance and Commitment Therapy, BA: Behavioral Activation, BDI: Beck Depression Inventory, CAPE: Community Assessment of Psychic Experiences, CT: Cognitive Therapy, DASS: Depression Anxiety Stress Scales, HADS: Hospital Anxiety and Depression Scale, HAMD: Hamilton Depression Rating Scale, IBS: Irritable Bowel Syndrome, MADRS: Montgomery and Asberg Depression Rating Scale, MMPI: The Minnesota Multiphasic Personality Inventory, OCD: Obsessive-Compulsive Disorder.

Research Design of Included Studies

Since one of the inclusion criteria was that the studies must be randomized controlled trials (RCTs), all included studies meet this criterion. While all studies conducted pre- and post-test measurements, seven did not include follow-up measurements. 10 studies with follow-up measurements, four included follow-up measurements at 2 months (Zettle et al. 2011, Zemestani and Mozaffari 2020, Shojaeifar et al. 2022, Ksiksou et al. 2024), three at 3 months (Fernández-Rodríguez et al. 2021, Ebrahimi et al. 2022, Liu et al. 2023), and three at 12 months (Lappalainen et al. 2014, Østergaard et al. 2019, van Aubel et al. 2020).

Sample Characteristics

The studies were conducted in various countries, including Iran (8), Spain (2), the United States (1), China (1), the Netherlands (1), Finland (1), Norway (1), Canada (1), and Morocco (1) (see Table 1).

The total number of participants ranged from 25 (Zettle et al. 2011) to 244 (Østergaard et al. 2019). While most studies consist of young adults and middle-aged adults, one included children aged 7-15 (Moghanloo et al. 2015), and another study primarily involved older adults (Liu et al. 2023). Gender distribution was generally imbalanced: nine studies had a majority of female participants (Lappalainen et al. 2014, González-Fernández et al. 2018, Grégoire et al. 2018, Østergaard et al. 2019, van Aubel et al. 2020, Zemestani and Mozaffari 2020, Fernández-Rodríguez et al. 2021, Ebrahimi et al. 2022, Shahkaram et al. 2024), one had a male-majority sample (Liu et al. 2023), four included only women (Zettle et al. 2011, Monfaredi et al. 2022, Shojaeifar et al. 2022, Ksiksou et al. 2024), and one included only men (Shareh and Robati 2022). In two studies, gender distribution was equal (Moghanloo et al. 2015, Otared et al. 2021).

Across 17 studies, a total of 1194 participants were included. Of these, 73 withdrew before completing the research process. Of the participants, 38 were from the ACT groups (total n=512) and 35 were from the control or comparison groups (total n=682). The remaining participants completed the study process. While dropout rates were not reported in seven studies (Grégoire et al. 2018, van Aubel et al. 2020, Otared et al. 2021, Monfaredi et al. 2022, Shareh and Robati 2022, Shojaeifar et al. 2022, Ksiksou et al. 2024). In the studies reporting dropouts, the minimum number of dropouts was 1 (Lappalainen et al. 2014, Liu et al. 2023), while the maximum was 20 (Fernández-Rodríguez et al. 2021). The study with the highest number of reported dropouts reported 20 dropouts (Fernández-Rodríguez et al. 2021).

The studies examined diverse samples. While some studies focused on adults with depressive symptoms (Zettle et al. 2011, Lappalainen et al. 2014, Østergaard et al. 2019), others targeted specific populations, including individuals with obsessive-compulsive disorder (OCD) (Ebrahimi et al. 2020), cancer survivors (González-Fernández et al. 2018, Fernández-Rodríguez et al. 2021), university students (Grégoire et al. 2018), breast cancer patients (Ksiksou et al. 2024), individuals with post-stroke depression (Liu et al. 2023), children aged 7-15 with diabetes (Moghanloo et al. 2015), menopausal women (Monfaredi et al. 2022), healthcare workers (Otared et al. 2021), individuals with irritable bowel syndrome (IBS) (Shahkaram et al. 2024), soldiers (Shareh and Robati 2022), women experiencing postpartum depression (Shojaeifar et al. 2022), young adults with subthreshold depression and psychosis symptoms (van Aubel et al. 2020), and individuals with physical disabilities (Zemestani and Mozaffari 2020).

