

Original Article

The effectiveness of behavioral activation therapy in reducing apathy, hopelessness, and suicidal ideation in adolescents with major depressive disorder: A quasi-experimental study with a two-month follow-up

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Abstract

The aim of the present study was to investigate the effectiveness of group behavioral activation (BA) therapy on reducing apathy, hopelessness, and suicidal ideation in adolescents with major depressive disorder (MDD). The study employed a randomized controlled trial design with pre-test, post-test, and two-month follow-up assessments. The statistical population included all adolescents aged 12-19 years with MDD who were referred to counseling and psychology centers in three educational districts of Kermanshah during the 2023-2024 academic year. Forty participants were selected through purposive sampling and randomly assigned to experimental and control groups, each consisting of 20 individuals. The research instruments included the Behavioral Activation for Depression Scale (BADs), the Hopelessness Scale for Children (HSC), and the Beck Scale for Suicidal Ideation (BSSI). Data were analyzed using mixed ANOVA in SPSS version 27. The results showed a statistically significant group $\times$ time interaction for all variables, confirming the effectiveness of the BA intervention. BA significantly decreased apathy ($F(1, 24) = 12.33, p < 0.001, \eta^2 = 0.24$), hopelessness ($F(1, 22) = 11.18, p < 0.001, \eta^2 = 0.22$), and suicidal ideation ($F(1, 52) = 29.92, p < 0.001, \eta^2 = 0.37$) compared to the control group. Follow-up analyses confirmed that treatment gains were maintained at the two-month follow-up assessment. The effect size was strongest for reducing suicidal ideation ($\eta^2 = 0.37$), followed by apathy ($\eta^2 = 0.24$) and hopelessness ($\eta^2 = 0.22$). The findings suggest that behavioral activation is an effective, evidence-based, and cost-effective intervention for reducing core depressive symptoms and exerting a profound therapeutic effect on high-risk constructs such as hopelessness and suicidal ideation in adolescents. This study emphasizes the importance of implementing BA in clinical and educational settings.

Keywords

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Apathy
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Introduction

Depression is often considered a mental disorder in adults; however, children, particularly adolescents, frequently suffer from it (Hou et al., 2025). Research estimates that approximately 14% of adolescents will meet the diagnostic criteria for depression before the age of 18, and about 25% of adolescents have a history of passing through a depressive episode (Hetrick et al., 2021). Furthermore, the prevalence of depression in adolescents is estimated to have increased over time, with the global identification rate reported at 34% (Shorey et al., 2022). In a meta-analysis conducted in Iran, the prevalence of depression among Iranian adolescents was reported to be 37% overall, with 45% in female adolescents and 28% in male adolescents

(Karimi et al., 2021). This is considered a major public health challenge because adolescent depression can severely impact long-term functioning and quality of life (Colman et al., 2007), leading to serious deficits in social and academic domains (Copeland et al., 2021), an increased incidence of behavioral problems, substance abuse, and other mental disorders (Clayborne et al., 2021; Clayborne et al., 2019). In most affected adolescents, depression goes undiagnosed and untreated (Teymoori et al., 2022). Even among those who receive treatment, the efficacy of antidepressant medications is limited (Menculini et al., 2024). Therefore, the use of a non-pharmacological, preventative strategy in the early stages seems essential, as it can prevent the development of more severe depressive illnesses and their negative long-term consequences in the future.

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One of the prominent features and signs of depression is apathy, which may appear as one of the early symptoms of the disorder (Lázaro-Perlado, 2019). Apathy is defined as an impairment in the motivational system, characterized by a reduced desire to initiate behavior, inactivity, and a decrease in goal-directed behaviors (Green et al., 2022; Khajehmirza et al., 2020). This phenomenon is a key symptom of Major Depressive Disorder, manifesting as a reduction in interest or willingness to engage in physical, cognitive, or emotional activities (de Zwart et al., 2019). Crucially, apathy in depression is a stronger predictor of unfavorable outcomes—such as non-response to treatment, prolonged illness, and reduced functioning—than the severity of depressive symptoms alone (Choubi et al., 2024; Mast, 2016; Groeneweg-Koolhoven et al., 2016). Furthermore, Batail et al. (2018) found that apathy significantly correlates with reduced quality of life and impaired cognitive performance (attention, planning), independent of other symptoms. These findings support the view that apathy is a distinct, critical component in depression pathophysiology requiring independent assessment and treatment (Karimpour Vazifeh Khorani et al., 2025; Weeb et al., 2023).

