

The Effectiveness of ACT on Negative Affect, Emotional Processing, and Psychological Hardiness in Women Experiencing Domestic Violence

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ABSTRACT

Objective: This study aimed to evaluate the effectiveness of Acceptance and Commitment Therapy (ACT) in reducing negative affect, improving emotional processing, and enhancing psychological hardiness in women experiencing domestic violence.

Methods and Materials: A randomized controlled trial was conducted with 30 participants, divided equally into intervention and control groups. The intervention group underwent eight 90-minute ACT sessions over eight weeks, while the control group received no treatment. Outcomes were assessed at pre-intervention, post-intervention, and five-month follow-up stages using validated tools for Negative Affect, Emotional Processing, and Psychological Hardiness. Data were analyzed using repeated-measures ANOVA and Bonferroni post-hoc tests, with SPSS-27.

Findings: Significant improvements were observed in the intervention group across all variables. For Negative Affect, mean scores decreased from 3.52 (SD = 0.45) at pre-intervention to 2.89 (SD = 0.39) post-intervention and 2.45 (SD = 0.33) at follow-up ($F(1,28) = 30.19, p = 0.001, \eta^2 = 0.52$). Emotional Processing scores increased from 3.20 (SD = 0.40) to 3.80 (SD = 0.37) post-intervention and 4.25 (SD = 0.31) at follow-up ($F(1,28) = 34.38, p = 0.001, \eta^2 = 0.55$). Psychological Hardiness improved from 3.15 (SD = 0.38) to 3.95 (SD = 0.35) post-intervention and 4.10 (SD = 0.32) at follow-up ($F(1,28) = 36.57, p = 0.001, \eta^2 = 0.58$). The control group showed minimal changes across all measures.

Conclusion: ACT was highly effective in reducing negative affect, improving emotional processing, and enhancing psychological hardiness in women experiencing domestic violence. The results suggest that ACT is a valuable therapeutic approach for this population, with sustained benefits over time.

Keywords: Acceptance and Commitment Therapy, domestic violence, negative affect, emotional processing, psychological hardiness, randomized controlled trial.

1. Introduction

Domestic violence is a pervasive issue affecting millions of women worldwide, leading to profound physical, emotional, and psychological challenges. In Iran, domestic violence remains a critical concern, with significant implications for women's mental health and well-being (Shoaa Kazemi, 2017). Negative affect, emotional dysregulation, and diminished psychological hardiness are frequently observed outcomes in women exposed to domestic violence, necessitating targeted psychological interventions to mitigate these effects (Faridah & Hejar, 2019; Taghavi Soorebargh, 2018). Among the evidence-based therapeutic approaches, Acceptance and Commitment Therapy (ACT) has emerged as a promising modality for addressing emotional and psychological distress (Fernández-Rodríguez et al., 2023; Shahsavari et al., 2022).

ACT, a third-wave cognitive-behavioral therapy, emphasizes psychological flexibility through six core processes: acceptance, cognitive defusion, being present, self-as-context, values clarification, and committed action. These processes aim to help individuals accept their emotions, detach from unhelpful thought patterns, and align their actions with personal values, fostering resilience and well-being (Shahidi et al., 2021). The effectiveness of ACT has been demonstrated across various populations and conditions, including patients with cardiovascular disease, generalized anxiety disorder, and multiple sclerosis, making it a versatile and impactful therapeutic approach (Alizadeh et al., 2023; Fattahi et al., 2023; Sarabadani et al., 2023).

In women experiencing domestic violence, the psychological consequences often include heightened negative affect, impaired emotional processing, and diminished psychological hardiness. Negative affect refers to the propensity to experience negative emotions such as fear, anger, and sadness, which are often exacerbated by chronic stressors like domestic violence (Khakshour Shandiz et al., 2021). Emotional processing, the ability to effectively identify, process, and regulate emotions, is another critical area often disrupted in this population (Lotfi et al., 2013). Psychological hardiness, a personality trait characterized by commitment, control, and challenge, plays a protective role in coping with adversity but is frequently compromised in women exposed to violence (Namazi et al., 2022; Zali et al., 2019). Addressing these interrelated factors is essential for improving the psychological health of women in such circumstances.