Intervention Groups vs. Control and Comparison Groups

Among 17 studies, nine compared the ACT group solely with a control group (Moghanloo et al. 2015, Grégoire et al. 2018, Zemestani and Mozaffari 2020, Otared et al. 2021, Monfaredi et al. 2022, Shareh and Robati 2022, Shojaeifar et al. 2022, Liu et al. 2023, Ksiksou et al. 2024), while four examined ACT alongside other interventions – such as SSRI (Selective Serotonin Reuptake Inhibitor) (Ebrahimi et al. 2022), Transdiagnostic Treatment (UP) (Shahkaram et al. 2024), Cognitive Therapy (CT) (Zettle et al. 2011), or a Film Group (van Aubel et al. 2020) – without a control group. One study compared face-to-face and internet-based ACT without a control group (Lappalainen et al. 2014). Additionally, three studies compared ACT with both a control group and other interventions; of these, two used Behavioral Activation (BA) as the alternative intervention (González-Fernández et al. 2018, Fernández-Rodríguez et al. 2021), while one

investigated Attention Bias Modification (ABM) alongside ACT and a combined ACT-ABM group (Østergaard et al. 2019) (Table 1).

Measurement Tools

All studies in this systematic review used standardized scales rather than subjective expert assessments to evaluate depressive symptoms/depression, which is a key inclusion/exclusion criterion. While some studies used the same scales (e.g., BDI-II), others employed different scales to measure depressive symptoms/depression. Some of these scales measure depression broadly (BDI, DASS, HAM-D, MADRS, HADS, BADS, IDS-SR, PHQ-9, RCDS, SCL-90, SF-12v2), while others are specific to certain depressive symptoms. These specific measured symptoms include rumination (RRS), suicidal tendency (BSSI), automatic thoughts (ATQ, ATQ-B), hopelessness (BHS), dysfunctional attitudes (DAS), emotional regulation (ERQ-R), reduced perception of environmental reward (EROS), and sleep quality (PSQI).

In addition to depression/depressive symptoms, studies also assessed various psychological variables, including psychological flexibility (AAQ-II, MEAQ, CFQ), mindfulness (FFMQ), cognitive flexibility (CFI), anxiety (DASS, HADS, GAD-7, BAI, STAI-T), quality of life and life satisfaction (WHOQOL-BREF, CaSM, SWLS, MENQOL, QOLI, SPQB), psychosocial functioning (GAF), psychotic experiences (CAPE), academic engagement (AES), and client satisfaction (CSQ-8).

In addition to standardized instruments, several studies also incorporated non-scale methods to evaluate the effectiveness of group ACT. For instance, Grégoire and colleagues (2018) used mindfulness-based skill practices, while Otared and colleagues (2021) used observation-based reports of group dynamics. van Aubel and colleagues (2020) examined the completion rates of mindfulness exercises and evaluated participants' mood fluctuations via a mobile application, Zemestani and Mozaffari (2020) implemented mindfulness-based homework assignments, and Zettle and colleagues (2011) conducted non-scale evaluations through group discussions and assessments of interactions among participants. These methods aimed to increase daily awareness, reinforce value-based actions, and ensure the application of therapy beyond sessions.