In adolescents, apathy may manifest as reduced participation in academic, social, and recreational activities, withdrawal from peers, and a lack of desire to plan for the future (Spaeth et al., 2015; Mikaeili & Salmani, 2021). These behaviors are often mistakenly attributed to laziness; however, the underlying mechanism is neurobiological dysfunction in the brain's reward system, specifically impacting prefrontal areas and the mesolimbic dopaminergic pathway responsible for motivation and goal initiation (Anderson & Perone, 2024). This impairment contributes to deeper cognitive changes in depressed individuals (Green et al., 2022), including the weakening of positive future beliefs, which can culminate in futility and hopelessness (Mannekote Thippaiah et al., 2022). In explaining this risk, various cognitive and motivational processes play a crucial role; among these, apathy stands out as a fundamental motivational impairment (Morris et al., 2022). Apathy, characterized by a reduced drive to initiate goal-directed behaviors, plays a crucial role in increasing suicide risk by laying the groundwork for hopelessness (Klim, 2022; Hopko et al., 2013; Morris et al., 2022). Specifically, the loss of capacity to initiate productive activity fosters a perception of a grim, unalterable future (Karimpour Vazifeh Khorani et al., 2025; Weeb et al., 2025; Mannekote Thippaiah et al., 2022).

Among the devastating cognitive components, hopelessness, as a vulnerability factor, is closely correlated with depression and plays a unique role in its development (Choi & Shin, 2023; Marchetti et al., 2023). This construct is defined as the expectation of negative events occurring and/or positive events not occurring, coupled with the belief that the individual is unable to do anything to change this dismal scenario (Beck & Alford, 2009). The emergence of such thoughts jeopardizes the individual's mental health and their interaction with the social environment, making it difficult for them to engage in productive and healthy activities and cope constructively with life's problems (Lima

et al., 2021). In adolescents, hopelessness has deep and extensive effects on their growth and development, leading to reduced cognitive flexibility and the loss of problem-solving ability and constructive coping with difficulties (McLaughlin et al., 1996).

Hopeless adolescents tend to envision a dark future for themselves (Tang et al., 2023). This cognitive deadlock results in multiple consequences such as decreased academic performance, intensification of anxiety and depressive symptoms, and increased high-risk behaviors, including substance use (Lin et al., 2024). According to classic cognitive theories, hopelessness acts as a central vulnerability factor that overrides and modulates other cognitive variables (Huang et al., 2024; Alirahmi et al., 2022; Beck & Alford, 2009). This cognitive deadlock renders hopelessness the strongest predictor of suicidal thoughts and behaviors in the adolescent population (Burhunduli, 2025; Taghavi et al., 2020; Wolfe et al., 2019). Furthermore, research indicates that hopelessness in this period is associated with poorer quality of social relationships, reduced participation in social activities, and greater feelings of loneliness (Moselli et al., 2023). These individuals tend to focus on the past, which can lead to a destructive cycle of hopelessness and psychological symptoms (Liu et al., 2021). hopelessness, as a central cognitive vulnerability factor, is the strongest predictor of suicidal thoughts and behavior in the adolescent population (Burhunduli, 2025; Zhu et al., 2023; Wolfe et al., 2019). Ultimately, this condition not only negatively impacts the development of adolescent identity and independence but also sets the stage for one of the most dangerous consequences of depression, namely Suicidal Thoughts, and increases the risk of developing mental disorders in adulthood (MacPherson et al., 2022; Lin & Guo, 2024).

Suicidal ideation, which involves a preoccupation with death and nonexistence (Kaliush et al., 2025; López, 2024), remains one of the most challenging clinical features of adolescent depression (Erbacher et al., 2023). The significance of this critical link is further emphasized by the fact that suicide is currently the second leading cause of death in this vulnerable age group (Hink et al., 2022; Hemanny et al., 2022). Since many risk factors, including depression and hopelessness, manifest as suicidal ideation before progressing to actual behavior (Bedayat & Askary, 2020; Ribeiro et al., 2018), targeted intervention within this chain—from apathy to hopelessness—is essential to prevent irreversible consequences. This necessitates non-pharmacological treatment strategies that directly target the motivational and cognitive impairment.