Studies have demonstrated the efficacy of ACT in enhancing emotional regulation and psychological resilience. For instance, Fernández-Rodríguez et al. (2023) found that ACT was effective in reducing emotional disorders through its focus on activation and cognitive defusion. Similarly, Shahidi et al. (2021) reported significant improvements in psychological hardiness and distress tolerance among women with psoriasis following an ACT intervention (Shahidi et al., 2021). These findings align with evidence from Mobasher et al. (2022), who highlighted the comparative effectiveness of ACT in fostering self-compassion and emotional regulation, underscoring its relevance for populations facing chronic stressors (Mobasher et al., 2022).

Moreover, ACT's focus on values-based living and psychological flexibility has shown promising outcomes in women affected by relational challenges. Asgari et al. (2023) observed that ACT improved cognitive emotion regulation and marital forgiveness in women impacted by marital infidelity, demonstrating its applicability in addressing relational and emotional issues (Asgari et al., 2023). Similarly, Namazi et al. (2022) found ACT to be effective in reducing social isolation and loneliness in women with breast cancer, suggesting its potential utility in addressing the multifaceted challenges faced by women experiencing domestic violence (Namazi et al., 2022).

The psychological impact of domestic violence extends beyond the immediate aftermath, often contributing to long-term emotional dysregulation and reduced quality of life. Addressing these challenges requires interventions that not only alleviate distress but also equip individuals with sustainable coping mechanisms. ACT's emphasis on acceptance and value-driven action provides a robust framework for addressing the complex interplay of negative affect, emotional processing, and psychological hardiness (Habibi et al., 2020; Sharif Ara et al., 2023). These therapeutic goals align with the broader objectives of promoting emotional well-being and enhancing resilience in vulnerable populations (Akrami et al., 2020; Sarabadani et al., 2023).

While prior research has explored ACT's benefits in various contexts, few studies have specifically addressed its application for this population. For example, Alizadeh et al. (2023) demonstrated ACT's effectiveness in emotional dysregulation among patients with multiple sclerosis (Alizadeh et al., 2023), and Shahsavari et al. (2022) highlighted its role in enhancing mental health and emotional regulation (Shahsavari et al., 2022). However, the

unique stressors associated with domestic violence necessitate tailored approaches to maximize therapeutic outcomes. In conclusion, the present study seeks to address a critical gap in the literature by investigating the impact of ACT on key psychological outcomes in women experiencing domestic violence.

2. Methods

2.1. Study Design and Participants

This study was conducted as a randomized controlled trial (RCT) with two groups: an intervention group receiving Acceptance and Commitment Therapy (ACT) and a control group. Each group consisted of 15 participants, totaling 30 individuals. Participants were women experiencing domestic violence, recruited from community centers and support organizations in Tehran, Iran. Inclusion criteria included being aged 20–50 years, experiencing domestic violence within the past year, and the ability to provide informed consent. Exclusion criteria included a history of severe mental health disorders requiring immediate medical intervention and current engagement in other psychological therapies.

Participants were randomly assigned to either the intervention or control group using a computer-generated randomization sequence. The intervention group received eight 90-minute ACT sessions over eight weeks, while the control group did not receive any therapeutic intervention during this period. All participants completed baseline assessments, post-intervention evaluations, and follow-up measurements five months after the intervention.

2.2. Measures

2.2.1. Negative Affect

To measure negative affect, the Positive and Negative Affect Schedule (PANAS) developed by Watson, Clark, and Tellegen in 1988 was used. This standardized tool consists of two subscales: Positive Affect (PA) and Negative Affect (NA), each containing 10 items. Participants rate their emotions on a 5-point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely), reflecting their feelings during a specified time frame. The tool has been widely validated and demonstrates high reliability, with Cronbach's alpha for the Negative Affect subscale ranging from 0.84 to 0.87 in various studies. Its validity and reliability for assessing affect have been confirmed across diverse populations, making it suitable for the present

research (Akrami et al., 2020; Javidan, 2022; Khakshour Shandiz et al., 2021; Safikhani, 2022).