Features of Intervention

In most of the studies (n=12), the ACT intervention was applied over 8-12 sessions (Zettle et al. 2011, Moghanloo et al. 2015, González-Fernández et al. 2018, Østergaard et al. 2019, Zemestani and Mozaffari 2020, Fernández-Rodríguez et al. 2021, Otared et al. 2021, Ebrahimi et al. 2022, Monfaredi et al. 2022, Shareh and Robati 2022, Shojaeifar et al. 2022, Shahkaram et al. 2024), though some had fewer (Lappalainen et al. 2014, Grégoire et al. 2018, van Aubel et al. 2020, Liu et al. 2023, Ksiksou et al. 2024). The study with the least number of sessions lasted four sessions (Grégoire et al. 2018). There was no study that had lasted longer than 12 sessions. Session durations ranged from 45 to 60 minutes in the shortest sessions (Shahkaram et al. 2024) to 150 minutes in the longest sessions (Grégoire et al. 2018, Østergaard et al. 2019). Most studies (n=12) reported session lengths of up to 90 minutes (Zettle et al. 2011, Lappalainen et al. 2014, Moghanloo et al. 2015, González-Fernández et al. 2018, Østergaard et al. 2019, van Aubel et al. 2020, Zemestani and Mozaffari 2020, Fernández-Rodríguez et al. 2021, Monfaredi et al. 2022, Shareh and Robati 2022, Shojaeifar et al. 2022, Liu et al. 2023). Most interventions (n=15) were conducted once a week (Zettle et al. 2011, Lappalainen et al. 2014, Moghanloo et al. 2015, González-Fernández et al. 2018, Grégoire et al. 2018, Østergaard et al. 2019, van Aubel et al. 2020, Zemestani and Mozaffari 2020, Fernández-Rodríguez et al. 2021, Otared et al. 2021, Monfaredi et al. 2022, Shareh and Robati 2022, Shojaeifar et al. 2022, Ksiksou et al. 2024, Shahkaram et al. 2024), and two studies conducted twice a week (Ebrahimi et al. 2022, Liu et al. 2023).

Findings of the Studies

This study reviewed 17 RCT studies examining the effectiveness of group ACT on depressive symptoms, and the results suggested ACT as an effective approach in the treatment of depressive symptoms.

However, the findings of the studies indicated varying results based on factors such as characteristics of the participants, intervention duration, and methodology.

The effect of ACT on depression is generally associated with the development of psychological flexibility; however, some studies have also linked this effect to the development of cognitive flexibility. The study conducted by Shareh and Robati (2022) reported that ACT reduced depression, hopelessness, and suicidal thoughts by increasing cognitive flexibility levels. In the study by Zemestani and Mozaffari (2020), it was observed that ACT reduced depressive symptoms and improved psychological flexibility in individuals with physical disabilities.

In addition to depression, some studies focused on other psychological concepts, such as anxiety, well-being, and quality of life. For instance, the study conducted by Ebrahimi and colleagues (2020) reported that ACT enhanced psychological well-being in university students by increasing psychological flexibility, reducing depression, and anxiety. In another study, ACT improved the quality of life in individuals with chronic illnesses while reducing depression and anxiety (Fernández-Rodíguez et al. 2021). On the other hand, in González-Fernández and colleagues' (2020) study, ACT was found to be effective in reducing pain in fibromyalgia patients while reducing depression and increasing psychological flexibility.

The studies in this review examined the effectiveness of ACT in various samples, such as in individuals under work stress (Grégoire et al. 2018), in individuals with physical disabilities (Zemestani and Mozaffari 2020), in individuals with post-traumatic stress disorder (Ksiksou et al. 2019), and in older individuals (Liu et al. 2018). ACT was found to be effective in reducing depression and in increasing psychological flexibility in these different samples. In addition, ACT was conducted on children with diabetes and found to be effective not only in reducing depressive symptoms and feelings of guilt but also in increasing psychological flexibility and psychological well-being of children (Moghanloo et al. 2015). Another study examining the effectiveness of ACT in menopausal women showed similar findings, but no significant improvement was found in quality of life and sleep in women (Monfaredi et al. 2022).