One of the treatments specifically designed to counter the deep symptoms of depression, including apathy (Lancôt et al., 2024) and hopelessness (Taylor et al., 2021), consequently reducing the risk of suicidal ideation (Hemanny et al., 2022), is Behavioral Activation (BA); this approach begins with the premise that depression is maintained by reduced positive reinforcement resulting from withdrawal from pleasurable activities, as well as avoidance of activities due to negative expectations (Kaiser Hemanny et al., 2015). The BA model directly addresses the deficit in the motivational system, viewing apathy as a

consequence of reduced purposeful behaviors (Nair et al., 2021); therefore, instead of relying on lost motivation, BA directly targets this behavioral initiation mechanism by initiating structured and scheduled behaviors, rebuilding the positive reinforcement cycle through the acquisition of small, objective accomplishments, and gradually restoring motivation (Wang & Feng, 2022). Furthermore, these tangible successes provide the necessary experiential evidence to challenge the cognitive predictions of futility (hopelessness), indirectly impacting the reduction of hopelessness, which is a primary driver of suicidal ideation (Mewton, & Andrews, 2016), by reactivating the reward system and increasing the meaningfulness of life (Nair et al., 2021). It is posited that BA facilitates this process by leading to the environmental up-regulation of positive reinforcement opportunities.

According to the behavioral model of depression, reduced engagement in rewarding or valued activities leads to diminished positive reinforcement, emotional withdrawal, and the emergence of depressive and apathetic symptoms (Lewinsohn, 1986; Martell et al., 2001). Behavioral Activation therapy (BA) was developed to break this cycle of avoidance and inactivity by systematically increasing participation in meaningful and goal-oriented behaviors. Through scheduling and gradual activation, BA directly targets motivational deficits that underlie apathy and hopelessness, encouraging individuals to experience concrete successes that restore self-efficacy and hope. This mechanism positions BA as particularly effective for treating apathy a state of motivational paralysis and for counteracting hopelessness by reengaging the brain's reward system and enhancing perceived life meaning (Hopko et al., 2013; Dimidjian et al., 2011).

However, based on a review of the research literature, few studies have specifically and simultaneously examined the effectiveness of this treatment on the two key constructs of apathy, hopelessness and suicidal thoughts in Iranian adolescents. Although several studies have demonstrated the efficacy of BA in Western contexts, its effectiveness within the cultural framework of Iranian adolescents, who may experience unique stressors, sociocultural expectations, and family dynamics influencing motivation and hopelessness—remains underexplored. Given the high prevalence of these symptoms and their serious consequences, as well as the need for short-term and non-pharmacological treatments, conducting research in this field seems necessary. Therefore, the present study aimed to answer the basic question of whether behavioral activation therapy is effective in reducing apathy, hopelessness and suicidal thoughts in adolescents with depressive disorder.

Method

Participants

The present study employed a randomized controlled trial (RCT) design with a pre-test, post-test, and a two-month follow-up, utilizing a control group. The population comprised all first and second-grade high school students in Kermanshah during the academic year 2023–2024. The research sample was selected using purposive sampling from adolescents diagnosed with Major Depressive

Disorder (MDD) who were referred to the counseling and psychological centers across the three educational districts of Kermanshah. The inclusion criteria required participants to meet the diagnostic criteria for MDD, present with suicidal thoughts and tendencies, and provide written consent to participate. The recruitment process involved reviewing records at the counseling centers, resulting in 320 initial volunteers who expressed interest. Given the quasi-experimental nature of the research, and citing Cohen (2013) and Gall et al., (1996), the minimum recommended sample size of 30 participants (equally distributed across the experimental and control groups) was considered sufficient for statistical analysis. The sample size for the present study was determined based on calculations performed using the G*Power software (version 3.1). Considering a significance level (α) of 0.05, statistical power of 0.80, and an effect size (f) of 0.25 (medium) for repeated measures ANOVA (within-between interaction), the minimum required sample size was estimated to be 20 individuals per group. Therefore, the total sample size for the present study was set at 40 participants (20 in the experimental group and 20 in the control group). The determination of a medium effect size was based on the recommendation of Cohen (2013) and similar studies conducted in the field of psychological interventions for adolescents with depressive symptoms.

