The Current Status of Acceptance and Commitment Therapy (ACT) in Iran:

A Systematic Narrative Review

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Abstract

 Research on acceptance and commitment therapy (ACT) and its application to various clinical issues have proliferated across the world. Despite very active clusters of ACT research occurring worldwide, the science that is disseminated through the literature does not fully reflect this scope and diversity, with Iran serving as a prime example of this issue. To increase awareness of ACT research findings in Iran, we conducted a systematic review of 110 randomized trials and extracted data on key study features. RCTs were identified, suggesting the efficacy of ACT in Iran for a wide range of clinical areas, including anxiety disorders, obsessive-compulsive related disorders, posttraumatic stress disorder, mood disorders, substance use disorders, eating disorders, and psychological outcomes among patients diagnosed with medical conditions including cancer, diabetes, gastric dysfunctions, pain, infertility, HIV/AIDS, and multiple sclerosis as well as improving multiple health-related biomarkers in medical samples. The majority of studies had a relatively high risk of potential bias due to methodological limitations. Several important cultural factors were identified related to how ACT has been delivered and evaluated in Iran. These included targets of treatment and ways that clinical research itself is conducted that differentiate this important body of work from ACT research conducted in Western cultural contexts.

 *Keywords:* Acceptance and commitment therapy, multicultural psychology, Iran,

systematic review, cultural adaptations

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Acceptance and Commitment Therapy (ACT; Hayes et al., 2011) has been disseminated widely throughout the world. In 2021, the Association for Contextual Behavioral Science (ACBS), which includes a strong emphasis on ACT research and practice, reported members from 95 countries (ACBS, 2022). The World Health Organization (WHO) has adopted ACT for delivery in a self-help format (Tol et al., 2018) and recommended ACT for chronic pain treatment (WHO, 2020). Clinical trial research on the ACT has been published on all major continents, including in several low- and middle-income countries in Africa, Asia, and the Middle East (ACBS, 2022a).

Although ACT has been found effective for a wide range of mental health and related problems (Gloster et al., 2021), most reviews of the ACT literature have focused on English language publications, primarily with research conducted in Western, Educated, Industrialized, Rich, and Democratic (WEIRD; Henrich et al., 2010) participant samples. This mirrors broader biases in psychological science, which has numerous negative consequences for underserved and minoritized populations, underrepresented scientists, and our scientific understanding of the ACT and its generalizability across different cultural contexts (Hayes et al., 2021; Muthukrishna et al., 2020). In some cases, this is due to a lack of research on the ACT in understudied cultural contexts, but in other cases, such research has been conducted in a given culture but is not widely disseminated and integrated into the broader scientific literature due to language and other systemic barriers.

Potentially the largest such gap in the ACT literature is with the significant body of research evaluating ACT in Iran, which includes a number of Persian language publications that have not been thoroughly reviewed or well-integrated into the broader ACT literature. Published clinical trials on the ACT in Iran have increased exponentially over the past decade across a wide range of mental health concerns. The randomized controlled trials (RCTs) on the ACT in Iran are included in the ACBS "ACT Randomized Controlled Trials" (ACBS, 2022b) and "ACT studies in Low and Middle-Income Countries" lists (ACBS, 2022a). However, no systematic review or meta-analysis has been provided to date in an English language psychology journal that provides an in-depth review of RCTs evaluating ACT in Iran.

In addition to revealing potentially valuable scientific insights, a more thorough understanding of ACT research from Iran may also highlight important cultural differences in how ACT is being used in this context. Broad cultural differences exist between Western and Eastern countries, including attitudes toward behavior, personality, and overall way of life (Wang, 2007). An important distinction between Western nations and Iran specifically is the dominance of Islam, which is practiced by over 99% of Iranians and is the official state religion. Iran is also a relatively young country, with 44.8% of Iranians between the ages of 30 and 64 out of a total population of 80 million (Statistical Center of Iran, 2016). The two formal mental health organizations in Iran (Organization of Psychology and Counseling System of Iran, 2019; Ministry of Health and Medical Education of Iran, 2020) estimate that approximately 23 percent of the population is affected by some type of mental disorder. In regards to access to mental health services, there are fewer than 2,000 psychiatrists and fewer than 6,000 psychologists for every eight million Iranians (Organization of Psychology and Counseling System of Iran, 2019; Ministry of Health and Medical Education of Iran, 2020). Moreover, these resources are not distributed equally throughout the country, are prohibitively expensive, and are not covered by health insurance (The Islamic Republic News Agency, 2022).

Beyond these general features of mental healthcare in Iran, there are unique cultural relevant to the dissemination and implementation of ACT specifically. Fatalism and faith in fate are deeply ingrained in Iranians' worldviews; they tend to accept what cannot be changed and attribute it to fate, sometimes using the Persian proverb "goodness is in what happened." Iran's culture is rich in poetry, metaphor, and proverb, which lend themselves to therapies such as ACT that often draw on such forms of language to illustrate key therapeutic concepts. As one example, the poet Rumi is one of Iran's cultural icons and wrote versus on the themes of acceptance, mindfulness, suffering, and patience that are largely consistent with several core features of ACT (Nourouzi et al., 2017; 2019; 2020). In addition, the humanistic quality of ACT may exhibit some parallels with Iran's religious context. Similar to the concept of acceptance in ACT, there is a belief in Islam that people must accept that everything in their lives is a divine gift (Mahmoudpour et al., 2021; Nourouzi et al., 2017). For these reasons and others, when presented with ACT, Iranians tend to perceive it as a familiar and consistent concept with their belief system. Thus, ACT has been well received and widely adopted in Iran.

Reviewing the published RCTs evaluating ACT in Iran will help to clarify whether ACT efficacy findings replicate in this cultural context as well as better integrate this large body of research into the broader CBS literature and scientific community. As described in the ACBS Task Force on the Strategies and Tactics of Contextual Behavioral Science Research, such cross-cultural research is critical for continuing to progress CBS research in a way that is multi-level, multi-dimensional, process-based, prosocial, and practical (Hayes et al., 2021).

Thus, this article provides a systematic review of ACT RCTs conducted in Iran across psychological and physical health conditions. This provides the first comprehensive review of the ACT RCT literature in Iran published in Persian and English and includes a narrative review of key methodological features and findings from each trial, as well as summaries by problem area.

**Method**

**Study Selection**

The study selection methodology has been reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021).