Otared and colleagues (2021) reported that ACT was effective in reducing depression, anxiety, and rumination, while increasing psychological flexibility in healthcare workers during the COVID-19 pandemic. Shahkaram and colleagues (2024) reported similar findings in patients with IBS. Focusing on the postpartum period, Shojaeifar and colleagues (2022) demonstrated that ACT was effective in reducing postpartum depression. Østergaard and colleagues (2019) expressed that ACT may help alleviate residual symptoms of depression and prevent relapse. Zettle and colleagues (2011) linked ACT's effectiveness in reducing depression to its role in increasing cognitive defusion. Several studies compared ACT to other treatment approaches. For example, Ebrahimi and colleagues (2020) found that while both group ACT and SSRI medication were effective in treating depression and improving quality of life in individuals with OCD, SSRIs led to a greater reduction in symptoms. However, both interventions maintained their effects during follow-up. Fernández-Rodríguez and colleagues (2021) reported that while ACT and BA yielded similar results, ACT provided better short-term results in avoidance and rumination. Similarly, González-Fernández and colleagues (2018) found ACT superior to BA in addressing avoidance, rumination, and social functioning impairment. Østergaard and colleagues (2019) examined ABM alongside ACT but found no added benefit from ABM. Similarly, Shahkaram and colleagues (2024) compared ACT with UP and found both interventions equally effective in reducing depression and rumination. Lastly, Zettle and colleagues (2011) stated that ACT was more effective than CT in reducing depression, attributing this effect to improvements in cognitive defusion.

Discussion

This study reviews the findings from RCT studies examining the effectiveness of group ACT on depressive symptoms. Study findings suggest that group ACT is an effective approach in reducing depressive symptoms in general. However, factors such as different study designs and demographic characteristics of participants may affect both the efficacy and generalizability of these findings. Although the findings prove the effectiveness of group ACT on depression, limitations of the studies reviewed, such as the

intervention duration, the number of sessions, and the use of different measurement tools, should be considered.

In this review, similar to the previous meta-analysis study (Ferreira et al. 2022), group ACT intervention was found to be effective in reducing depressive symptoms. Ferreira and colleagues (2022), in their meta-analysis, investigated both depression and anxiety within adult populations. In contrast, this systematic review is more limited in scope, as it focuses exclusively on depressive symptoms and additionally includes children in the study population. Moreover, the meta-analysis sample primarily consisted of women from developed countries in Europe, and the authors recommended that future research be conducted in low- and middle-income countries. Addressing this recommendation, this systematic review incorporates populations from various countries (e.g., Iran), resulting in a broader sample in terms of geographic diversity. Nevertheless, both studies found similar outcomes, indicating that group-based ACT effectively reduces depressive symptoms. Thus, the findings of this study align with those reported in Ferreira and colleagues' (2022) study. However, in the study by van Aubel and colleagues (2020), inconsistent results were obtained from the two different measurement tools (self-report scale and semi-structured interview-based scale) used to assess the depressive symptoms of participants. The semi-structured interview-based scale (MADRS) results showed significant change after group-based ACT, while self-report scale results did not. Therefore, MADRS is considered more sensitive than the self-report scale (IDS-SR). However, these findings suggest caution in interpreting the effect of ACT on depressive symptoms. In the same study, ACT did not make a significant difference in psychological flexibility. The researchers explained this finding with factors such as the short duration of the intervention (5 sessions), the session content not being sufficiently intensive, the participants having difficulty adapting to technology, the participants having subthreshold psychotic symptoms, and the measurement tools used not having sufficient sensitivity to detect changes in psychological flexibility. Despite this, it is suggested that further research focusing on investigating the effect of ACT on depressive symptoms is needed, even when there are no improvements in psychological flexibility. This is particularly important because ACT assumes that psychological well-being is associated with increased psychological flexibility; in other words, with a reduction in psychological inflexibility, which is regarded as the fundamental factor underlying psychopathology. In the study by Grégoire and colleagues (2018), the limited number of sessions is considered a limitation, as well. Since the limited number of sessions may restrict the scope and depth of the intervention, more sessions may be needed to fully apply the core processes of ACT and to facilitate meaningful change in participants. Still, in this study, ACT effectively reduced depressive symptoms, proving the rapid effect of ACT on depressive symptoms.

In order to provide a more comprehensive assessment of the effects of ACT on depression, some studies reviewed in this study used non-scale assessment methods (Zettle et al. 2011, Grégoire et al. 2018, van Aubel et al. 2020, Zemestani and Mozaffari 2020, Otared et al. 2021). Through these methods, it was possible for participants to develop mindfulness skills, take value-based actions, and apply therapeutic skills in daily life.

