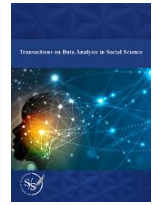




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The Effect of Acceptance and Commitment Therapy (ACT) on Depression in University Students Considering Their Level of Psychospiritual Development: A Single-Case Study

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ARTICLE INFO	ABSTRACT
<p>Article History: Received 4 August 2022 Received in revised form 5 October 2022 Accepted 2 November 2022 Available online 5 December 2022</p>	<p>Depression is one of the most prevalent mental disorders, making the selection of effective treatment approaches critically important. Given the role of spirituality in depression and its treatment, this study aimed to examine the impact of individuals' psychospiritual development on the effectiveness of Acceptance and Commitment Therapy (ACT) using a single-case study design. Four students diagnosed with major depression were selected from Tarbiat Modares University through convenience sampling. Based on the Psychospiritual Development Scale [1], participants were divided into two groups of two individuals each: high psychospiritual development and low psychospiritual development. Each participant received ACT tailored to their respective level of psychospiritual development. Depression scores were measured using the Beck Depression Inventory before, during, and after the intervention, as well as at a three-month follow-up. Changes were evaluated using improvement percentages and effect sizes. The results indicated that ACT effectively reduced depression in students; however, its impact was greater in students with lower levels of psychospiritual development. These findings suggest that considering the psychospiritual development level of clients is crucial when selecting an appropriate therapeutic approach.</p>
<p>Keywords: Depression, Acceptance and Commitment Therapy (ACT), Psychospiritual Development</p>	

1. INTRODUCTION

Major depression is one of the most prevalent mental disorders worldwide [2]. According to the latest World Health Organization reports in 2017, depression is projected to be the second leading cause of disability globally by 2020 [3]. The consequences of depression are not limited to the individual's personal well-being but extend to family, society, interpersonal relationships, and the mental health system [4]. Therefore, selecting appropriate treatment approaches and identifying factors that influence their effectiveness is critically important.

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One significant factor affecting depression, which also plays a key role in the selection and efficacy of treatment approaches, is individuals' religious and spiritual beliefs [5]. Religious beliefs, due to their role in coping strategies, can reduce the incidence of depression and accelerate recovery [6]. Various studies have demonstrated a significant negative correlation between depression and individuals' religious beliefs [7, 8, 9, 10]. However, as Pargament notes, what is most important is the way individuals perceive and define religion and God [11]. Phillips et al. found that individuals who view God as punitive and rejecting (a negative perception) are more likely to experience fear and anxiety, gradually reducing their psychological well-being [12].

According to Janbozorgi, the reason some individuals cultivate inaccurate mental images of God and organize their relationship with God based on those images relates to their level of spirituality. He defines spirituality as the process of choosing valuable, purposeful, and meaningful actions through the activation of divine reason, a definition adopted in the present study. Janbozorgi emphasizes that therapists should pay particular attention to the clients' religious processes and spiritual development [1].

Naks et al. similarly argue that previous experiences with religion and spirituality should be considered when selecting appropriate treatment plans [13]. Regarding the role of spiritual beliefs in the effectiveness of psychological interventions, Genia highlights psychospiritual development, asserting that a person's understanding of spirituality, like many other concepts, is influenced by their level of psychospiritual development [14]. Genia proposes five stages of psychospiritual development: *self-centered religion*, *dogmatic religion*, *transitional or liminal religion*, *restructured religion*, and *transcendent religion*, each with its own spiritual and psychological characteristics. He argues that intervention strategies should align with the client's developmental stage. Genia also demonstrated a positive correlation between psychospiritual development and intrinsic religiosity, and a negative correlation with extrinsic religiosity [15]. Richards et al. further suggest that attention to clients' intrinsic and extrinsic religious orientations provides a useful starting point for counselors, aiding in the selection of appropriate therapeutic approaches. Clients with extrinsic religiosity benefit from exploring feelings during therapy sessions, whereas those with intrinsic religiosity benefit from examining and making meaning of their beliefs [16]. Williams also emphasizes that therapeutic approaches should differ based on whether clients have an intrinsic or extrinsic religious orientation [17].