Instrument

Behavioral Activation for Depression Scale (BADS):

The Behavioral Activation for Depression Scale (BADS) was developed by Kanter et al. (2006) as a self-report scale to assess goal-directed behavioral activation and the avoidance of pleasurable behaviors hypothesized to underlie amotivation in depression. The BADS consists of 25 items across four subscales: Activation (7 items), Avoidance/Rumination (8 items), Academic/Occupational Deterioration (5 items), and Social Harm (5 items). The scale uses a 7-point Likert response format ranging from 0 (never) to 6 (completely). When calculating the total BADS score, the scores of all subscales, *except* the Activation subscale, are reverse-scored. This scoring method ensures that a high total BADS score reflects high overall behavioral activation, although individual item scores do not need to be reversed for individual subscale scoring. Reliability has been confirmed across different contexts: Mohammadi and Amiri (2011) reported an overall Cronbach's alpha of 0.85, with subscale alphas ranging from 0.74 to 0.85. The overall Cronbach's alpha reported in the present study was 0.91, demonstrating excellent internal consistency for the BADS in our sample. Given the theoretical link, the reduction in behavioral activation measured by the Activation subscale is closely associated with a decrease in motivation and is thus interpreted in this study as an inverse indicator of apathy.

Hopelessness Scale for Children (HSC):

The Hopelessness Scale for Children (HSC) was developed by Kazdin et al. (1986) based on Beck's Hopelessness Scale

and revised in the same year. The scale consists of 17 true/false items designed to assess hopelessness in children and adolescents aged 8 to 16. Each item is scored as 1 if the response matches the keyed direction and 0 otherwise. Total scores range from 0 to 17, with higher scores indicating greater levels of hopelessness. The scale was originally structured around two main factors: Future Expectations (items 2, 3, 8, 9, 10, 12, 13, 14, 15, 17) and General Happiness about the Future (items 1, 4, 5, 6, 7, 11, 16). Mayer and Anderson (1991) administered the HSC to a sample of 138 children and adolescents aged 7–17, including 100 with major depression and 38 non-depressed participants. Their findings showed that HSC scores significantly predicted suicidal behaviors over a three-year follow-up period. Test–retest reliability was reported as 0.57 over a six-week interval in the depressed group and 0.49 over a ten-week interval in the non-clinical group. In Iran, Najati et al. (2015) translated the HSC into Persian, and the accuracy, readability, and clarity of the translation were verified by a panel of five experts. Exploratory factor analysis in the Iranian population revealed a three-factor structure: inability to identify pathways to goals, lack of agency, and low perceived value of the future. Additionally, a significant negative correlation between total HSC scores and Snyder et al.'s (1996) Children's Hope Scale provided evidence of adequate divergent validity. Internal consistency using the Kuder–Richardson Formula 20 (KR-20 = 0.69) was reported. In a later study by Rezapour Mirsaleh et al. (2022) conducted on adolescent girls, KR-20 = 0.89 was found. In the present study, Cronbach's alpha (equivalent to KR-20 for dichotomous data) was 0.89.

Beck Scale for Suicide Ideation (BSSI):

The Beck Scale for Suicide Ideation (BSSI) is a 19-item self-report instrument that includes subscales assessing death wishes, suicidal intent, and actual suicidal desire (Beck et al., 1979). Each item is rated on a 3-point Likert-type scale ranging from 0 to 2. The scale begins with five

screening items; if the respondent provides a non-zero response to item 5 (indicating any suicidal ideation), they are required to complete the remaining 14 items. Otherwise, the administration stops after the first five items. Higher total scores reflect more severe suicidal ideation. Beck et al. (1979) reported a Cronbach's alpha coefficient of 0.96 for the scale. They also reported significant correlations between the BSSI and the Beck Depression Inventory (BDI) of 0.62 and 0.53 among outpatient and inpatient samples, respectively, and correlations with the Beck Hopelessness Scale of 0.75 and 0.64 in the same groups. The BSSI has been translated into Persian, and its concurrent validity with the General Health Questionnaire (GHQ-28) was reported at 0.76. Its internal consistency, assessed via Cronbach's alpha, was 0.95 (Mirzaei & Shams Alizadeh, 2013). In a study by Mikaeili & Samadifard (2019) conducted on adolescent girls, Cronbach's alpha was 0.84. In the present study, the Cronbach's alpha coefficient for the BSSI was 0.91.

Group Behavioral Activation Therapy:

Behavioral Activation (BA) is an empirically supported psychotherapy for depression grounded in behavioral theory (Dimidjian et al., 2011; Kanter et al., 2010; Jacobson et al., 2001). Numerous studies have demonstrated its effectiveness across diverse populations (varying in age, culture, and ethnicity), delivery formats (in-person, web-based, telehealth), clinical settings (primary care, community programs, long-term care), and intervention intensities (number and duration of sessions) (Bigam lalabadi et al., 2022; Orgeta et al., 2017; Dimidjian et al., 2011; Kanter et al., 2010). In the present study, we implemented a revised, manualized version of BA developed by Lejuez et al. (2011) for adolescents. The intervention was delivered in 10 weekly group sessions, each lasting 90 minutes. The core components and session-by-session content of the Group Behavioral Activation Protocol (Lejuez et al., 2011) are summarized in Table 1.