Cognitive defusion refers to the ability to step back from one's thoughts and observe them as separate events, rather than being immersed in or dominated by them (Harris 2023). In Zettle and colleagues' (2011) study, group-based ACT was also found to be effective in increasing cognitive defusion and reducing depression; however, the intervention program ACT was found to have no significant effect on the frequency of depression-related thoughts and dysfunctional attitudes. This suggests that cognitive defusion may reduce depressive symptoms not by decreasing the frequency of negative or dysfunctional thoughts, but rather by altering an individual's relationship to these thoughts. By promoting a stance of observation and acceptance, cognitive defusion lessens the impact and believability of depressive cognitions, thereby reducing their influence on mood and behavior. There are studies in the literature that support a negative relationship between cognitive defusion and depression (Berman et al. 2010, Bardeen and Fergus 2016). Therefore, even though ACT is effective in reducing depressive symptoms, it may have limitations in addressing certain cognitive aspects of depression. In particular, certain cognitive components associated with depression, such as dysfunctional attitudes and repetitive thought patterns, may not be addressed in the standard ACT protocol. Therefore, it may be necessary to include additional

cognitive intervention strategies in ACT in order to target these cognitive dimensions more directly and make meaningful changes in the cognitive aspects of depression.

In the study by van Aubel and colleagues (2020), it was noted that ACT was effective in reducing depressive symptoms in young adults but did not create a significant difference in psychological flexibility. In this study, no significant difference was found in depressive symptoms based on the self-report scale (IDS-SR) filled out by the participants themselves. However, a significant decrease in depressive symptoms was detected in the MADRS scale based on semi-structured interviews conducted by the researchers with the participants. The researchers emphasized this decrease in depressive symptoms, reasoning that the semi-structured MADRS scale was more sensitive.

Lappalainen and colleagues (2014) compared face-to-face group ACT with internet-based guided support groups and found that both methods were effective in reducing depressive symptoms. The researchers highlighted that future studies with larger sample sizes would contribute to a better understanding of these effects. In particular, the significant improvements observed in both short-term and long-term (up to 18 months) outcomes suggest that flexible forms of ACT may be effective options for addressing common psychological problems such as depression. Face-to-face group therapy offers participants more opportunities for social interaction and bonding, which can enhance the therapeutic relationship. This facilitates a better therapeutic relationship. The therapeutic relationship plays a critical role in creating a safe environment for individuals experiencing depressive symptoms and encouraging active participation in therapy. However, the study did not include specific measures to examine the tangible benefits of face-to-face therapy in this regard. Future research examining the role of attachment and social interaction processes specific to face-to-face therapies may provide a more nuanced understanding of their effects. On the other hand, an internet-based guided support (iACT) intervention has the potential to increase access to therapy by offering flexibility in terms of time and location. This format may serve as an effective alternative for individuals who are unable to attend traditional therapy sessions due to geographical distance or time constraints. In summary, the choice between face-to-face group therapy and internet-based guidance should be tailored to the needs of the individual. Beyond the study by Lappalainen and colleagues (2014), some studies have compared ACT with other interventions. These comparisons have used a variety of study designs. Some of these studies, similar to the study by Lappalainen and colleagues (2014), compared the effectiveness of different intervention approaches without using a control group (Zettle et al. 2011, Ebrahimi et al. 2022, Shahkaram et al. 2024). While such studies provide valuable insight into how ACT compares to alternative approaches, not using a control group limits the ability to assess whether improvements are due to the intervention itself, a placebo effect, or natural recovery processes. This requires careful interpretation of the generalizability of results. On the other hand, studies that include control groups allow for more robust examination of the effects of ACT (González-Fernández et al. 2018, Østergaard et al. 2019, Fernández-Rodríguez et al. 2021). Control groups help clarify the direct effects of group ACT on depressive symptoms. However, even in these studies, factors such as sample size, demographic variability, and other methodological limitations may affect the generalizability of findings.

