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Effectiveness of Acceptance and Commitment Therapy on Loneliness-Related Anxiety, Self-Efficacy, and Social Rejection in Adolescents

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ABSTRACT

Objective: This study aimed to examine the effectiveness of Acceptance and Commitment Therapy (ACT) on loneliness, self-efficacy, and perceived social rejection among adolescents.

Methods and Materials: A quasi-experimental pretest–posttest control-group design was used. Thirty participants were selected through convenience sampling and randomly assigned to an experimental group (n = 15) and a control group (n = 15). The experimental group received eight weekly 90-minute ACT sessions, while the control group received no intervention. Data were collected using the UCLA Loneliness Scale, the General Self-Efficacy Questionnaire, and the Perceived Social Rejection Questionnaire. Data were analyzed using multivariate analysis of covariance and follow-up univariate ANCOVAs in SPSS version 26.

Findings: After controlling for pretest scores, the multivariate effect of group was significant, Wilks' Lambda = 0.250, $F(3, 23) = 23.034$, $p = .001$, $\eta^2 = .750$. Univariate analyses showed significant intervention effects on loneliness, $F(1, 27) = 555.477$, $p < .001$, $\eta^2 = .628$; self-efficacy, $F(1, 27) = 239.454$, $p < .001$, $\eta^2 = .528$; and perceived social rejection, $F(1, 27) = 301.050$, $p < .001$, $\eta^2 = .614$. Compared with the control group, the ACT group showed lower loneliness and perceived social rejection and higher self-efficacy at posttest.

Conclusion: ACT significantly reduced loneliness and perceived social rejection and increased self-efficacy. The findings support ACT as an effective intervention for improving psychological flexibility and social-emotional functioning.

Keywords: Loneliness, Acceptance and Commitment Therapy, Self-Efficacy, Social Rejection.

Introduction

Adolescence and youth are recognized as pivotal life stages marked by numerous social, cognitive, biological, and demographic changes that can shape experiences of loneliness (von Soest et al., 2020). Adolescence is a sensitive period in brain development—especially in regions involved in social processing—accompanied by heightened sensitivity to social rejection (Kollo et al., 2024). Such changes often unfold amid major life transitions (e.g., changing or leaving school and preparing to assume adult responsibilities) that can substantially alter an individual's social networks. Navigating these milestones may intensify feelings of loneliness for some adolescents. Because the development of loneliness is dynamic, multiple growth trajectories can be assumed, each arising from different contextual backgrounds (Goossens, 2018). Accordingly, adolescence is a particularly important period for studying loneliness, as it involves diverse demographic, family, social, and personality challenges, each of which can play a crucial role in shaping this experience (Brudner et al., 2023).

Loneliness is a painful experience often accompanied by distress, dissatisfaction, restlessness, and depressed mood across age groups. According to (Perlman et al., 1984), loneliness emerges when individuals perceive a gap between their actual and desired social relationships—whether in quantity or in quality. Evidence indicates that lacking playmates or having unhealthy relationships in childhood, as well as the absence of close friends in adolescence, are linked to loneliness during this period. Moreover, experiencing social rejection at school has been associated with increased loneliness in adolescence (Yang et al., 2022) and in young adulthood (Matthews et al., 2022), highlighting that loneliness can also stem from negative social interactions. It should be noted, however, that loneliness is not synonymous with isolation Victor et al., (2000); rather, it is a subjective state in which individuals with comparable levels of actual social contact may experience different degrees of loneliness (Mund et al., 2020).

Research shows a negative association between self-efficacy and both loneliness and social rejection, underscoring the importance of one's belief in personal capabilities for managing emotional and social challenges (Zhang & Zhang, 2024). This association has been supported across numerous studies emphasizing the central role of self-efficacy in psychological well-being, particularly among students and adolescents (Kollo et al., 2024; Zhang & Zhang, 2024). The mediating role of self-efficacy in loneliness-related anxiety and psychological outcomes also merits attention: higher self-efficacy is associated with reduced anxiety and enhanced coping strategies. Within Bandura's social–cognitive framework, self-efficacy is a foundational construct reflecting individuals' appraisals of their capacity to successfully carry out actions necessary to achieve specific goals (Zhang & Zhang, 2024). These appraisals depend more on subjective beliefs about being able—or unable—to perform tasks than on actual competencies. Findings indicate that adolescents with higher self-efficacy report greater feelings of competence and higher overall life satisfaction (Kollo et al., 2024; Zhang & Zhang, 2024).