**Eligible Studies Included**

The following inclusion criteria were applied to the literature search: (a) Persian/English-language articles published in peer-reviewed journals; (b) used an RCT design with participants randomly assigned to experimental conditions; (c) at least one condition provided ACT; (d) inclusion criteria requiring a diagnosis or meeting a cutoff score to be considered as probable/at-risk participants; and (e) having at least one comparison or waitlist condition. Given the review's aim to provide a broad review of the current status of ACT research in Iran, broad inclusion criteria were used. A comprehensive list of all ACT publications in Iran can be found in Appendix A, with basic information from each study, containing all included and excluded studies.

**Information Sources and Search**

PsycINFO, PubMed, Scopus, and all Iranian databases (not available for foreigners) were systematically searched from inception to July 31, 2021. Moreover, a manual search of reference lists from all articles selected full-text reviews and relevant reviews were run. The search was done using the terms "ACT," "acceptance and commitment therapy," and "Iran."

**Study Selection, Data Collection Process, and Data Items**

The eligibility of studies was assessed through the following procedure: title screening, abstract screening, and full article screening. Titles and abstracts were screened by XX and XX. Articles appearing to be potentially relevant were independently assessed by XX and XX. When the information about the methods or results was omitted, the original authors were contacted to obtain missing information. If not specified in the publication, participants were considered without co-occurring psychiatric disorders or neurocognitive impairment. The title, authors' names, publication year, total sample size and sample size in each therapeutic group, treatment target, clinical status (being diagnosed or included based on cutoff score), medication status, therapy setting (provider, number of delivered sessions, time duration of each session), comparison group, and a summary of findings were all coded.

**Study Quality and Risk of Bias Assessment**

The quality and risk of bias of the included studies were assessed using a 24-item scale developed by Kocsis et al. (2010) with one additional item regarding the overall quality for evaluating published RCTs on psychotherapy. This scale evaluates several sources of bias, such as the diagnostic methodology's reliability, the screening procedure (inclusion, exclusion, dropout, and withdrawal), treatment allocation, and therapist adherence. The minimum possible score is 0, and the maximum possible score is 48, with higher scores indicating a lower risk of bias and higher methodological quality. Mean total scores for the 24 items of each category are then linearly transformed into a range of 1 to 7, with the minimum and maximum scores reported alongside the overall evaluation. Each study is assigned an overall rating of 1 (extremely poor quality and high risk of bias), 2 (very poor), 3 (moderately poor), 4 (average), 5 (moderately good), 6 (very good), or 7 (extremely high quality and low risk of bias).

**Synthesis Methods**

Given that the purpose of the current study was to provide a comprehensive overview of the current status of ACT in Iran, we utilized the narrative review method instead of a systematic review or meta-analysis. A narrative review provides a summary of the literature without employing quantitative method; However, whenever possible, we calculated effect sizes using standardized mean differences (SMD) and associated standard errors across all included research. SMD is an appropriate summary statistic to use when outcome measures are heterogeneous across studies (Higgins & Green, 2011). Similar to other measures of effect size, SMDs can be interpreted as small, medium, or large (within the range of 0.2, 0.5, and 0.8, respectively; Andrade, 2020). Finally, the included studies are categorized according to their treatment objective and presented in narrative format to reflect overall trends in ACT research that has been conducted in Iran.

**Result**

A flow chart of the study selection procedure is provided in Figure 1. An initial search of the databases revealed 3240 studies. Once duplicates were deleted, 2780 articles were examined by abstract and title to establish eligibility. A total of 1102 papers were then evaluated in full. After applying inclusion and exclusion criteria to the assessed articles in full, 110 papers were identified for inclusion in the review.

The sample size per study ranged from 16 to 106. Of the 110 RCTs, 65 compared ACT to a waitlist control condition, 3 compared ACT to treatment as a usual control condition, 4 compared ACT to another Cognitive Behavioral Therapy, 2 compared ACT to psychoeducation, and 36 compared ACT to multiple conditions, including waitlist and active comparisons. Overall, there were 4 RCTs evaluating ACT for Generalized Anxiety Disorder (GAD), 2 for PTSD, 15 for OCD, 7 for social anxiety disorder, 11 for substance use disorder, 6 for mood disorders, 7 for eating and obesity, and 6 for other anxiety (See appendix B, Table 1, for more detail on ACT for psychological conditions). Also, some studies evaluated ACT for psychological outcomes among patients diagnosed with medical conditions: 3 RCTs for cancer, 6 for diabetes, 2 for gastric wounds and dysfunctions, 8 for pain, 7 for migraine, 4 for infertility and pregnancy, and one study for each of following, for HIV/AIDS, disability, multiple sclerosis (See appendix B, Table 2, for more detail on ACT for medical conditions). Moreover, some studies evaluated ACT for biological markers as follows, HbA1C (Glycated Hemoglobin), insulin resistance and lipid profile, insulin sensitivity and C-reactive protein, urinary protein and glucose excretion, interleukin-12, blood pressure, and cortisol level (See appendix B, Table 3, for more detail on ACT for biological markers).

Treatment varied from 8 to 16 sessions, and each session ranged from 45 to 180 minutes. In 12 studies, a licensed psychologist, and in 54 studies, a trainee therapist (master/PhD-student) was the therapy provider. Treatment was provided in a group format in all of these trials. Additional findings are summarized via narrative synthesis. Full details of each trial, including sample size, number of sessions, timeframe, and type of provider, are available as an online supplement.

**ACT and Psychological Disorders**

*Generalized Anxiety Disorder (GAD)*

Four studies conducted ACT trials on diagnosed or probable GAD patients, and the SMDs for ACT vs. other conditions ranged from 0.35 to 4.02.

Among a sample of 40 patients diagnosed with GAD, Fathi et al. (2017) found that patients receiving ACT showed significantly greater changes in metacognition and anxiety than a waitlist group. In addition, Demehri et al. (2018) studied 40 female adolescents with probable GAD who showed significant increases in psychological well-being as well as decreased rumination compared to a waitlist.

One study (Foroutan et al., 2019) featured three comparison groups of ACT, functional analytic psychotherapy (FAP), and a waitlist. At post-test, both active groups showed greater reductions in GAD than the waitlist. A final study was conducted by Keshavarz-Afshar et al. (2018) with 24 females diagnosed with GAD, in which ACT significantly reduced GAD symptoms compared to a waitlist group.

Overall, among studies of ACT for GAD in Iran, three found ACT to be superior to a waitlist, one showed that both ACT and FAP were superior to a waitlist, and one pilot study suggested reduced anxiety over time with no comparison group.