In line with this, Janbozorgi notes that intervention strategies for clients at the lowest psychospiritual stage (*self-centered religion*) differ from those used at higher stages [18]. Individuals at lower stages tend to attribute human-like characteristics to God, align themselves with absolute authority figures, and strictly follow religious rules and symbols. They often experience intense guilt regarding behavior and anger, which can inhibit the internalization of values. These individuals also demonstrate low flexibility and limited acceptance of religious diversity. Conversely, higher psychospiritual stages involve re-evaluating prior beliefs, reorganizing spiritual values and thoughts, and relying on personal conscience. Individuals at these stages have achieved religious identity, demonstrating commitment to their chosen faith, purpose, and personal development based on that faith. Consequently, they can tolerate religious diversity and exhibit greater psychological flexibility. While not necessarily fully mentally healthy, individuals at higher psychospiritual stages are less susceptible to severe psychological harm [19]. Therefore, therapeutic approaches should align with clients' characteristics, guiding them toward acceptance and flexibility.

Genia cautions that, despite the growing popularity of spiritually oriented therapies, these approaches can trigger religious defenses and reduce treatment effectiveness [15]. Gued also notes that some clients feel uncomfortable discussing religion and spirituality in therapy, fearing judgment by the therapist, labeling of their religiosity as harmful, or language differences between client and therapist [20]. Myers et al. found that certain religious beliefs, such as "God punishes me," may complicate clients' spiritual interpretation of their problems [21]. To minimize such issues, the present study employed a therapeutic approach without direct spiritual content, ensuring that observed differences reflect clients' spirituality and psychospiritual development rather than treatment content.

Among psychotherapies without direct spiritual content, Acceptance and Commitment Therapy (ACT) appears most compatible with individuals at lower psychospiritual development stages and demonstrates efficacy for these clients. ACT combines metaphors, mindfulness skills, experiential exercises, and value-based behavioral interventions, aiming to help clients lead more meaningful and satisfying lives by enhancing acceptance and psychological flexibility [22]. Empirical evidence of ACT's effectiveness across psychological disorders is

increasing, including its efficacy for depression and suicidal thoughts [23, 24, 25], obsessive-compulsive disorder [26, 27], and anxiety [28, 29].

Given the role of spiritual beliefs and psychospiritual development in the effectiveness of therapeutic approaches, this study examines whether ACT has differential effects on depression reduction in individuals with high versus low psychospiritual development. Furthermore, it investigates whether ACT reduces depression regardless of psychospiritual development level.

2. RESEARCH METHOD

To examine the effect of Acceptance and Commitment Therapy (ACT), a single-case study design was employed. The study population included students and clients attending the Counseling Center at Tarbiat Modares University, whose depression had been diagnosed by the center's specialists. Given the nature of the single-case study design, the sample consisted of four participants. According to a two-factor, two-group design, two participants were assigned to each group. Sampling was conducted using a convenience method, and participants were randomly assigned to the groups.

After selecting the sample, participants were categorized based on their level of psychospiritual development into two groups of two: one with high psychospiritual development and one with low psychospiritual development. Subsequently, both groups received ACT. The therapy comprised 10 individual sessions, each lasting one hour, delivered once weekly. Three missed sessions were considered as dropout criteria. Inclusion criteria required participants to have a Beck Depression Inventory (BDI) score above 19, non-psychotic depression, no severe personality disorders, no concurrent psychological treatment, and informed consent to participate.

Depression scores were collected at two time points before treatment (baseline), three times during the intervention, and once at three-month follow-up. Data were analyzed using percentage improvement [30] and Cohen's effect size [31].

3. RESEARCH INSTRUMENTS

Beck Depression Inventory (BDI): The BDI was developed in 1963 by Beck to assess depression severity and was revised in 1994. The inventory consists of 21 items, each scored from 0 to 3, assessing one symptom of depression per item. Test-retest reliability ranges from 0.48 to 0.86, with a mean of 0.68. Kaviani and Mousavi (2007; as cited in Rajabi & Yazdkhasti, 2014) reported a Cronbach's alpha of 0.87, test-retest reliability of 0.74, and correlation with the original BDI version of 0.93.