In social psychology, rejection is defined as a form of deprivation or devaluation by a desired person, group, or relationship (Wang & Li, 2022). Studies show that perceived rejection is consistently associated with negative emotional outcomes such as depression, feelings of worthlessness, loneliness, a diminished self-concept, and lower self-esteem (Dambreville, 2019). Social exclusion focuses more on relational issues—such as weak or absent social ties with family, friends, the local community, institutions, and the broader society to which one belongs. Factors like insufficient social participation, feelings of powerlessness, and lack of social integration are also key dimensions of social exclusion. This aspect is defined in terms of individuals' objective circumstances and positions, whereas subjective or psychological exclusion refers to one's personal feelings and interpretations of being excluded or responsible under particular conditions, reflecting a subjective evaluation of one's life situation (Freedman & Dainer-Best, 2024). Perceived social rejection can play a significant role in social maladjustment, anxiety, and psychological isolation. Adolescents who feel sidelined by peers or social

groups not only experience higher levels of anxiety and loneliness but are also more likely to show lower self-efficacy and weaker coping strategies.

From this perspective, attention to psychological interventions—particularly Acceptance and Commitment Therapy (ACT)—is warranted. By enhancing psychological flexibility, fostering acceptance of unpleasant emotional experiences, and strengthening commitment to personal values, ACT may reduce anxiety associated with feelings of rejection and loneliness. Its emphasis on acceptance and personal/spiritual values, and on living in accordance with endorsed values, makes it well suited—ideally so—for individuals with chronic conditions (Graham et al., 2016). A major advantage of ACT over other psychotherapies is its integration of motivational alongside cognitive components, which promotes stronger and more durable treatment effects (Donisi et al., 2024). By increasing awareness and self-acceptance, ACT can also help adolescents develop a stronger sense of self-efficacy in facing social and emotional challenges. Therefore, the present study aimed to examine the effectiveness of ACT on loneliness-related anxiety, self-efficacy, and psychological social rejection in adolescents.

Methods and Materials

Study Design

The present study employed a quasi-experimental design with pretest–posttest and a control group. The study population comprised adolescents in Tehran in the year 1403 (Iranian calendar). Thirty participants were selected via convenience sampling and randomly assigned to experimental and control groups (15 per group).

Inclusion criteria were as follows: adolescents aged 13–18 who exhibited loneliness-related anxiety or perceived social rejection, provided informed assent along with parental or legal guardian consent, were able to attend Acceptance and Commitment Therapy (ACT) sessions regularly, and refrained from receiving other psychotherapies during the study period. Exclusion criteria included severe psychiatric disorders requiring immediate intervention or hospitalization; initiation of psychotropic medication or dosage changes within the previous 6 weeks; a history of suicide attempts or active suicidal ideation at intake; absence from more than two consecutive sessions or more than three sessions overall; and unwillingness to continue participation.

After obtaining informed consent and assuring confidentiality, both groups completed the study instruments, which served as the pretest. The experimental group then participated in the intervention, while the control group received no treatment. The intervention followed a standardized protocol over 8 weekly sessions of 90 minutes each. Upon completion, both groups again completed the instruments, which served as the posttest. Pretest and posttest data were analyzed using multivariate analysis of covariance (MANCOVA) in SPSS version 26.