*Posttraumatic Stress Disorder (PTSD)*

Two studies concerned tested ACT for PTSD, with the SMDs for ACT vs. other conditions ranging from 1.15 to 5.25.

Behrouz (2016) provided ACT for 24 adolescent females diagnosed with PTSD and found that the experimental group showed significant decreases in intrusive thoughts and experiential avoidance compared to a waitlist. Also, significant changes were observed in self-efficacy, problem-solving, and avoidant coping styles, but no difference was found in emotional coping styles.

A study conducted by Gholamrezaei et al. (2019) included 30 females who had experienced spousal infidelity with elevated PTSD scores (recurrent, involuntary, and intrusive distressing memories). Those who received ACT showed significant reductions in PTSD, depressive, and anxiety symptomology as compared to a waitlist.

In sum, ACT work for PTSD in Iran has produced two studies showing ACT as efficacious compared to a waitlist, including related factors such as intrusive thoughts and anxiety.

*Obsessive-Compulsive Disorder (OCD)*

OCD was the most commonly studied psychological disorder among ACT trials in Iran. We found 15 total studies involving individuals diagnosed with OCD that compared ACT to medications, other psychotherapies, or waitlist groups, and the SMDs for ACT vs. other conditions spanned values of 0.03 to 6.68.

Among studies comparing ACT to psychotropic medication, Baghooli et al. (2014) used a large sample (n = 75) and three experimental groups: eight sessions of ACT, the same treatment with adjunctive clomipramine, and clomipramine alone. The authors found that both the ACT group and ACT with adjunctive clomipramine showed a significant reduction in OCD compared to the clomipramine alone group; interestingly, there were no significant differences between the two ACT groups. Another study by Rohani et al. (2018) compared SSRIs alone to SSRIs with ACT for 32 female clients diagnosed with OCD. The authors found equally significant reductions in OCD and depressive symptoms during treatment, with the ACT group outperforming medication alone at follow-up. There were also improvements in rumination and psychological flexibility in the ACT condition at both post-treatment and follow-up. In addition, Shabani et al. (2019) compared ACT with adjunctive SSRIs to CBT with adjunctive SSRI with 69 patients diagnosed with OCD; these two groups were also compared to a control group that received only SSRIs. The authors found that both psychotherapies with SSRI conditions produced significant reductions in OCD severity and depressive symptoms, whereas the SSRI condition alone did not produce significant effects. Notably, participants in the ACT plus SSRI condition also showed significant improvements in psychological flexibility, mindfulness, and valued living, whereas the other two groups did not.

Similarly, Vakili et al. (2013) provided ACT to 32 individuals diagnosed with OCD and found that patients treated with ACT, either alone or adjunctive with SSRIs, experienced significantly greater improvements in OCD at post-treatment as compared to those treated with SSRIs alone. There were no significant differences between the two ACT groups. Moreover, both ACT and ACT with SSRIs showed significant remission in anxiety and depressive symptoms compared to SSRIs alone. A study by Zemestani et al. (2022) compared SSRIs alone to ACT or exposure and response prevention (ERP) as adjunctive therapies to medication among 38 patients formally diagnosed with OCD. The authors found significant reductions in OCD severity in both therapy conditions compared to SSRIs only

at follow-up. Additionally, both psychological inflexibility and thought control strategies significantly decreased in the ACT condition compared to the other two, suggesting that key ACT processes were acted upon.

In addition to testing ACT against medication for OCD, other studies in Iran have compared ACT to other psychotherapies. Izadi et al. (2014) compared ACT to CBT and also a waitlist group among 38 clients diagnosed with OCD, finding both therapies significantly reduced OCD severity. Only the ACT group, however, showed significant improvements in psychological flexibility. Ghazanfari et al. (2015) compared ACT against metacognitive therapy and a waitlist among 45 females with OCD. Authors found that both treatments significantly reduced OCD compared to a waitlist, with no differences between the two therapies. Narimani et al. (2016) tested ACT against ERP alone against a waitlist group with 45 clients diagnosed with OCD, finding both treatments effective compared to the waitlist, with ACT outperforming ERP in reducing OCD severity. However, Hashemi-Jashni et al. (2020) compared ACT to ERP and a waitlist among 60 female clients presumed to have OCD based on clinical interviews. Although both treatments were significantly better than the waitlist, they found that ERP performed better than ACT in reducing OCD severity.

 The remaining studies of OCD in Iran compared ACT to only waitlist groups, with many of these studies including novel process variables or moderating factors. Maleki-Pirbazari et al. (2021) studied 60 total individuals diagnosed with OCD, divided into equal groups of clients with a family history of OCD or no family history. Equal numbers of clients in each category were put into a waitlist group. While both ACT conditions outperformed the waitlist in reducing OCD severity, having a family history of OCD did not moderate outcomes. Asli-Azad et al. (2019) delivered ACT to 30 secondary school students (*M* age = 12.97) diagnosed with OCD and found significantly greater OCD reduction compared to a waitlist. In addition, Rajabi et al. (2020) found significant improvement in OCD symptoms when ACT was compared to a waitlist in a sample of 30 clients diagnosed with OCD. ACT also led to reductions in guilt feelings compared to the waitlist. Yarahmadi et al. (2020) also found that ACT significantly reduced OCD symptoms in addition to increasing distress tolerance among a sample of 20 individuals diagnosed with OCD compared to a waitlist. The final study (Zahiri et al., 2018) delivered ACT combined with compassion-focused therapy to high school male students and their parents, resulting in significant improvements in OCD.

 A large number of OCD studies in Iran cumulatively suggest the efficacy of ACT for this clinical area, with some important limitations. Four studies found ACT more effective than psychotropic medication, though two of these also indicated that CBT and ERP were equally effective to ACT as a nondrug treatment. When ACT was compared directly to other behavioral interventions, more mixed results were found. One study found no differences between the ACT and metacognitive therapy. Two studies put ACT against ERP, with one study favoring ACT and the other ERP in reducing OCD symptoms. Lastly, ACT performed equally to CBT in improving clinical outcomes but was better at increasing psychological flexibility.

*Social Anxiety Disorder (SAD)*

Seven studies delivered ACT to clients with SAD, with the SMDs for ACT vs. other conditions calculated as 0.34 to 5.14.