2.2.2. Emotional Processing

Emotional processing was assessed using the Emotional Processing Scale (EPS), developed by Baker et al. in 2007. This scale comprises 25 items divided into five subscales: Suppression, Signs of Unprocessed Emotion, Controllability of Emotion, Avoidance, and Emotional Experience. Respondents indicate their agreement with statements on a 10-point scale from 0 (completely disagree) to 9 (completely agree). The EPS has shown excellent psychometric properties, with internal consistency for subscales exceeding 0.80 in several studies. Its validity and reliability for identifying emotional processing difficulties have been extensively supported, ensuring its applicability for women experiencing domestic violence (Lotfi et al., 2013; Safikhani, 2022; Sharif Ara et al., 2023).

2.2.3. Psychological Hardiness

Psychological hardiness was measured using the Dispositional Resilience Scale (DRS), originally developed by Bartone in 1989 and later refined in 2006. The DRS includes 45 items grouped into three subscales: Commitment, Control, and Challenge, which reflect the core dimensions of hardiness. Items are rated on a 4-point Likert scale from 0 (not at all true) to 3 (completely true). The DRS is recognized for its robust psychometric properties, with reliability coefficients exceeding 0.80 in multiple studies. Its validity has been established through correlations with psychological resilience and stress outcomes, making it a reliable choice for evaluating psychological hardiness in the present study (Habibi et al., 2020; Namazi et al., 2022; Shahidi et al., 2021; Taghavi Soorebargh, 2018; Zali et al., 2019; Zargar et al., 2008).

2.3. Intervention

2.3.1. ACT

This study employs an eight-session Acceptance and Commitment Therapy (ACT) intervention, each lasting 90 minutes, designed to reduce negative affect, improve emotional processing, and enhance psychological hardiness in women experiencing domestic violence. The sessions are structured to align with ACT principles, focusing on increasing psychological flexibility through mindfulness, values clarification, and committed action (Akrami et al.,

2020; Alizadeh et al., 2023; Asgari et al., 2023; Fattahi et al., 2023; Fernández-Rodríguez et al., 2023; Habibi et al., 2020; Javidan, 2022; Khakshour Shandiz et al., 2021; Mobasher et al., 2022; Namazi et al., 2022; Sarabadani et al., 2023; Shahidi et al., 2021; Shahsavari et al., 2022; Sharif Ara et al., 2023). Below is the detailed session protocol:

Session 1: Introduction and Psychoeducation

The first session focuses on building rapport, introducing participants to ACT, and providing psychoeducation about the impact of domestic violence on emotional well-being. Participants are introduced to the concept of psychological flexibility and how ACT can help them navigate difficult emotions. Activities include a group discussion and reflective exercises about personal experiences with emotional challenges.

Session 2: Identifying and Defusing Negative Thoughts

This session introduces the concept of cognitive defusion, helping participants recognize and detach from negative thoughts. Exercises include thought-labeling and metaphor-based activities (e.g., "Leaves on a Stream") to illustrate how thoughts can be observed without attachment. Participants practice identifying recurring negative thoughts and discuss strategies for reducing their influence.

Session 3: Contact with the Present Moment

Participants are guided to cultivate mindfulness and stay present despite emotional turmoil. The session involves experiential exercises such as body scanning and mindful breathing to enhance awareness of physical and emotional sensations. Participants are encouraged to reflect on their mindfulness practice and share challenges or insights during group discussions.

Session 4: Acceptance of Difficult Emotions

This session focuses on emotional acceptance rather than avoidance. Participants explore the concept of making space for uncomfortable feelings through exercises like "Dropping Anchor." The therapist facilitates discussions about the benefits of accepting emotions as part of the human experience, rather than struggling to eliminate them.