Instruments

UCLA Loneliness Scale, Version 3 (UCLA-LS3). Developed by Russell et al. (1980), this 20-item scale is rated on a 4-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = always). Items 1, 4, 5, 6, 9, 10, 15, 16, 19, and 20 are reverse-scored (i.e., never = 4, rarely = 3, sometimes = 2, always = 1). The mean score is 50; scores above the mean indicate greater loneliness (Lim et al., 2019). The developer reported Cronbach's alpha coefficients ranging from .89 to .94 and convergent validity with the Differential Loneliness Scale by Schmidt & Sermat (1983) , $r = .72$, $p < .01$ (Russell et al., 1980). The scale has been standardized in Iran with Cronbach's alpha of .89; test scores correlated with self-reports of persistent loneliness at $r = .55$, $p < .01$, supporting convergent validity (Bahrami & Borhani, 2023). In the present study, Cronbach's alpha was .82.

General Self-Efficacy Questionnaire (Sherer et al., 1982). This 17-item instrument uses a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) and assesses three behavioral aspects of self-efficacy: willingness to initiate behavior, willingness to expend effort to complete tasks, and persistence in the face of obstacles (Tamadoni et al., 2010). Reported reliability includes Cronbach's alpha of .75 and .81 (Nabavi et al., 2017). Validity and reliability of this questionnairewere also supported by Tamadoni et al. (2010)

and Abdollahi Abdi Ansar et al. (2015). In the present study, Cronbach's alpha was .915.

Perceived Social Rejection Questionnaire. This 4-item scale assesses perceived social rejection Penhaligon et al., (2009), based on MacDonald & Leary (2005) definition. Sample items include: "I feel left out," "I feel socially deprived," "I feel hated," and "I feel rejected." Respondents indicate how often they experience these feelings on a 7-point scale from 1 (never) to 7 (often). Penhaligon et al., (2009) reported Cronbach's alpha of .85.

Intervention: ACT Protocol (8 Sessions)

ACT was delivered in eight weekly 90-minute sessions following Hayes et al. (2010). A summary of session content is provided in Table 1.

Table 1.

ACT Protocol Sessions

Session	Summary of Content
Introduction	Rapport-building with adolescents; completion of demographic forms and pretest; explanation of study goals and treatment process.
1	Introductions (therapist and group), establishing therapeutic alliance; overview of ACT principles and goals; group rules; psychoeducation on anxiety, loneliness, and social rejection; reviewing coping and control strategies; break; homework.
2	Review prior session; feedback; assess readiness for change; clarify expectations of ACT; increase awareness of maladaptive behavior patterns; wrap-up; homework.
3	Identify maladaptive coping strategies and how to disengage from them; introduce acceptance and distinguish it from resignation/avoidance; mindfulness training; identify avoidance situations related to social rejection and loneliness; discuss effective vs. ineffective coping strategies; break; wrap-up.
4	Review; committed action, self-as-context, and cognitive defusion; problem chain interventions and metaphors; practicing managing thoughts and emotions without entanglement in their content; wrap-up; homework.
5	Review; practice activity engagement and mindfulness; nonjudgmental awareness of emotions, feelings, and cognitions; bolster self-efficacy and reduce loneliness-related anxiety; break; wrap-up.
6	Identify personal values; emphasize their importance and the power of choice; practice present-moment awareness; enhance self-efficacy and effective coping with social rejection; break; homework.
7	Review; deepen values and related goals; share values and follow-through strategies within the group; plan concrete actions to sustain values and goals; break; wrap-up.
8	Committed action; identify value-consistent behaviors and strengthen commitment; relapse concept and preparation; overall review; share experiences and unmet expectations; administer posttest and provide final feedback.

Findings and Results

The demographic data indicate that the mean and standard deviation of age in the experimental group were 21.33 and 2.19, respectively, and in the control group were 22.80 and 5.79, respectively. As shown in Table 2, the experimental group exhibited a greater increase in posttest self-efficacy than the control group. Loneliness scores decreased in the experimental group at posttest, with little change in the control group. Psychological social rejection likewise decreased at posttest in the experimental group but showed minimal change in the control group.