Khoramnia et al. (2020) found that ACT led to a significantly reduced externalized shame, social anxiety, and difficulty in emotion regulation while increasing psychological flexibility and self-compassion compared to a waitlist in a sample of 22 clients diagnosed with SAD. Esmaeili et al., 2018 provided ACT combined with compassion-focused therapy to 32 female adolescents diagnosed with SAD based on a general clinical interview, finding a significant reduction in the severity of SAD compared to a waitlist. Similarly, Pourfaraj (2011) delivered ACT to 24 college students diagnosed with SAD and found significant improvement in symptoms compared to a waitlist. Likewise, Golestani and Rezaei (2017) found significant improvement in SAD when ACT was given to a group of 24 female high school students diagnosed with SAD. Also, working with a female adolescent sample of 34, Molavi et al. (2014) found significant improvements in an ACT group regarding SAD, depressive symptoms, and general anxiety compared to a waitlist.

The remaining studies of SAD compared ACT with other psychotherapies. Veiskarami et al. (2019) conducted a larger study with 60 individuals diagnosed with SAD, comparing ACT to metacognitive therapy and a waitlist among college students. The authors found that both treatments led to equally significant reductions in SAD and cognitive distortions compared to the waitlist. In addition, Yabandeh et al. (2018) compared ACT to CBT for 45 individuals diagnosed with SAD, finding both therapies equally effective compared to a waitlist.

Taken together, ACT for SAD among Iranian clients was found to be superior to waitlist conditions in five studies and furthermore acted upon relevant psychological processes such as shame and emotion regulation in addition to traditional SAD symptoms. However, in the two studies comparing ACT to other therapies for SAD, which both had relatively large sample sizes, ACT did not show superior benefit.

*Substance Use Disorder (SUD)*

Eleven studies in Iran have used ACT as a treatment for SUD, of which six compared ACT to a waitlist and the remaining to other therapeutic interventions, and the SMDs for ACT vs. other conditions ranged from 0.02 to 9.93 for this clinical area. Bahrami and Asghari (2017) conducted a trial among 30 male methamphetamine users, in which ACT led to a significant reduction in addiction severity compared to a waitlist. Ghouchani et al. (2018) used ACT to treat psychosis also with 30 male methamphetamine users, finding that the ACT group showed significant improvement in both general health and aggressiveness compared to a waitlist. Backchalaki and Mansouri (2018) used ACT to treat sexual dysfunction for 30 women with mixed substance use disorders and found that various components of sexual function, as well as general life satisfaction, improved compared to a waitlist. Gholizadeh et al. (2021) gave ACT to another group of 30 patients with mixed substance use disorders and found significant improvement in cognitive flexibility and craving compared to a waitlist. Hashemi and Nazemi (2017) provided ACT for 40 male patients abusing marijuana, phencyclidine (PCP), or ketamine, which resulted in increased adherence to detox treatment compared to a waitlist. Hemmat et al. (2017) gave ACT to 30 males in methadone maintenance therapy and found significant improvement in craving and quality of life (except physical health) as compared to a waitlist.

The remaining studies compared ACT with other psychotherapies. Haghighat and Mohammadi (2018) compared ACT to CBT to treat mood disturbance in a sample of 45 mixed substance users. The authors found both ACT and CBT were equally effective compared to a waitlist in improving mood symptoms. Mohammadi et al. (2020) provided ACT or CBT, with a waitlist control group, to 45 women in recovery from methamphetamine abuse. Both treatments were equally effective compared to the waitlist; however, ACT outperformed CBT in reducing craving. In a similar study with a sample of 60 males by Hajipoor et al. (2020), schema therapy outperformed ACT in reducing craving, but there were no significant differences in reducing impulsivity. Rahimi et al. (2018) found that CBT and ACT were equally effective compared to a waitlist in reducing addiction severity among 28 males using methamphetamine. The last study by Kiani et al. (2013) compared an ACT and mindfulness-based therapy group in a similar sample with 34 male clients, with both treatments producing equal reductions in craving and improvements in emotion regulation.

In all, ACT has been tested for several SUDs in Iran. Six studies showed ACT more effective than a waitlist in treating various aspects of SUDs, including addiction severity and craving, as well as related factors such as sexual dysfunction and overall quality of life. The five studies comparing ACT to other behavioral treatments for SUDs showed that therapies were largely equivocal, though ACT did show signs of improving craving compared to CBT-based interventions.

*Mood Disorders*

Six studies examined ACT for depression or bipolar disorder with Iranian clients, with SMDs for ACT compared to other conditions falling between 0.99 and 4.85.

Mohammadi et al. (2020) compared ACT to CBT and a waitlist among 36 patients diagnosed with bipolar disorder presently taking mood stabilizers and SSRIs. The authors found both therapies effective and that CBT was more effective in reducing depression while ACT was more effective at promoting emotion regulation.

Mirghiasi et al. (2019) conducted a larger trial with 60 individuals diagnosed with major depression, comparing medication, medication with adjunctive ACT, ACT alone, and a waitlist. Results indicated that the combination of ACT and pharmacotherapy was the most effective, followed by pharmacotherapy and then ACT alone. Tamannaeifar et al. (2014) found that both ACT and cognitive therapy equally reduced symptoms among 19 female outpatients diagnosed with major depression. In a trial by Alipour and Haji Alizadeh (2017), ACT outperformed both a medication and waitlist group in reducing symptoms among 45 individuals diagnosed with major depression. Hashemi and Afshari (2018), also with a sample of 45 diagnosed with depression, found that both ACT and metacognitive therapy equally reduced symptom severity compared to a waitlist. Lastly, Towsyfyan et al. (2016) found that ACT was an effective treatment for depression compared to a waitlist for 16 adolescent females diagnosed with major depression.

Overall, there is promising but limited evidence for the ACT as a treatment for mood disorders in Iran. One study showed that CBT and ACT were both effective for bipolar disorder, while two other studies found ACT also equivocal to CBT or metacognitive therapy for depression. Three additional studies found ACT superior to a waitlist in treating major depression, including when used as an adjunctive to antidepressant medication.

*Other Anxiety*

Six additional studies in Iran have used ACT as a treatment for various subtypes of anxiety not reviewed previously, and the SMDs for ACT vs. other conditions in this area ranged from 0.19 to 3.44.

Bozorgi et al. (2019) provided ACT to 30 primary school female children diagnosed with test anxiety from a cutoff score, resulting in significant improvements compared to a waitlist. Habibollahi et al. (2018) conducted a similar trial with 60 male students and found significant reductions in test anxiety and improved psychological well-being.