Psychospiritual Development Questionnaire: Based on Genia's clinical criteria for psychological clients [15], this questionnaire was adapted by Janbozorgi [33] with cultural and religious orientation. It includes 15 items with five response options corresponding to Genia's five stages of psychospiritual development. Deljou et al. assessed internal consistency in an Iranian female student sample (n=341), obtaining a Cronbach's alpha of 0.88. In the present study, preliminary validation using a sample of 172 participants yielded a Cronbach's alpha of 0.47, and test-retest reliability of 0.71.

Acceptance and Commitment Therapy Protocol: Similar to other psychotherapies, ACT has multiple protocols for various psychological disorders. This study employed the Eifert and Forsyth protocol [34]. Therapy was delivered individually by the researcher, including homework assignments, and encompassed the following general principles:

Table 1. ACT Content Across Sessions

Session	ACT Content
1	Introduction to session structure; overview of ACT rationale and basic principles.
2	Examination of common beliefs about anger; assessment of personal costs of anger.
3	Identifying the roots of individual anger conflicts and resolving them through mapping the anger process.
4	Introduction to two situations where controlling anger is ineffective: controlling others and controlling painful emotions.
5	Learning self-control instead of controlling others; adopting a less rigid mindset toward emotions.
6	Active acceptance; understanding the importance of accepting anger and underlying emotions, self, and vulnerabilities.
7	Learning to accept experiences using mindfulness-based acceptance skills.
8	Identifying personal values and discovering what is important to the individual.
9	Confronting grievances through forgiveness.
10	Practical application of values and planning for their implementation.

4. DATA ANALYSIS

Demographic characteristics, illness duration, and prior treatment history of each participant are presented in Table 3. The mean age of participants was 27.6 years. In each therapy group, participants with low psychospiritual development were assigned as Participant 1 and 2, and participants with high psychospiritual development were assigned as Participant 3 and 4.

Table 2. Demographic and Clinical Characteristics of Participants

Acceptance and Commitment Therapy (ACT)				Intervention Type
Participant 4	Participant 3	Participant 2	Participant 1	Participant
29	30	33	24	Variables
High	High	Low	Low	Age (years)
Single	Married	Single	Single	Psychospiritual Development Level
Bachelor’s	Bachelor’s	Master’s	Bachelor’s	Marital Status
12 months	6 months	8 months	10 months	Education
2 counseling sessions	None	None	2 counseling sessions	Duration of Illness
				Prior Treatment

To examine the effect of Acceptance and Commitment Therapy, participants were first categorized into two groups based on their initial level of psychospiritual development: high psychospiritual development and low psychospiritual development. Subsequently, percentage improvement and effect size for depression were calculated for each group.

Effect size for the intervention was computed during the intervention and follow-up phases based on each group’s mean and standard deviation using Cohen’s formula.

$$d = \frac{M_1 - M_2}{\sqrt{\frac{S_1^2 + S_2^2}{2}}} \tag{1}$$

Table 3. Descriptive Statistics of Depression Scores at Pre-Test, Post-Test, and Follow-Up

Follow-Up		Intervention		Baseline		spiritual-psychological development
Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	
2/12	6/5	4/6	7	3/56	21	Low
0/71	10/50	4/72	11/50	3/42	24/50	High

In the above formula, M_1 represents the pre-test mean, M_2 the post-test mean, S_1 the pre-test standard deviation, and S_2 the post-test standard deviation. The following table presents descriptive statistics for depression scores at pre-test, post-test, and follow-up for the Acceptance and Commitment Therapy (ACT) intervention.

Based on these data, the mean depression scores in the ACT group were as follows:

- **Low psychospiritual development:** Baseline = 21, Intervention = 7, Follow-up = 6.5
- **High psychospiritual development:** Baseline = 24.5, Intervention = 11.5, Follow-up = 10.5

The overall percentage improvement and effect sizes for depression in the ACT group at the intervention and follow-up phases are presented in the next table.

Table 4. Overall Improvement Percentage and Effect Size of Acceptance and Commitment Therapy on Depression

Effect Size		Overall Improvement Percentage		spiritual-psychological development
Follow-up	Intervention	Follow-up	Intervention	
4/9	3/4	-0/7	-0/7	Low
5/7	3/2	-0/6	-0/5	High

Based on these data, the overall improvement in depression during the intervention phase was higher in the low psychospiritual development group (70%) compared to the high psychospiritual development group (50%). In other words, although the improvement percentage for both groups exceeded 50%, indicating successful outcomes for both, the group with low psychospiritual development demonstrated considerably greater improvement in depression than the high-level group. This superiority persisted during the follow-up phase.