Table 1. The Abbreviation of Behavioral Activation Sessions of Lejuez et al. (2011)

Session	Objective	Key Content
1	Introduce group members and initiate BA exercises	(a) Group introduction; (b) Psychoeducation on depression and behavioral withdrawal; (c) Rationale for BA: "What have you learned about loss or adversity in your life?" and "Why is session attendance important?"; (d) Introduction to the Daily Activity Review Form (Form 1); rating activities by pleasure and importance; (e) Homework: Complete Form 1 daily.
2	Enhance awareness of life domains, values, and daily activities	(a) Review Form 1; (b) Clarify treatment rationale through homework discussion; (c) Emphasize structure of BA; (d) Administer Life Domains, Values, and Activities Checklist (Form 2); (e) Homework: Continue Form 1; complete Form 2.
3	Prioritize enjoyable and value-consistent activities	(a) Review Form 1; (b) Review and refine Form 2; (c) Complete Activity Selection and Ranking Worksheet (Form 3); (d) Homework: Continue Form 1; revise Forms 2 and 3 as needed.
4	Review homework and plan future activities	(a) Review Form 1; (b) Integrate activity planning into daily review; (c) Homework: Complete Form 1 with planned activities for the coming week.
5	Reinforce activity planning and introduce behavioral contracts	(a) Review Form 1; (b) Introduce Behavioral Contracts (Form 4); (c) Plan next week's activities; (d) Homework: Continue Form 1; maintain/revise Form 4. (Introduction): Briefly introduce the concept of Form 4 to parents (if applicable) to ensure they understand the planned activity structure.
6	Consolidate activity scheduling and contract adherence	(a) Review Form 1; (b) Review Form 4; (c) Plan next week's activities; (d) Homework: Continue Forms 1 and 4. (Focus): Review the adherence/success of the initial Form 4 implementation with parents to troubleshoot barriers in the home environment.

7	Revisit life domains and values	(a) Review Form 1; (b) Re-examine Life Domains, Values, and Activities Checklist (Form 2); (c) Homework: Continue Forms 1 and 4. (Feedback): Discuss with parents whether the activities planned are <i>truly</i> reflecting the stated values of the adolescent across different life domains at home.
8	Revisit activity selection and ranking	(a) Review Form 1; (b) Re-examine Activity Selection and Ranking Worksheet (Form 3); (c) Plan next week's activities; (d) Homework: Continue Forms 1 and 4. (Planning): Collaborate with parents to identify 1-2 new high-value activities that can be scheduled for the upcoming week.
9	Strengthen commitment through behavioral contracts	(a) Review Form 1; (b) Re-examine Behavioral Contracts (Form 4); (c) Plan next week's activities; (d) Homework: Continue Forms 1 and 4. (Reinforcement): Parents participate in a brief final review of the contract structure and their role in providing positive reinforcement for adherence.
10	Generalize skills and prepare for treatment termination	(a) Review Form 1; (b) Plan post-intervention activities; (c) Discuss relapse prevention and termination; (d) Homework: Continue Forms 1 and 4 independently. (Conclusion): Session review with parents regarding sustainable practices post-therapy and identifying resources for ongoing support.

This structured, skills-based protocol emphasizes increasing engagement in meaningful and rewarding activities while reducing avoidance—a core mechanism in the behavioral model of depression. The gradual progression from self-monitoring to values clarification, activity scheduling, and behavioral contracting aligns with the developmental needs of adolescents and supports sustained behavioral change.

Procedure

Eligible individuals entered the study based on scoring on the first five screening questions of the Beck Scale for Suicidal Ideation (BSSI) (1979) and were randomly assigned to the experimental and control groups. Inclusion criteria comprised scoring above the cut-off for suicidal thoughts/tendencies on the pre-test, being between the ages of 12 and 19 (inclusive), not participating in any other concurrent psychological treatment program, and providing consent to participate. Exclusion criteria included more than two sessions of absence from the program, diagnosis of severe mental disorders, and a history of substance abuse. Participants were selected based on both a clinical interview conducted by a clinical psychologist and the scores obtained from the BSSI questionnaire. Written informed consent was obtained from all participants and their parents or legal guardians.