Ahmadvand and Ahmadi-Kohanali, (2017) tested ACT with 28 parents of diagnosed children with separation anxiety based on clinical interviews. The results indicated that compared to the waitlist, the children whose parents received ACT demonstrated a significant reduction in separation anxiety. Mokhtarinejad et al. (2020) compared ACT to schema therapy for 45 individuals diagnosed with illness anxiety disorder, finding that both treatments equally and significantly improved both illness perception and worry compared to a waitlist. Relatedly, in a study by Binandeh et al. (2020), both ACT and CBT significantly reduced anxiety compared to a waitlist among 48 dental patients with elevated physiological symptoms. Lastly, Valizadeh and Ahmadi (2021) used ACT as a treatment for death anxiety among 30 elderly individuals diagnosed by a cutoff score, showing significant reductions in anxiety and quality of life compared to a waitlist.

As a whole, ACT has emerged as a viable treatment for various types of anxiety in Iran. Two studies showed ACT to be superior to a waitlist for reducing test anxiety. ACT also outperformed waitlist conditions in samples of individuals with separation anxiety and death anxiety. In the area of illness and medical anxiety, however, ACT appeared equally effective with other psychotherapies in two studies.

*Eating Disorders and Obesity*

Seven studies in Iran have examined ACT as an intervention for issues concerning eating and body image, and the SMDs for ACT vs. other conditions fell between 0.22 and 4.27.

Boloorsaz-Mashhadi (2017) found significant changes in bulimia symptoms, depression, and body image distress when ACT was used in a group of 24 female clients diagnosed with bulimia compared to a waitlist. Similarly, Ashrafi et al. (2020) delivered ACT to 40 overweight females based on body mass index (BMI) measurement and found significant reductions in binging/purging. Momeni et al. (2021) provided ACT to 30 individuals diagnosed with overeating based on a cutoff score, with results showing significant improvements in overeating, depressive symptoms, and self-concept compared to a waitlist.

 In a sample of 30 overweight females based on BMI, Alavi-Hajazi and Nezhadmohammad Nameghi (2018) found that ACT led to significant improvements in anxiety symptoms and interpersonal functioning compared to a waitlist. Data from two studies using the same sample of 30 women (Nourian et al., 2015; Nourian and Aghaei, 2015) suggested that ACT significantly reduced emotional eating and resulted in reduced BMI at follow-up compared to a waitlist. Hedayatzadeh et al. (2020) conducted a similar trial also with 30 females, finding that ACT led to significant changes in anxiety, depression, somatic symptoms, and social dysfunction in women with obesity compared with a waitlist.

 Overall, the seven studies conducted in Iran on ACT for eating disorders and obesity all found ACT effective when compared to a waitlist, including positive impacts on related constructs such as self-concept and interpersonal distress. A missing component of this area of research is how ACT compares to other behavioral interventions for eating-related concerns.

**ACT and Medical Conditions (Psychological Outcomes)**

*Breast Cancer*

Three studies in Iran used ACT to treat mental health concerns among women with breast cancer, with SMDs for ACT vs. other conditions ranging from 0.75 to 4.75.

Ghorbani et al. (2021) found significant changes, compared to a waitlist group, in pain acceptance, depressive symptoms, and psychological flexibility among 40 women diagnosed with breast cancer who scored high in depression and anxiety. Ramezaninezhad-Godarzi and Rahmatiyan (2020) found that ACT led to significant changes in anxiety, depressive symptoms, and general mental compared to a waitlist in a similar patient sample. Lastly, Farokhzadian et al. (2020) similarly found that ACT led to a significant reduction in depressive symptoms among 30 breast cancer patients with high levels of depression compared with a waitlist.

In all, ACT has shown promising pilot data for addressing important psychological facets of breast cancer in Iran, including acceptance, depression, and psychological flexibility. All three studies used a waitlist group, leaving open the question of how ACT compares to active treatments in this specific patient population in Iran.

*Diabetes*

Six studies used ACT to treat co-occurring psychological concerns among patients with diabetes, and SMDs for ACT vs. other conditions in this clinical area spanned from 0.12 to 4.30.

Davoudi et al. (2020) found ACT effective in improving both depression and quality of sleep among 40 patients diagnosed with diabetic neuropathy compared to a waitlist group. Fathi-Ahmadsaraei et al. (2017) also found that ACT led to significant changes in depressive symptoms as compared with a waitlist among 40 patients diagnosed with type-II diabetes. Bastami et al. (2016) provided ACT to 30 male military personnel diagnosed with type-II diabetes and found significant changes in depressive symptoms compared to a waitlist. Hor et al. (2013) likewise found significant changes in depressive symptoms compared to a waitlist in a sample of 30 individuals diagnosed with type-II diabetes. Also, two articles studying children with diabetes (Hadiannajafabadi & Kazemi, 2016; Hadiyan, 2018) found that compared with a waitlist, ACT groups demonstrated a significant reduction in both generalized anxiety and separation anxiety in the same sample of 24 children diagnosed with both type-I diabetes and GAD.

In sum, ACT for diabetes is an emerging area of research in Iran, with six studies indicating its effectiveness in treating anxiety, depression, and other commonly co-occurring symptoms. Notably, ACT was compared to a waitlist in all studies, and each used relatively small sample sizes, suggesting the need for active comparisons with larger groups in this medical population.

*Gastric Wound and Dysfunction*

Two studies used ACT as an intervention for mental health aspects of gastrointestinal conditions, with SMDs of outcomes for ACT vs. other conditions ranging from 0.12 to 1.41.

Meschi et al. (2020) provided ACT to 30 patients with gastric wounds and high pain severity and found that it led to a significant reduction in pain and improvements in stress coping. Also, Bakhshi-Bajestani et al. (2021) provided treatment to 30 females diagnosed with gastrointestinal dysfunction, psychosomatic disorder, and type-D personality based on a clinical interview and found significant changes in each of these symptom areas. By considering this evidence, ACT seems to show initial promise as a treatment for gastrointestinal-related concerns in Iran but is currently limited in the number of studies in this domain.

*HIV/AIDS*

To date, one study in Iran has used ACT as an intervention for individuals living with HIV/AIDS, and the SMD for ACT compared to a waitlist was 1.09.

Faezipour et al. (2018) provided ACT to 24 patients diagnosed with HIV and found significant reductions in depressive symptoms compared with a waitlist. Missing in this body of work now is studies with larger samples and ones examining other psychological outcomes compared to ACT with HIV/AIDS patients in Iran.

*Physical Disability*

Zemestani and Mozaffari (2020) have provided an 8-session ACT with the participation of 52 outpatients with 25% to 50% impairment (meeting the International Classification of Functioning, Disability and Health (ICF; WHO, 2019) criteria for moderate impairment in physical disability (impairment based on B codes). They have found that the treatment has led to significant changes in depressive symptoms and improved psychological flexibility, psychological well-being, and emotion regulation compared with the group who received only psycho-education-related material. SMDs for outcomes in this study for ACT vs. other conditions ranged from 1.57 to 2.70.