This systematic review evaluates studies comparing ACT with other interventions for the treatment of depression and related psychological symptoms. Ebrahimi and colleagues (2020) reported that ACT effectively reduced depressive symptoms, while SSRI treatment had a more pronounced effect. This suggests that ACT may be a suitable alternative for individuals who prefer not to use medication. However, as the study included only a 3-month follow-up period, it does not provide insight into differences in long-term effectiveness between pharmacological treatment and ACT after the interventions ended. While SSRIs may offer greater short-term benefits, their long-term effectiveness after treatment remains uncertain. In comparison with BA, both ACT and BA have been found to be effective in reducing depression, but they appear to target different aspects of the condition (González-Fernández et al. 2018, Fernández-Rodríguez et al. 2021). González-Fernández and colleagues (2018) reported that ACT was superior to BA in terms of social functioning difficulties, avoidance, and rumination. This was explained as a result of ACT's emphasis on reducing experiential avoidance and guiding individuals towards value-focused actions. Similarly, Fernández-Rodíguez and colleagues (2021) reported that ACT was superior to BA in terms of reducing avoidance and rumination, while BA showed greater efficacy in increasing BA and reducing

anxiety. The researchers suggested that this difference may be due to BA's specific focus on BA and the central role of functional analysis in its framework. In particular, both studies highlight the strong effect of ACT on avoidance and rumination, which are considered two key mechanisms underlying depression. These findings suggest that ACT and BA may operate through different therapeutic mechanisms and could potentially be used complementarily in depression treatment. Østergaard and colleagues (2019) compared ACT with ABM and a combined ACT+ABM. The findings demonstrated that group ACT significantly reduced depressive symptoms over a 12-month period, while the addition of ABM did not provide any additional benefit. This supports the idea that ACT is a powerful intervention on its own. Similarly, Shahkaram and colleagues (2024) showed that both ACT and UP were effective in reducing depression, anxiety, and rumination. However, UP was superior to ACT in reducing anxiety symptoms, likely because of its broad focus on transdiagnostic processes, which may lead to stronger results for anxiety-related issues. In addition, Zettle and colleagues (2011) found that ACT reduced depressive symptoms more rapidly and to a greater extent than CT, and that these effects persisted throughout the follow-up period. Overall, these studies indicate that ACT is an effective treatment for depression compared with other interventions, offering clear advantages by targeting specific psychological mechanisms. However, the diverse mechanisms that different interventions focus on highlight the importance of tailoring treatment to individual characteristics of depressive symptoms. These findings support the use of ACT as a valuable option for treating depression in a group format, potentially complementing other therapeutic approaches. Nevertheless, the generalizability of these results should be considered with caution, given methodological limitations, sample sizes, and demographic differences across studies.

One notable strength of this review is that there is a scarcity of both empirical and review studies on group-based ACT interventions targeting depressive symptoms in Turkey. Due to this gap in the literature, conducting further research in this area within the Turkish context would substantially contribute to the field.

Several studies included in this systematic review had sampling limitations. The small sample size in some studies was identified as an important limitation (Lappalainen et al. 2014, Moghanloo et al. 2015, Monfaredi et al. 2022). Small samples limit the generalizability of the results, making it difficult to draw firm conclusions regarding the therapeutic efficacy of ACT across different populations. This emphasizes the need for larger-scale studies to better assess the effect of ACT in groups with heterogeneous clinical profiles, such as depression. Another limitation noted in some studies was that participants were recruited from a single center (Moghanloo et al. 2015, Otared et al. 2021, Ebrahimi et al. 2022, Liu et al. 2023, Ksiksou et al. 2024). Samples from a single center may limit the ability to assess the effectiveness of ACT across different sociocultural contexts. However, the consistent findings across these studies suggest that ACT may be effective in various settings. Additionally, many studies in this systematic review have examined ACT's impact on diverse populations, including individuals with OCD, cancer, university students, individuals with post-stroke depression, children with diabetes (ages 7-15), menopausal women, healthcare workers, individuals with IBS, soldiers, women with postpartum depression, and individuals with physical disabilities. The consistent reduction in depressive symptoms across these varied groups supports the broader application of ACT in group therapy settings. In this systematic review, all but one of the included studies focused on adults, with only a single study addressing children with diabetes. The effectiveness of group-based ACT was also observed in children with diabetes. However, the fact that just one study examined this population limits the generalizability of the findings. Future research should consider investigating the effects of group-based ACT in children and adolescents. Gender distribution is another limitation in some studies. Several studies have samples that are predominantly female (González-Fernández et al. 2018, Fernández-Rodríguez et al. 2021), consist only of women (Zettle et al. 2011, Shojaeifar et al. 2022), or consist only of men (Shareh and Robati 2022). This gender imbalance may limit the ability to examine potential gender-related differences in the effectiveness of group ACT interventions. In understanding how group ACT interventions affect gender differences. Therefore, future research should aim for more balanced gender representation to enhance the generalizability of findings.