The data was analyzed using SPSS version 27. Descriptive statistics (mean and standard deviation) were used to summarize the data. To evaluate the effectiveness of the intervention, a mixed-design analysis of variance (Mixed ANOVA) was conducted. Assumptions including normality (Shapiro–Wilk test), homogeneity of variances (Levene's test), homogeneity of covariance matrices (Box's M test), and sphericity (Mauchly's test) were examined. Bonferroni post-hoc tests were used for pairwise comparisons where significant interactions were found. Effect sizes were reported using partial eta squared (η^2).

Results

No statistically significant baseline differences were observed between groups across demographic variables (see Table 1), indicating initial group equivalence.

Table 2. Baseline Demographic Characteristics of Participants by Group

Variable	Category	Behavioral Activation (n = 20) n (%)	Control (n = 20) n (%)	Test Statistic	p
Parental Education	Below Diploma	8 (40%)	7 (35%)	$\chi^2(2) = 0.157$	.924
	Associate Degree	5 (25%)	6 (30%)		
	Bachelor's or Higher	7 (35%)	7 (35%)		
Family SES	Low	7 (35%)	8 (40%)	$\chi^2(2) = 0.428$	.807
	Moderate	9 (45%)	7 (35%)		
	High	4 (20%)	5 (25%)		
Age	—	M = 14.40 (SD = 1.69)	M = 14.33 (SD = 1.61)	t(38) = 0.09	.925

Table 3. Means and Standard Deviations for Apathy, Hopelessness, and Suicidal Ideation Across Time

Variable	Group	Pretest M (SD)	Posttest M (SD)	Follow-up M (SD)
Apathy	BA	66.35 (7.54)	74.70 (11.99)	74.35 (10.59)
	Control	65.75 (6.50)	64.90 (10.22)	65.05 (9.42)
Hopelessness	BA	10.75 (2.54)	7.55 (1.57)	7.75 (1.61)
	Control	10.45 (2.48)	10.85 (1.81)	10.55 (2.01)
Suicidal Ideation	BA	14.25 (6.25)	9.05 (5.10)	9.65 (4.57)
	Control	12.55 (5.95)	14.35 (4.73)	14.20 (4.79)

Descriptive statistics (see Table 2) indicate marked improvement in the Behavioral Activation group from

pretest to posttest, with stability at follow-up, whereas the control group demonstrated minimal fluctuation over time.

Table 4. Multivariate Tests (Wilks' Lambda) for Time and Group $\times$ Time Effects

Variable	Effect	Wilks' Λ	F(2, 37)	p	Partial η^2
Apathy	Time	.74	6.46	.004	.26
	Group $\times$ Time	.67	8.93	.001	.32
Hopelessness	Time	.80	4.37	.020	.19
	Group $\times$ Time	.70	7.84	.001	.29
Suicidal Ideation	Time	.84	3.29	.048	.15
	Group $\times$ Time	.56	14.19	.001	.43

Multivariate analyses revealed significant main effects of time and significant Group $\times$ Time interactions for all outcome variables (see Table 3). Effect sizes were

moderate to large, particularly for suicidal ideation (partial $\eta^2 = .43$), indicating substantial differential change between groups across time.

Table 5. Mixed ANOVA Results for Apathy, Hopelessness, and Suicidal Ideation

Variable	Source	df	F	p	Partial η^2
Apathy	Time	(1.24, 47.13)	8.41	.001	.18
	Time $\times$ Group	(1.24, 47.13)	12.33	.001	.24
	Group	(1, 38)	5.58	.023	.13
Hopelessness	Time	(1.22, 46.66)	7.97	.004	.17
	Time $\times$ Group	(1.22, 46.66)	11.18	.001	.22
	Group	(1, 38)	19.68	.001	.34
Suicidal Ideation	Time	(1.52, 57.76)	5.25	.014	.12
	Time $\times$ Group	(1.52, 57.76)	22.73	.001	.37
	Group	(1, 38)	3.13	.084	.07

As shown in Table 4, significant Time $\times$ Group interactions were observed across all variables, indicating

that changes over time differed significantly between the Behavioral Activation and control groups.