*Multiple Sclerosis (MS)*

One study in Iran compared ACT to CBT in treating depression among patients with MS. Nikoogoftar and Khanaliloo (2016) found that both therapies outperformed a waitlist among 45 patients diagnosed with MS and reporting at least moderate depression. However, CBT was more effective that ACT in reducing the severity of depressive symptoms. More research can further clarify the effectiveness of ACT compared to other treatments within this medical population. The SMD for ACT vs. a waitlist was 0.49 in this single study.

*Chronic Pain*

Eight studies in Iran targeted pain-related concerns, largely with female patients, with the SMDs for ACT vs. other conditions falling between 0.22 and 4.19.

Jenaabadi and Hosseini (2020) delivered ACT to 30 females diagnosed with chronic low back pain and found that ACT led to significant reductions in pain intensity and increases in the sense of coherence (long-term outlook on life, as well as their ability to discover and utilize resources to maintain and improve health in stressful situations; Sarah & Beatriz, 2012) and psychological well-being compared with the waitlist. Mousavi et al. (2018) also provided ACT with a group of 20 female clients diagnosed with low back pain and found significant changes in pain intensity and duration and improved quality of life compared with a waitlist. Nazari (2018 found that ACT led to significant changes in pain intensity and disability among 30 elderly individuals compared to a waitlist. Also, Irandoost et al. (2014) delivered ACT to 40 females diagnosed with chronic back pain and found significant changes in pain severity compared to a waitlist group. Sabour and Kakabraee (2016) provided ACT to 30 similar patients compared and found that treatment led to significant changes in pain severity, depressive symptoms, stress symptoms, and pain acceptance compared to a waitlist.

Mousavi et al. (2019) compared ACT biofeedback for 30 female clients diagnosed with chronic low back pain and found both treatments led to significant and equal changes in severity and duration of pain and improvements in overall quality of life compared to a waitlist group. However, ACT had a larger impact on psychological, social, and environmental health components compared to biofeedback. Orki et al. (2018) compared ACT to emotion regulation and a waitlist for 30 females dual-diagnosed with chronic back pain and MDD based on a clinical interview. The authors found significant and equal changes between the two therapies in depressive symptoms, chronic pain, and life satisfaction, as compared with the waitlist. In a final study with 30 male clients diagnosed with chronic pain, Anvari et al. (2014) found that ACT led to a reduction in pain intensity, pain-related anxiety, and enhancement in pain acceptance compared to a waitlist.

As a whole, ACT for chronic pain is an active area of research in Iran. Six studies found positive outcomes when ACT was compared to a waitlist. In two studies comparing ACT to other active conditions, ACT seemed to perform largely equal to biofeedback and emotion regulation, though evidence suggested that ACT may work more specifically on some aspects of pain-related quality of life. Importantly, all but one of these studies enrolled only female clients, leaving open some questions regarding the generalizability of these findings.

*Migraine*

Seven studies in Iran used ACT for migraine patients, compared to both waitlists and other therapies, and the SMDs for ACT vs. other conditions ranged from 0.08 to 3.07 in this area of work.

Motamedi et al. (2012) compared an ACT group to treatment as usual group (medical treatment for migraines) with 30 individuals diagnosed with migraines and found that ACT led to reductions in anxiety, migraine disability, and the affective dimension of pain intensity. However, the effect was insignificant for the sensory dimension of pain intensity compared to treatment as usual. Khazraee et al. (2018) used a similar design with 33 clients, finding that the ACT group demonstrated significant changes in pain intensity, headache disability, and enhancement of cognitive-emotion regulation compared to treatment as usual. Babahasani et al. (2020) tested ACT among 40 patients diagnosed with migraines and found that ACT led to significant reductions in experience and perception of suffering, existential anxiety, and enhancement of emotion regulation compared with a waitlist. In addition, Gharaie-Ardekani et al. (2012) delivered ACT to 30 females diagnosed with migraines and found that it significantly reduced pain severity and enhanced pain acceptance compared to a waitlist.

 Javadi et al. (2019) enrolled 45 patients diagnosed with migraines into three groups: ACT, mindfulness-based therapy, and a waitlist. Compared to the waitlist, both treatments demonstrated a similar effect in reducing pain severity and enhancing the quality of life, with no significant differences between the two active groups. Behrad et al. (2018) compared ACT to positive psychotherapy and waitlist for 45 patients diagnosed with migraines and found that both therapies significantly and equally have reduced pain severity and enhanced pain acceptance and self-efficacy. In addition, Fathi et al. (2021) compared ACT to emotion regulation and a waitlist for 30 females diagnosed with chronic headaches, finding that both active treatments showed significant and similar changes in pain severity and resiliency during treatment. However, ACT outperformed emotion regulation on both of these variables at follow-up.

 ACT as an intervention for the management of migraines constitutes a busy area of research in Iran. In four trials, ACT outperformed waitlist conditions in reducing migraine severity along with important associated variables such as anxiety and general quality of life. Importantly, however, three studies comparing ACT to active conditions did not find large differences between the ACT and other psychological treatments for migraines. There was a small signal that the ACT differentially affected pain and resiliency in one trial of migraine sufferers.

*Infertility and perinatal concerns*

Four studies in Iran examined ACT for perinatal populations, and the SMDs for ACT vs. other conditions spanned 0.30 to 5.73 in this clinical area.

Hosseinpanahi et al. (2020) provided ACT as a couple's intervention to 54 total individuals dealing with infertility and found significant improvements in quality of life and mental health compared to a waitlist. Shojaeifar et al. (2019) targeted postpartum depression among 52 women with an unwanted pregnancy and elevated depression, finding that ACT led to significant reductions in the severity of depression compared to a waitlist. The remaining two studies targeted women who had undergone in vitro fertilization (IVF). In Feyzi et al. (2017), ACT led to significant reductions in anxiety and depression compared to a waitlist condition among 35 women using IVF and also diagnosed with anxiety and depression according to a clinical interview. Similarly, Fetrati et al. (2019) found improvements in anxiety, depression, and overall quality of life when ACT was provided to women using IVF with at least moderate depression based on a cutoff score.

Taken together, this set of studies provides evidence of ACT as a viable intervention for perinatal issues, including distress associated with infertility, unwanted pregnancy, or IVF. ACT was found to be superior to waitlist conditions in each of these areas, though it was not compared to any alternative treatments.