To further examine the clinical significance of these results, effect sizes were calculated for both groups during the intervention and follow-up phases. According to Ferguson, effect sizes less than 0.41 indicate minimal effect, 0.41–1.15 indicate moderate effect, 1.15–2.7 indicate high effect, and greater than 2.7 indicate a very large effect [31]. As shown in Table 4, the effect size during the intervention phase for depression in both groups was very large (greater than 2.7), with the low psychospiritual development group exceeding the high-level group. Therefore, it can be concluded that Acceptance and Commitment Therapy has a stronger impact on reducing depression in individuals with low psychospiritual development compared to those with high psychospiritual development.

Subsequently, the analysis considered the therapeutic effects of the intervention regardless of psychospiritual development levels. To evaluate the overall effect of Acceptance and Commitment Therapy on depression, overall improvement percentage, overall effect size, and the reliable change index (RCI) were utilized. The RCI was calculated to determine statistically significant changes based on the mean and standard deviation of the treatment groups using the following formula:

$$R = \frac{X_2 - X_1}{S_{diff}} \tag{2}$$

In this equation, X_1 represents the participant's pre-test (baseline) score, X_2 represents the post-test score of the same participant, and S_{diff} is the standard error of the difference between the two scores.

Descriptive statistics for depression scores at pre-test, post-test, and follow-up for participants receiving Acceptance and Commitment Therapy (ACT) are presented in the table below.

Table 5. Descriptive Statistics of Depression Scores in Pre-test, Post-test, and Follow-up

Follow-up		Baseline		Intervention		Group
SD	Mean	SD	Mean	SD	Mean	

0/96	8/5	4/2	9/25	3/62	22/75	Acceptance and Commitment Therapy (ACT)
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Based on these data, the mean depression score for participants receiving ACT was 22.75 at baseline, 9.25 at the intervention phase, and 8.5 at follow-up.

The table below presents the overall improvement percentages for depression during the intervention and follow-up phases.

Table 6. Overall Improvement Percentage and Effect Size of the Groups in Depression

Group	Overall Improvement (%)	Effect Size	Reliable Change Index
	Intervention	Follow-up	Intervention
Acceptance and Commitment Therapy	61	67	3

Based on these data, the depression improvement among participants receiving Acceptance and Commitment Therapy (ACT) during the intervention phase (61%) was comparable to that of the Cognitive-Behavioral Therapy (CBT) group (60%). In other words, the improvement rate for both treatment groups exceeded 50%, indicating clinically significant progress, yet the difference between the two groups was minimal and close. This equivalence was maintained during the follow-up phase as well.

To further examine the clinical significance of the findings, effect sizes were calculated for each treatment group at both the intervention and follow-up phases. As shown in the table, the effect size of ACT during the intervention phase was large (greater than 2.7). Similarly, during the follow-up phase, the effect size for each treatment group remained above 2.7, indicating a large effect. Furthermore, the Reliable Change Index demonstrated that, given its value exceeded 1.96, one can attribute the observed improvement to the treatment with 95% confidence.

Therefore, it can be concluded that Acceptance and Commitment Therapy effectively reduces depressive symptoms regardless of participants' levels of spiritual-psychological development.

5. DISCUSSION AND CONCLUSION

As noted previously, the present study demonstrated that Acceptance and Commitment Therapy (ACT) has a greater impact on depression in clients with low levels of spiritual-psychological development compared to those with high levels. These findings align with previous research on the overall effectiveness of ACT in reducing depression. Zettle [35], for example, found that participants in the experimental group, compared to a waitlist control, experienced lower levels of depression both after the intervention and at follow-up. Similarly, Har and colleagues [36] examined the effects of ACT on depression in 30 participants and reported significant differences between pre- and post-test scores in the experimental group compared to the control group. They concluded that ACT effectively reduces depressive symptoms, with effects maintained at follow-up.