Table 2

Means and standard deviations of pretest and posttest scores in the experimental and control groups

Variable	Group	Pretest M	Pretest SD	Posttest M	Posttest SD
Loneliness	Experimental	34.80	1.82	13.13	1.59
	Control	29.80	7.44	31.53	4.99
Self-efficacy	Experimental	45.40	4.17	96.93	6.28
	Control	79.46	5.82	79.33	6.10
Psychological social rejection	Experimental	108.33	8.28	46.06	6.28
	Control	88.93	9.29	88.53	8.95

Before hypothesis testing, assumptions underlying ANCOVA were examined. Shapiro–Wilk tests supported normality of score distributions (p> .01). Box's M test of homogeneity of variance–covariance matrices was not significant (F= 2.546, Box's M= 17.306, p= .058), indicating the assumption was met. Levene's tests indicated homogeneity of error variances for posttest scores across groups (p> .01). The interaction of group with each pretest covariate (loneliness, self-efficacy, psychological social rejection) was not significant (p> .05), satisfying the homogeneity of regression slopes assumption. The multivariate ANCOVA indicated a significant overall group effect on at least one dependent variable after controlling for pretest scores (p< .05) (Table 3).

Table 3

Multivariate tests for the dependent variables

Test	Value	F	df effect	df error	p	η^2
Pillai's trace	0.750	23.034	3	23	.001	0.750
Wilks' lambda	0.250	23.034	3	23	.001	0.750
Hotelling's trace	3.004	23.034	3	23	.001	0.750
Roy's largest root	3.004	23.034	2	23	.001	0.750

Table 4

Univariate ANCOVA results for each dependent variable

Variable	Source	SS	df	MS	F	p	η^2
Loneliness	Pretest	254.891	1	254.891	52.706	< .001	0.598
	Group	2686.359	1	2686.359	555.477	< .001	0.628
	Error	130.576	27	4.836			
Self-efficacy	Pretest	148.030	1	148.030	6.996	.003	0.191
	Group	5066.690	1	5066.690	239.454	< .001	0.528
	Error	571.303	27	21.159			
Psychological social rejection	Pretest	811.633	1	811.633	25.392	< .001	0.441
	Group	9622.836	1	9622.836	301.050	< .001	0.614
	Error	863.034	27	31.964			

In sum, after controlling for pretest scores, significant between-group differences emerged on self-efficacy ($F = 239.454$, $p < .001$, $\eta^2 = .528$), loneliness ($F = 555.477$, $p < .001$, $\eta^2 = .628$), and psychological social rejection ($F = 301.050$, $p < .001$, $\eta^2 = .614$). These effect sizes indicate that approximately 52% of the variance in self-efficacy, 62% of the variance in loneliness, and 61% of the variance in psychological social rejection were attributable to the intervention (ACT) versus control (Table 4).

Discussion and Conclusion

The present study examined the effectiveness of Acceptance and Commitment Therapy (ACT) in reducing loneliness-related anxiety, enhancing self-efficacy, and decreasing perceived psychological social rejection among adolescents. The findings align with prior research e.g., Zell & Stockus, (2025), Bahrami & Borhani, (2023), Zhang & Zhang, (2024), Kollo et al., (2024), Sun et al., (2025), Zwolinski, (2025). Specifically, adolescents who received ACT showed a significant reduction in loneliness compared with the control group, consistent with earlier studies demonstrating the positive impact of psychological interventions on loneliness across populations—particularly among adolescents (Kollo et al., 2024; Zhang & Zhang, 2024).