**ACT and Biological Markers**

Nineteen RCT studies, distinct from the previously reviewed RCTs, have been conducted to assess the effects of ACT on biological markers. These trials have been mostly conducted among patients with diabetes and the remaining with patients with coronary disease, kidney disease, and multiple sclerosis. The SMDs for ACT vs. other conditions ranged from 0.001 to 5.44 in these studies of biological markers. More information on each study can be found in the online supplement. The effects of ACT as an adjunct to treatment as usual on biomarkers are summarized below in terms of significant and null effects.

Nine studies have investigated the effect of ACT on HbA1C (Glycated Hemoglobin), of which two studies did not find a significant effect (Azadi et al., 2019; Mousavi et al., 2017), while the remaining have found a significant effect for ACT on HbA1C (Shayeghian et al., 2016; Hor et al., 2018; Hosseini et al., 2021; Rahimi et al., 2019; Rahimi et al., 2019; Nasiri et al., 2020; Ganjavi et al., 2021).

One study (Moghaddam Dizaj Herik et al., 2021) has found a significant effect of ACT on high and low-density lipoprotein and a null effect on indices of blood glucose, insulin, insulin resistance, total cholesterol, and triglycerides. Another study (Moghaddam Dizaj Herik et al., 2020) did not find a significant effect of ACT on insulin sensitivity and C-reactive protein. Ghaedrahmati & Jabalameli. (2019) have found a significant effect of ACT on urinary glucose excretion and a null effect on urinary protein excretion. Two studies by Dortaj et al. (2019; 2021) were concerned with Interleukin-12 and found a null effect of ACT on the mentioned.

Tavakoli et al. (2021) found a significant effect of ACT on systolic hypertension. Moreover, Baradaran et al. (2016) have found a significant effect of ACT on cortisol levels and systolic and diastolic blood pressure. Two studies have found a significant effect of ACT on blood pressure (Haddadi et al., 2021; Kalbasi et al., 2021). Mottaghi et al. (2021) also have found a significant effect of ACT on systolic and diastolic blood pressure.

**Study Quality and Risk of Bias**

Appendix C contains the results of methodological quality and risk of bias assessment for each included study. In regards to studies of ACT for psychological disorders, studies were determined to be moderately poor quality for GAD (scored 12 to 27), PTSD (scored 20 to 24), other anxiety (scored 19 to 30), eating disorders (scored 18 to 25), obesity (scored 16 to 24), mood disorders (scored 18 to 30), and substance use (scored 16 to 24). Studies assessing ACT for SAD (scored 18 to 32) and OCD (scored 17 to 41) were rated as average quality.

For trials of ACT for medical populations, ratings were moderately poor for cancer (scored 11 to 22), gastric (scored 20 to 21), HIV/AIDS (scored 21), MS (scored 19), pain (scored 15 to 23), migraine (scored 21 to 24), and infertility and other perinatal concerns (scored 18 to 25). Studies that applied ACT to patients with diabetes (scored 21 to 36) and general disability were rated as average quality (scored 26). We rated the methodological quality of studies of ACT on biomarkers as moderately poor (scored 16 to 29).

The reviewed studies present a multiplicity of bias risks. First, common comorbidities associated with the treatment target were not taken into account. Secondly, due to a lack of explicit review of the sessions' taped or recorded transcripts, it was not possible to determine treatment fidelity, and study outcomes were also not evaluated by a rater who was blind to the treatment group. Additionally, there was a lack of reporting on adverse events during clinical trials and how this may have impacted outcomes. We also did not find indications that an intent-to-treat method for data analysis was used. Studies also did not incorporate potential therapist and site effects in their conclusions. Finally, balancing of allegiance effects for type of treatment by practitioners was not clearly addressed in these trials.

**Discussion**

The goal of this paper was to review the RCTs of ACT that have been conducted in Iran and disseminate the findings to a western English-speaking audience. Through a collaboration of Iran- and USA-based authors, we were able to collate all available RCTs and synthesize them into categories that are more familiar to Western authors while identifying the study qualities that are central to research in Iran. Using PRISMA guidelines, we included 110 RCTs across the following psychological areas: GAD, PTSD, OCD, social anxiety disorder, substance use disorder, mood disorder, eating disorder and obesity, and other anxiety disorders. Medical areas included: cancer management, diabetes management, gastric wounds and dysfunction, pain, migraine, coping with infertility and pregnancy, and single studies for HIV/AIDS, disability, and multiple sclerosis. Finally, there were a set of studies that evaluated biological markers of medical issues as the primary outcome, including HbA1C, insulin resistance and lipid profile, insulin sensitivity and C-reactive protein, urinary protein, glucose excretion, interleukin-12, blood pressure, and cortisol level.

 Certain diagnoses had substantial amounts of research completed, such as OCD (14 studies) and substance use disorder (11 studies). Just using these two areas as examples, the work done in Iran greatly increases our body of knowledge about the utility and parameters of ACT for OCD. To our knowledge, there had only been two RCTs of ACT for OCD, and both were conducted in the USA (Twohig et al., 2010 & Twohig et al., 2018). Therefore, the addition of 14 randomized trials phenomenally increases our understanding of the effects of ACT in this area. For example, the work in Iran has shown the effectiveness of ACT for adolescent OCD, ACT for OCD when compared to SSRIs, and the additive effects of ACT plus SSRIs. Due to SSRIs being a first-line intervention in Iran and their medical systems being well-integrated with psychological care, these types of trials are common. Finally, the sheer number of trials has allowed some unique findings that had not been identified in the English-published literature before, including some process of change differences between ACT and CBT for OCD.

 Similarly, a recent review of ACT for substance use disorders (Osaji et al., 2020) excluded all studies not published in English, thus likely excluding all studies in this review. Additionally, that review only included 22 studies; thus, this review increases the data on which ACT for substance use disorders by 50%. Included in this review are some innovative studies, such as the treatment of individuals using methamphetamine and those using methamphetamine who are experiencing comorbid psychosis. An additional study randomized participants who were in recovery from methamphetamine use, and this study, like others, showed ACT had stronger effects on cravings than comparison conditions. Findings, like we saw in OCD and substance use disorders, were seen across the topic areas; we are simply providing these two as strong examples of how much the work out of Iran needs to be integrated into Western research.