Although no previous research specifically examined why ACT is more effective for individuals with low spiritual-psychological development, this finding can be explained from a different perspective. Individuals with lower spiritual-psychological development tend to exhibit high self-centeredness and rigid thinking, which makes them react more extremely to challenges and stressors and reduces their cognitive flexibility. Consequently, they face more psychological difficulties. Interventions that enhance flexibility are therefore particularly effective for these individuals. ACT focuses on developing cognitive flexibility as a core component of psychological health and a primary goal of therapy [37]. Numerous studies have confirmed the effect of ACT on psychological flexibility [38, 39]. The ACT process encourages individuals to take responsibility for behavioral changes and to adaptively balance persistence and change according to situational demands [40]. Thus, by targeting rigidity and self-centeredness, ACT enhances cognitive flexibility in clients with low spiritual-psychological development, producing a stronger impact on depression than in those with high spiritual-psychological development, who already demonstrate greater flexibility.

The present study also showed that, regardless of spiritual-psychological development, ACT effectively reduces depressive symptoms, consistent with prior research. For instance, Folk and colleagues [41] found that individuals

receiving ACT exhibited significantly lower depressive symptoms, better mental health, and higher quality of life compared to controls at both post-treatment and follow-up. Hayes et al. [37] reported similar results, showing that participants receiving ACT experienced greater reductions in depressive symptoms compared to those receiving conventional therapies. Folk and Parling [42] also demonstrated that middle-aged adults with depression who received ACT had lower depression scores than those in control groups.

The effectiveness of ACT in reducing depression can be attributed to its core processes. The primary goal of ACT is to increase cognitive flexibility through six interrelated processes: acceptance, defusion, self-as-context, present-moment awareness, values, and committed action [43]. This approach posits that human suffering arises from cognitive inflexibility, reinforced by cognitive fusion and experiential avoidance. Individuals often attempt to avoid or modify unpleasant thoughts, emotions, or sensations, but these efforts paradoxically intensify the very experiences they seek to escape [43]. Depressed individuals frequently engage in such avoidance, which exacerbates their symptoms. ACT teaches clients to observe and accept distressing thoughts and feelings rather than suppress or avoid them. Clients also learn to act in alignment with personal values, breaking cycles of rumination and avoidance, thereby reducing depressive symptoms.

Hayes and Strosahl [22] assert that when experiential avoidance and cognitive fusion dominate, psychological inflexibility results. According to ACT, psychopathology arises from entanglement with internal experiences, such as thoughts (cognitive fusion), leading to maladaptive efforts to control or avoid them (experiential avoidance), which often produce paradoxical effects that exacerbate distress and impair quality of life [44]. Dennis et al. [45] also highlighted the key role of cognitive fusion and experiential avoidance in depressive syndromes. One of ACT's main objectives is to enhance psychological flexibility, helping clients disengage from cycles of avoidance and fusion through acceptance and committed action.

Moreover, ACT specifically aims to reduce experiential avoidance by fostering acceptance of unavoidable, unpleasant experiences, such as depressive feelings, cultivating mindfulness to mitigate excessive cognitive entanglement, and clarifying personal values to guide behavior. Clients are encouraged to fully engage with their experiences without judgment while pursuing meaningful goals. This process increases motivation to act despite obstacles, ultimately improving quality of life, particularly in the psychological domain.

Overall, these findings suggest that spiritual-psychological development plays an important role in the effectiveness of ACT. Attention to clients' spiritual and psychological variables is crucial when evaluating the impact of different therapeutic approaches. Nevertheless, research on ACT is still emerging, and further studies are necessary to elucidate the mechanisms underlying its therapeutic effects.

6. LIMITATIONS OF THE STUDY

Several limitations of the present study should be acknowledged, and the interpretation and generalization of its results should be approached with caution. First, the study was conducted exclusively among students of Tarbiat Modares University. Therefore, generalizing the findings to other student populations, other universities, or clinical populations should be done cautiously. Additionally, due to the single-case study method, a minimal sample size was evaluated and analyzed. It is evident that employing alternative methods, such as a quasi-experimental design, could increase the statistical power of the analyses and enhance the generalizability of the results.

Transparency Statement

The data supporting this study are available upon reasonable request to the corresponding author, subject to ethical and confidentiality considerations.

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Declaration of Interest

The authors declare that they have no competing interests.

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