This systematic review demonstrates that group-based ACT is an effective intervention approach for depressive symptoms. The findings showed that ACT has a strong impact on key mechanisms of

depression, such as experiential avoidance, rumination, and social functioning difficulties. By targeting these processes, ACT enhances its therapeutic efficacy. Additionally, ACT's emphasis on guiding individuals towards value-driven actions offers a distinct advantage over other depression treatments.

When considering the generalizability of ACT, the studies included in this review, which yield consistent findings across diverse populations (e.g., women, men, youth, diabetes patients, healthcare workers, soldiers), indicate that ACT is effective across a wide range of groups. However, given the sample size limitations and demographic variations in the reviewed studies, further research with larger and more diverse samples is needed to comprehensively assess the applicability of ACT across different cultural and clinical contexts.

The adaptability of ACT to individual needs, along with its effectiveness in both face-to-face and online formats, positions it as a highly accessible and feasible intervention. Particularly considering the practicality and cost-effectiveness of online applications, ACT has significant potential to reach a broader population in the future.

Within this systematic review, ten studies examined the long-term effects of ACT interventions using follow-up assessments. Although it is often challenging to reach participants during follow-up, several studies successfully conducted evaluations at both short- and long-term intervals, which strengthens the evidence for the efficacy of ACT over time. However, the duration and scope of these assessments varied considerably. Most follow-up data were collected over short periods (e.g., 2–3 months), with only a few studies extending their observations to 12–18 months. This variability limits the ability to draw firm conclusions about the sustainability of ACT's effects. Studies with limited follow-up evaluations provide insufficient information about the durability of intervention outcomes, making it difficult to assess real-world benefits. Moreover, restricted follow-up measures, participant attrition, and heterogeneous results further reduce the generalizability of the findings. Despite these limitations, the available evidence indicates that ACT is effective in the short term, and this effectiveness tends to be maintained over follow-up periods. Nevertheless, more structured research designs—particularly those minimizing attrition and extending follow-up durations—are needed to strengthen the reliability of long-term findings. Future studies should include extended follow-up assessments to better evaluate the sustainability of ACT's therapeutic effects.

Conclusion

In conclusion, this review demonstrates that group-based ACT is an effective approach for reducing depressive symptoms, yielding robust outcomes by targeting multiple psychological mechanisms and showing applicability across diverse populations. However, additional research with longer follow-up periods and more diverse samples is required to clarify the long-term effectiveness of ACT across demographic and cultural contexts. This systematic review provides a comprehensive overview by including RCTs that investigated the effects of group-based ACT on depressive symptoms. A major strength is that all included studies employed standardized scales to measure depressive symptoms, enhancing the reliability of the results. Furthermore, the inclusion of both face-to-face and online ACT interventions offers a broader perspective on the effectiveness of different delivery modalities. The wide geographic distribution of the studies also supports the cross-context applicability of the findings.

In addition to these strengths, several limitations should be acknowledged. Most of the studies had small sample sizes, and the predominance of one gender in certain studies limits the generalizability of the results. Furthermore, the lack of long-term follow-up data in some studies prevents a clear assessment of the sustainability of ACT interventions. Variability in the duration of the intervention and the use of different measurement tools may also reduce the comparability of the results. Additionally, the review was limited to English and Turkish publications, introducing the potential language bias. Given these limitations, future research should address these gaps by including larger and more diverse samples, ensuring balanced gender distribution, and extending follow-up measures to examine long-term outcomes. By overcoming these challenges, future studies may provide a more comprehensive assessment of the efficacy and feasibility of group-based ACT in treating depressive symptoms.

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