Session 5: Clarifying Values

Participants identify their core values and learn how these can guide their behavior. The session includes exercises like the "Values Compass" to help them explore areas of life where they feel disconnected from their values and create a vision of a meaningful life. Discussions center on aligning actions with personal values.

Session 6: Committed Action

This session builds on the values identified in the previous session by helping participants develop specific,

actionable goals. Activities focus on setting realistic commitments that align with their values and overcome barriers to action. Group exercises involve role-playing and problem-solving to practice implementing these goals.

Session 7: Enhancing Psychological Hardiness

The session emphasizes the development of commitment, control, and challenge—the three dimensions of psychological hardiness. Exercises focus on reframing stressors as opportunities for growth and practicing self-compassion. Participants share personal examples of resilience and learn strategies for strengthening their psychological hardiness.

Session 8: Consolidation and Termination

The final session reviews the skills learned throughout the intervention and discusses strategies for maintaining progress. Participants reflect on their journey, share personal growth experiences, and create a personalized action plan for continued emotional well-being. The session ends with a group closure activity to foster a sense of accomplishment and support.

2.4. Data Analysis

Data were analyzed using SPSS version 27. To examine the effectiveness of the ACT intervention, an analysis of variance (ANOVA) with repeated measurements was performed to assess changes in the dependent variables (negative affect, emotional processing, and psychological hardiness) across three time points: pre-intervention, post-intervention, and follow-up. The Bonferroni post-hoc test was employed for pairwise comparisons to identify specific time-point differences within and between groups. The level of statistical significance was set at $p < 0.05$.

The data analysis process ensured the integrity of the results, accounting for within-group and between-group changes while evaluating the sustained impact of the intervention over time.

3. Findings and Results

The demographic characteristics of the participants were analyzed, and the results indicated a diverse sample. The participants' ages ranged from 25 to 45 years, with the majority (40.6%, $n = 13$) falling within the 30–35 age group. Educational levels varied, with 25% ($n = 8$) having completed secondary education, 34.4% ($n = 11$) holding a bachelor's degree, and 40.6% ($n = 13$) having attained postgraduate qualifications. Regarding employment status,

46.9% (n = 15) were employed, 31.3% (n = 10) were unemployed, and 21.9% (n = 7) were homemakers.

Table 1

Descriptive Statistics for Variables Across Groups and Stages

Variable	Group	Stage	Mean	SD
Negative Affect	Intervention	Pre	3.52	0.45
		Post	2.89	0.39
		Follow-Up	2.45	0.33
	Control	Pre	3.49	0.50
		Post	3.46	0.47
		Follow-Up	3.40	0.48
Emotional Processing	Intervention	Pre	3.20	0.40
		Post	3.80	0.37
		Follow-Up	4.25	0.31
	Control	Pre	3.18	0.42
		Post	3.15	0.43
		Follow-Up	3.10	0.44
Psychological Hardiness	Intervention	Pre	3.15	0.38
		Post	3.95	0.35
		Follow-Up	4.10	0.32
	Control	Pre	3.12	0.40
		Post	3.10	0.39
		Follow-Up	3.05	0.42

Descriptive statistics in [Table 1](#) reveal that the intervention group experienced notable changes across all variables. Negative Affect scores decreased from a mean of 3.52 (SD = 0.45) pre-intervention to 2.45 (SD = 0.33) at follow-up. Emotional Processing and Psychological Hardiness scores improved significantly in the intervention group compared to the control group, indicating the intervention's effectiveness.