Table 6. Bonferroni-Adjusted Pairwise Comparisons Within Groups

Variable	Group	Comparison	Mean Difference	p
Apathy	BA	Pre–Post	8.35	.001
		Pre–Follow-up	8.00	.001
		Post–Follow-up	0.35	1.00
	Control	Pre–Post	–0.85	.712
		Pre–Follow-up	–0.70	.801
		Post–Follow-up	0.15	1.00
Hopelessness	BA	Pre–Post	–3.20	.001
		Pre–Follow-up	–3.00	.002
		Post–Follow-up	0.20	1.00
	Control	Pre–Post	0.40	.653
		Pre–Follow-up	0.10	.921
		Post–Follow-up	–0.30	.744
Suicidal Ideation	BA	Pre–Post	–5.20	.001
		Pre–Follow-up	–4.60	.001
		Post–Follow-up	0.60	1.00
	Control	Pre–Post	1.80	.214
		Pre–Follow-up	1.65	.237
		Post–Follow-up	–0.15	1.00

Bonferroni-adjusted comparisons (see Table 5) indicate statistically significant improvements in the Behavioral Activation group from pretest to posttest and from pretest to follow-up across all outcome variables, with no significant change between posttest and follow-up, demonstrating maintenance of gains. In contrast, no statistically significant pairwise differences were observed within the control group across any time comparisons.

Discussion

The present study aimed to investigate the effectiveness of Behavioral Activation (BA) therapy on enhancing behavioral activation levels (thereby reducing clinical apathy), hopelessness, and suicidal ideation in adolescents

diagnosed with Major Depressive Disorder in Kermanshah. The results indicated that the Behavioral Activation intervention was significantly effective in reducing all three dependent variables compared to the control group.

The first finding of the study demonstrated that Behavioral Activation had a significant effect increasing the level of behavioral engagement and activation in adolescents with depression. It is essential to note that the instrument used in this study (BADS) primarily measures the frequency of activation and avoidance behaviors; thus, the observed increase in scores signifies an improvement in the individual's behavioral repertoire, which implicitly indicates a substantial reduction in clinical apathy

(amotivation). This result is consistent with previous studies that highlight the inverse relationship between behavioral activation and depressive inertia (Karimpoor Vazifeh Khorani et al., 2025; Weeb et al., 2023; Mannekote Thippaiah et al., 2022; Choubi et al., 2024; Khajehmirza et al., 2020; Dimidjian et al., 2011). Although some of these studies did not directly focus on apathy as a variable, the behavioral components of this therapy (such as increasing activity levels and reducing immobility) have functionally counteracted this construct. Specifically, Khajehmirza et al. (2020) confirmed the effectiveness of BA in increasing intrinsic motivation and self-efficacy, and Choubi et al. (2024) affirmed its effect on improving the psychological dimension of quality of life. In explaining this finding, it can be stated that the fundamental goal of Behavioral Activation is to create change in an individual's emotions through changing their behavior—a principle built upon the core concept that "change in a person's feelings depends on change in their activities" (Dimidjian et al., 2011). Within the therapeutic context of BA, increasing activation scores reflects the process where engaging depressed individuals in activities they avoid causes motivation to gradually convert from extrinsic to intrinsic. This structured process moves the individual out of inertia and restores a sense of personal control, which is the functional opposite of apathy (Anderson & Perone, 2024).

The second major finding of this study indicated that behavioral activation therapy had a significant effect on reducing hopelessness in adolescents with depression. This finding aligns with the results of previous studies (e.g., Alirahmi et al., 2024; Webb et al., 2023) and meta-analyses (Huang et al., 202; Bigham Lalabadi et al., 2022). Furthermore, it is supported by research emphasizing the effectiveness of this treatment on the cognitive components of depression (Burhunduli, 2025; Taghavi et al., 2020; Wolfe et al., 2019). To explain this finding, it is necessary to refer to the theoretical underpinnings of behavioral activation. As Dimidjian et al. (2011) and Alirahmi et al. (2024) state, depression and hopelessness result from reduced exposure to positive environmental reinforcers and the development of avoidance behaviors. Hopelessness in adolescents often stems from a cognitive deadlock and a sense of powerlessness to change their situation. Behavioral activation breaks the avoidance-isolation cycle and replaces it with goal-directed activities, thereby providing opportunities to re-experience rewards (pleasure and mastery). According to Zhu et al. (2023), this behavioral engagement activates brain reward systems, directly counteracting negative mood states. When adolescents realize through action that they are capable of performing activities and altering their environment (i.e., increasing self-efficacy) (Nikmehr et al., 2021), negative and hopeless beliefs about the future (such as "nothing will change") are challenged and modified.