The mechanisms underlying loneliness reduction appear to stem from several core ACT processes. First, ACT strengthens psychological flexibility, enabling individuals to adapt their thoughts and feelings more effectively to changing circumstances. This flexibility facilitates

acceptance of unpleasant emotions and helps adolescents maintain a coherent sense of identity and self-confidence in challenging social contexts (Bahrami & Borhani, 2023). Second, by deepening connection with personal values, ACT encourages participation in meaningful activities and relationships, which can mitigate feelings of isolation (Sun et al., 2025). Beyond its theoretical foundations, the practical use of mindfulness exercises and focus on everyday activities and social interactions proved helpful. These techniques are essential for managing negative social experiences without labeling or self-blame—patterns that often exacerbate loneliness (Fried & Zehavi, 2022). Through mindfulness practice, participants better regulated emotional responses to social rejection and cultivated greater self-esteem and a more positive self-image Zwolinski (2025). Thus, ACT's capacity to reduce loneliness while simultaneously bolstering adolescents' coping skills in the face of social rejection and emotional isolation is a key finding. This underscores the need to integrate psychological interventions such as ACT into clinical and school settings to enhance adolescents' emotional and social well-being amid complex peer dynamics (Zell & Stockus, 2025).

The findings also highlight ACT's role in increasing adolescents' self-efficacy. Participants in the experimental group showed notable gains in self-efficacy, largely attributable to ACT's emphasis on clarifying personal values, setting value-consistent goals, and engaging in committed action toward those goals. In Bandura's social-cognitive theory, self-efficacy reflects one's belief in the ability to manage challenges and attain goals, thereby influencing overall psychological functioning (Zhang & Zhang, 2024). ACT components—acceptance of emotions, mindfulness practices, and prioritization of values—collectively foster a greater sense of competence in regulating behavior and making informed decisions (Kollo et al., 2024). This approach appears to facilitate the development of more effective coping strategies, enabling adolescents to face life's challenges with greater resilience and a stronger sense of capability. The current results are consistent with previous research emphasizing the pivotal role of self-efficacy in promoting psychological well-being and reducing anxiety Bahrami & Borhani (2023), and suggest that strengthening self-efficacy through structured interventions such as ACT should be considered a core component of adolescent mental-health practice.

Furthermore, the study showed a significant reduction in perceived psychological social rejection among adolescents who received ACT. Participants in the experimental group were able to reinterpret their subjective perceptions of deprivation and social exclusion. This shift was facilitated by ACT's emphasis on accepting unpleasant emotions and focusing on personal values, which helped adolescents reduce negative reactions to social rejection (Zhang & Zhang, 2024). These results underscore the importance of interventions that prioritize psychological flexibility and acceptance in improving adolescents' social experiences. The ability to accept emotional responses rather than react defensively has been shown to improve emotion regulation, thereby strengthening interpersonal relationships and social integration (Kollo et al., 2024). Given the well-documented links between perceived social rejection and increased anxiety, loneliness, and diminished self-efficacy in adolescents Bahrami & Borhani (2023), these findings reinforce the value of ACT in reducing the subjective experience of social exclusion. Ultimately, ACT contributes to improved adolescent mental health and represents a promising avenue for psychological interventions in this vulnerable group (Zell & Stockus, 2025).

In sum, the demonstrated efficacy of ACT in reducing loneliness-related anxiety, increasing self-efficacy, and lowering perceived psychological social rejection among adolescents is consistent with prior evidence and theory. By emphasizing psychological flexibility, acceptance of difficult emotions, and commitment to personal values, ACT enhances mental health and strengthens adolescents' ability to cope with social challenges. The mediating role of self-efficacy in psychological outcomes—including reductions in anxiety and loneliness—has been supported by meta-analytic and empirical research. Likewise, the adverse effects of perceived social rejection and loneliness on mental health, anxiety, self-esteem, and self-efficacy are well documented,

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underscoring the need for interventions such as ACT to mitigate these outcomes.

Limitations and future directions. Despite the important and beneficial findings, this study has limitations that should be considered in interpreting the results. The small sample and convenience sampling limit generalizability. The short intervention period and lack of long-term follow-up precluded assessment of sustained effects. In addition, data were collected through self-report questionnaires, which may be affected by reporting error or perceptual bias. Future research should employ larger samples, longer follow-up periods, and multi-method (including behavioral) assessments to yield more robust and generalizable evidence and to evaluate the longer-term psychological and social impacts of ACT in adolescents.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

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

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Authors' Contributions

All authors equally contribute to this study.

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