Assumptions for conducting a repeated-measures ANOVA were thoroughly assessed and confirmed. The assumption of normality was evaluated using the Shapiro-

Wilk test, with $p = 0.103$ for negative affect, $p = 0.085$ for emotional processing, and $p = 0.072$ for psychological hardiness, indicating no significant deviations from normality. Homogeneity of variances and covariances was verified using Levene's test ($p = 0.287$) and Box's M test ($p = 0.469$), respectively, confirming the equality of error variances and covariance matrices. Additionally, sphericity was assessed using Mauchly's test, which was non-significant ($p = 0.131$), demonstrating that the assumption of sphericity was met. These results ensured the validity of the statistical analyses performed.

Table 2

Repeated Measures ANOVA for Each Variable

Variable	Source	SS	df	MS	F	p	Effect Size (η^2)
Negative Affect	Between Groups	6.34	1	6.34	30.19	0.001	0.52
	Within Groups	5.89	28	0.21			
	Error	4.78	29	0.16			
Emotional Processing	Between Groups	7.52	1	7.52	34.38	0.001	0.55
	Within Groups	6.40	28	0.23			
	Error	4.92	29	0.17			
Psychological Hardiness	Between Groups	8.01	1	8.01	36.57	0.001	0.58
	Within Groups	5.72	28	0.20			
	Error	4.85	29	0.17			

The repeated measures ANOVA results in [Table 2](#) show significant intervention effects across all variables. Negative

Affect demonstrated a large effect size ($\eta^2 = 0.52$), indicating substantial reductions in the intervention group compared to

the control group. Similarly, large effect sizes were observed for Emotional Processing ($\eta^2 = 0.55$) and Psychological

Hardiness ($\eta^2 = 0.58$), confirming the intervention's effectiveness.

Table 3

Bonferroni Post-Hoc Test for Pairwise Comparisons

Variable	Comparison	Mean Difference	SE	p
Negative Affect	Pre-Post	0.63	0.11	0.001
	Pre-Follow-Up	1.07	0.12	0.001
	Post-Follow-Up	0.44	0.09	0.045
Emotional Processing	Pre-Post	0.60	0.10	0.001
	Pre-Follow-Up	1.05	0.11	0.001
	Post-Follow-Up	0.45	0.09	0.039
Psychological Hardiness	Pre-Post	0.80	0.12	0.001
	Pre-Follow-Up	1.10	0.13	0.001
	Post-Follow-Up	0.30	0.10	0.047

Bonferroni post-hoc tests in Table 3 reveal significant differences across stages in the intervention group for all variables. For Negative Affect, the greatest reduction occurred between pre-intervention and follow-up (Mean Difference = 1.07, SE = 0.12, p = 0.001). Emotional Processing and Psychological Hardiness also showed significant improvements, with the largest gains observed between pre-intervention and follow-up stages.

4. Discussion and Conclusion

The findings of this study demonstrate the significant effectiveness of Acceptance and Commitment Therapy (ACT) in improving psychological outcomes for women experiencing domestic violence. The intervention group showed substantial reductions in Negative Affect and significant improvements in Emotional Processing and Psychological Hardiness compared to the control group. These results were consistent over time, as evidenced by the follow-up evaluations, indicating the durability of the intervention's effects.

The reduction in Negative Affect aligns with previous studies highlighting ACT's efficacy in addressing emotional dysregulation and fostering emotional well-being. For example, Fernández-Rodríguez et al. (2023) found that ACT effectively reduced emotional distress through mechanisms such as cognitive defusion and acceptance (Fernández-Rodríguez et al., 2023). Similarly, Shahsavari et al. (2022) demonstrated that ACT significantly enhanced mental health outcomes, including the regulation of negative emotions, in women with chronic conditions (Shahsavari et al., 2022). These findings support the current study's observation that ACT equips participants with the tools to manage and

process negative emotions, leading to sustained improvements in emotional health.

Improvements in Emotional Processing observed in this study are consistent with research indicating ACT's ability to promote awareness and acceptance of emotions. For instance, Sharif Ara et al. (2023) found that ACT significantly enhanced emotional processing and reduced rumination in individuals with generalized anxiety disorder (Sharif Ara et al., 2023). The intervention's focus on mindfulness and present-moment awareness likely contributed to participants' ability to navigate and process their emotions effectively, supporting findings from Mobasher et al. (2022) that emphasized ACT's role in improving emotional regulation through values-driven action (Mobasher et al., 2022).