 Beyond these examples of how an awareness of ACT research from Iran could increase knowledge of ACT as applied to specific clinical domains, it is also worthwhile to compare what the overall findings of our review say about the efficacy of ACT in Iran compared to Western samples. The recent review of meta-analyses by Gloster et al. (2020) assessed effect size data from 133 randomized trials and determined ACT to be broadly efficacious across many of the same clinical categories included in our review of work from Iran. However, the studies reviewed were mainly from Western countries due to publication in English being inclusion criteria. Similar to the review by Gloster et al. (2020), we found broadly positive effects for ACT in Iran across a diversity of problem areas and when compared to both active and inactive control groups. However, a more precise direct comparison is difficult to make since the majority of studies from Iran did not report effect sizes or reliable change rates. Our own calculations of standardized mean differences, where possible, produced a wide range of effect sizes, from very small to quite large, within each area of ACT research in Iran. This suggests that there is great variability in the effect of ACT among the studies we reviewed, and future work can parse apart what factors may contribute to better effects when implementing ACT in Iranian contexts.

 From a research design standpoint, there are some important and innovative features in the literature from Iran that we do not see in other bodies of work. For example, there are some unique treatment targets that have rarely been tested with ACT, such as death anxiety, depression with infertility or unwanted pregnancies, and psychological care concurrent with medical conditions such as hypertension or diabetes. Next, the studies reviewed also sometimes measured constructs reflecting important aspects of mental health that seem to be more emphasized in Iranian culture than in Western countries. Some examples include guilt, shame, self-compassion, cognitive flexibility, transdiagnostic quality of life, a personal sense of coherence, and existential anxiety. Finally, while the authors often used waitlist or gold-standard treatment comparison conditions (e.g., CBT), there were sometimes unique comparison conditions such as schema therapy, metacognitive therapy, or functional analytic psychotherapy. This is all offered to highlight examples of the innovative, impactful research being conducted in Iran and the importance of increasing awareness of this research and its integration into the literature among Western scholars.

 There are cultural practices that are worth noting as they may clarify some of the study designs. First, Iran does not have large research funding, so many of the studies are unfunded and integrated into routine medical care. Thus, statistical power to detect treatment effects was often low in studies, and many of the trials would be categorized as pilot studies. Second, religious practices demand the separation of men and women in certain settings, and thus a good number of these studies include only men or only women because the setting requires that study design. Third, as there is an embargo between USA and Iran, Iranian researchers' access to USA-based training material is limited. Thus, the sheer amount of research in Iran is even more impressive considering that it often involved translating a freely available study protocol rather than actively collaborating with established ACT researchers in other countries. Additionally, while ACT-focused conferences have started to occur in Iran, for the majority of the time, dissemination of ACT was limited in Iran. About one-third of the reviewed RCTs were published in 2020 or 2021, indicating the rapid growth of ACT research in Iran, which also mirrors the growth of ACT research and published RCTs globally (ACBS, 2022b).

This review also aims to highlight a potential approach for future efforts to bridge other areas of contextual behavioral science (CBS) scholarship across languages, particularly as it pertains to increasing awareness, integration, and citations of research being conducted in non-English speaking cultures. Such work is critical for reducing gaps in research applying CBS outside of WEIRD samples, as well as increasing the awareness and recognition of research being conducted by scholars in countries that are not primarily English-speaking. This is the largest review in an English-language peer-reviewed journal to date that we are aware of that confirms the generalizability of ACT outcome findings across a wide range of clinical populations to a specific, non-WEIRD culture. Similar reviews are needed on ACT literature identified in countries and regions such as South Korea (An, 2020) and other countries in the Middle East and Asia (ACBS, 2022a).

 There are some limitations in this review that are important to note. Almost all of the included studies failed to report effect sizes, leaving us unable to estimate the efficacy of ACT interventions from a quantitative standpoint. Also, the lack of access to scholarly databases of Iranian research to those outside the country limits the reproducibility of our search and its findings. The scope of the review did not include some aims that would further aid the interpretation of the ACT RCT literature in Iran, including meta-analyses estimating aggregate effect sizes or a review of the methodological quality of each trial. A meta-analytic approach would have allowed for more direct comparisons with reviews of ACT research comprising mainly studies conducted in Western countries. A meta-analysis was not conducted due to the broad scope of studies reviewed, which spanned a variety of populations, treatment targets, and comparison conditions that would not be appropriate to combine into an aggregate effect size and would not be feasible to include in a single manuscript if divided into appropriate subgroups for a meta-analysis. This heterogeneity might be viewed as a limitation in the review, although given the transdiagnostic focus of ACT, we think the broad inclusion criteria used is strength in clarifying ACT research comprehensively in Iran.

 Another important limitation in how the body of ACT research from Iran should be interpreted is the overall high risk of bias that we determined was present. According to our review of methodological quality, all of the included studies fell between the moderately poor and average categories. We further found that specific risks of bias were quite common in this set of studies, including trends of low diagnostic specificity, a lack of treatment fidelity assessments, and a lack of clarity on whether full intent-to-treat samples were included in analyses. Any conclusions about the data we extracted should be interpreted in light of these factors. At the same time, it is worth considering the difficulty in assessing methodological quality and the risk of bias for research conducted in a cultural context so different from most previously published ACT work. Furthermore, existing methodological rating systems for RCTs often primarily focus on features of rigor that do not necessarily fit the priorities of CBS, that can be less inclusive to clinical trial research in non-WEIRD settings, and which are likely to lead to low scores in part due to the unfunded, pilot nature of the research being conducted in Iran. A related limitation is that this review focused on RCTs to the exclusion of other methodologies that are central to CBS, such as single-subject designs and laboratory-based studies. The focus on RCTs was a practical choice due to the large number of clinical trials conducted on the ACT in Iran, and future reviews are needed that explore other key methodologies and areas of CBS in Iran and other non-English language literature.

 In conclusion, this review represents a collaboration of Iranian and USA researchers to analyze all RCTs on the ACT to date that were conducted in Iran. This will allow for greater integration of work from Iran into Western research. This study is important because there have been enormous accomplishments in Iran, and English-speaking authors should be aware of this work and integrate it into their research.

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Figure 1: Flow diagram of the search.

Title/abstracts from databases

 (n =3240)

Title/abstracts

From manual search

(n =4)

**Identification**

Abstracts/articles after duplicates removed

(n = 2780)

**Included**

**Eligibility**

**Screening**

Records excluded based on title and abstract

(n = 1676)

-

Abstracts/articles screened

(n = 2780)

Records excluded (n = 994)

-were not pertinent;

-not met the inclusion criteria.

Full-text articles assessed for eligibility

(n = 1104)

Studies included in qualitative synthesis

 (n = 110)