Finally, the third major finding of the present study indicated that behavioral activation intervention had a significant effect on reducing suicidal ideation in adolescents with depression. This finding is consistent with recent clinical evidence, including the study by Kaliush et

al. (2025), which confirmed the efficacy of behavioral activation in reducing suicidality in clinical populations. It also converges with the outcomes reported by Hemanny et al. (2022), Hink et al. (2022), Bedayat and Askary (2020), Ribeiro et al., (2018), and Hopko et al. (2013). In explaining this effect, it can be argued that depression is often characterized by a reduction in activity levels, isolation, and withdrawal from previously pleasurable activities—a state that fosters negative rumination, hopelessness, and ultimately, suicidal thoughts (Bedayat & Askary, 2020). Behavioral activation targets this maladaptive cycle by encouraging adolescents to re-engage in goal-directed and pleasurable activities, thereby improving mood and alleviating depressive symptoms. Although behavioral activation does not directly target cognitive content, it modifies the individual's cognitive style indirectly through behavioral change. As Kanter and Puspitasari (2012) elucidate, by increasing participation in meaningful activities and facilitating the experience of "small successes," this therapy enhances the individual's sense of control and self-efficacy. This behavioral mastery counters the feelings of helplessness that often underlie suicidal ideation. Furthermore, by encouraging social engagement, behavioral activation increases access to social support. This support fosters feelings of worthiness, acceptance, and being understood, all of which play a crucial protective role against suicidal thoughts. Ultimately, as a learning-based approach, behavioral activation helps adolescents break the self-reinforcing cycle of depression and move toward a more active and satisfying life. These positive changes in behavioral-emotional functioning create a positive feedback loop: increased activity alleviates anhedonia, which in turn motivates further engagement in rewarding behaviors, significantly reducing the urge for self-harm.

In conclusion, the findings of the present study definitively demonstrate that Behavioral Activation (BA), by targeting the modification of maladaptive behavioral patterns and enhancing positive environmental reinforcement, is not only effective in alleviating core symptoms of depression (such as apathy) but also exerts a profound therapeutic impact on high-risk constructs like hopelessness and suicidal ideation. These results underscore the critical importance of implementing this short-term, cost-effective, and evidence-based intervention within both clinical and educational settings. Despite its significant findings, this study is limited by a geographically restricted sample, reliance on self-report measures, and relatively short intervention and follow-up periods, which preclude the assessment of long-term effects and the full control of environmental confounders like academic pressure or family status. Therefore, future research should employ larger, geographically diverse samples and longitudinal designs, potentially incorporating neuroimaging or biological markers to elucidate the underlying mechanisms, while also investigating mediating variables such as self-efficacy and social support. Ultimately, given the feasibility and simplicity of BA, integrating this approach into school-based prevention programs and community counseling centers is highly recommended as

an effective strategy to mitigate the prevalence of depression, apathy, and the risk of suicidal ideation among vulnerable adolescents.

In conclusion, the findings of the present study suggest that Behavioral Activation (BA), by targeting the modification of maladaptive behavioral patterns and enhancing positive environmental reinforcement, may be effective in increasing activation levels (thereby reducing clinical apathy) and exerting a therapeutic impact on high-risk constructs like hopelessness and suicidal ideation. These results underscore the potential importance of implementing this short-term and evidence-based intervention within both clinical and educational settings. The study indicates that the structured framework of BA—which encourages re-engagement in goal-directed activities—might facilitate the shift from extrinsic to intrinsic motivation, activate brain reward systems to challenge negative beliefs, and help restore a sense of self-efficacy. Despite these encouraging results, several limitations must be acknowledged. First, the small sample size is a significant constraint, particularly for drawing definitive conclusions about complex and low-frequency variables such as suicidal ideation; this limits the generalizability of the findings. Second, the use of a non-active control group (waitlist) means that the study did not control for the potential effects of therapist attention or the placebo effect. Third, the study is limited by a geographically restricted sample and a reliance on self-report measures. Additionally, the relatively short follow-up period precludes the assessment of long-term stability. Therefore, future research should employ larger, geographically diverse samples and longitudinal designs, preferably incorporating an active control group and biological markers to further elucidate the underlying mechanisms. Ultimately, given the feasibility of BA, integrating this approach into school-based prevention programs is recommended as a promising strategy to mitigate the risk of depression and suicidal ideation among vulnerable adolescents.

Conclusion

Behavioral activation therapy produced statistically significant improvements in hopelessness and suicidal ideation and significant changes in apathy among adolescents with depressive disorder. Importantly, the observed effects were sustained at follow-up. Interaction effect sizes were moderate to large, supporting the clinical relevance of the intervention.

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Disclosure Statement

The authors declare no conflict of interest.

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