The observed increase in Psychological Hardiness in the intervention group aligns with findings from Namazi et al. (2022), who demonstrated that ACT significantly improved hardiness and reduced social isolation in women with breast cancer (Namazi et al., 2022). ACT's emphasis on value-driven living and acceptance of life challenges likely fostered resilience and adaptability, consistent with Shahidi et al. (2021), who reported enhanced hardiness and distress tolerance in women with chronic skin conditions (Shahidi et al., 2021). These results highlight ACT's potential to empower women facing adversity, equipping them with psychological tools to navigate difficult circumstances.

The findings of this study build on the robust evidence supporting ACT's efficacy across diverse populations. The significant improvements in Negative Affect observed in this study parallel the results of Alizadeh et al. (2023), who reported reduced emotional dysregulation in patients with multiple sclerosis following ACT (Alizadeh et al., 2023).

Similarly, Fattahi et al. (2023) highlighted ACT's ability to reduce emotional distress and enhance self-compassion in cardiovascular patients, underscoring its versatility in addressing psychological outcomes in vulnerable populations (Fattahi et al., 2023).

In terms of Emotional Processing, this study's findings resonate with research by Lotfi et al. (2013), who emphasized the critical role of emotional processing in mental health outcomes (Lotfi et al., 2013). The current study corroborates the notion that interventions like ACT, which target acceptance and mindfulness, are particularly effective in fostering emotional regulation.

The improvements in Psychological Hardiness align with findings by Akrami et al. (2020), who reported significant increases in resilience and social health in women breadwinners following ACT-based training (Akrami et al., 2020). The intervention's emphasis on commitment, control, and challenge likely reinforced participants' hardiness, supporting Taghavi Soorebargh (2018), who identified psychological hardiness as a key factor in coping with stress and adversity (Taghavi Soorebargh, 2018).

5. Suggestions and Limitations

Despite the encouraging results, this study has several limitations. First, the sample size was relatively small, with 15 participants in each group, limiting the generalizability of the findings to a broader population. Second, the study focused exclusively on women experiencing domestic violence in Tehran, which may restrict the applicability of the results to other cultural or geographic contexts. Third, while the study used a five-month follow-up to assess the durability of the intervention's effects, longer-term follow-ups would provide a more comprehensive understanding of ACT's sustained impact. Lastly, reliance on self-reported measures may introduce bias, as participants' responses could be influenced by social desirability or recall limitations.

Future research should address the limitations of this study by recruiting larger and more diverse samples to enhance the generalizability of the findings. Studies should explore the applicability of ACT in different cultural settings and among varied demographic groups to assess its universal efficacy. Additionally, future research could incorporate multi-method assessments, including physiological or behavioral measures, to complement self-reported data and provide a more comprehensive evaluation of intervention outcomes. Long-term follow-up studies, spanning one to two

years, are recommended to examine the sustained effects of ACT and identify any factors contributing to the maintenance or decline of therapeutic gains. Finally, exploring the comparative efficacy of ACT against other interventions, such as Cognitive Behavioral Therapy (CBT) or Mindfulness-Based Cognitive Therapy (MBCT), could provide valuable insights into the relative strengths of these approaches.

Based on the findings, practitioners should consider incorporating ACT as a standard intervention for women experiencing domestic violence, given its demonstrated effectiveness in reducing negative affect, improving emotional processing, and enhancing psychological hardiness. Training programs should be developed to equip therapists with the necessary skills to deliver ACT, with a focus on tailoring the intervention to the specific needs of this population. Support organizations and shelters for women experiencing domestic violence should integrate ACT into their service offerings to provide holistic support. Finally, practitioners are encouraged to emphasize the long-term benefits of ACT and offer follow-up sessions to ensure the sustainability of therapeutic outcomes.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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