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The Effects of Hope Training, Self-Compassion Training, and Their Combination on Academic Procrastination and Academic Hope among Students

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ABSTRACT

The aim of this study was to investigate the effectiveness of hope training and mindful self-compassion training on academic procrastination and academic hope among eighth-grade boys. This quasi-experimental study employed a pretest-posttest design with a control group and was conducted in 2025. Using cluster random sampling, 48 eighth-grade male students were selected from schools in western Tehran and assigned to four groups. Twelve students were assigned to the control group, 12 received hope training, 12 received mindful self-compassion training, and 12 received a combination of the two interventions. Data were collected using both field and library methods. The data collection instruments consisted of two standardized questionnaires: the Procrastination Assessment Scale-Students developed by Solomon and Rothblum (1984) and the Domain-Specific Hope Scale developed by Sympson (1999), including the academic hope subscale. A pretest was initially administered to all 48 participants. Following the therapeutic interventions administered to the experimental groups, a posttest was administered simultaneously to all participants. The findings indicated that hope training and mindful self-compassion training were effective in reducing academic procrastination and enhancing academic hope among eighth-grade boys. Accordingly, families and schools can contribute to improving boys' academic conditions by fostering hope and self-compassion.

Keywords: training, hope, self-compassion, academic procrastination, academic hope, students, boys

1. Introduction

Academic performance during adolescence is influenced not only by cognitive ability and instructional quality but also by motivational, emotional, and self-regulatory processes that determine how students approach academic demands, persist in the face of difficulty, and respond to setbacks. The transition through secondary education is particularly important because students are increasingly expected to plan their activities independently, regulate their study behavior, complete assignments on time, prepare for examinations, and maintain long-term educational goals. Difficulties in these areas can undermine academic functioning even when students possess adequate intellectual ability. Among the psychological variables that have attracted considerable attention in this context are academic procrastination and academic hope. Academic procrastination reflects a maladaptive pattern of unnecessarily delaying academic tasks despite the expectation that such delay may lead to negative consequences, whereas academic hope represents a positive motivational orientation toward educational goals and the perceived capacity to identify and pursue pathways toward their attainment. Because these two constructs concern different but interrelated aspects of academic self-regulation, interventions that simultaneously reduce avoidance and strengthen adaptive goal-directed functioning may be particularly valuable for adolescents.

Academic procrastination is one of the most common self-regulatory difficulties observed among students. It may involve postponing preparation for examinations, delaying completion of assignments, avoiding study-related decisions, or failing to initiate and maintain academic activities despite awareness of their importance. Procrastination should not simply be understood as poor time management; rather, it is associated with deficiencies in self-regulation, motivational control, emotional regulation, and task-related beliefs. Longitudinal evidence indicates that academic procrastination can develop and become stabilized during the early years of secondary education and is meaningfully related to metacognitive self-regulation, self-efficacy, and effort regulation (Ziegler & Opdenakker, 2018). Students who experience difficulty regulating effort or maintaining confidence in their ability to complete challenging academic tasks may be more likely to postpone such tasks, thereby increasing academic stress and weakening subsequent engagement. Over time, repeated procrastination may contribute to a cycle in which delay

produces poorer preparation and greater distress, which in turn increases the likelihood of further avoidance.

The educational consequences of persistent disengagement are not limited to reduced grades or incomplete assignments. Difficulties in maintaining motivation, engagement, and a sense of meaningful educational direction can contribute to broader problems such as school alienation, withdrawal, and early school leaving. Research examining measures intended to prevent school dropout has emphasized the importance of flexible educational responses, meaningful student engagement, and support systems that respond to individual psychosocial needs rather than focusing exclusively on academic performance (Nada et al., 2020). From this perspective, psychological interventions that enhance students' adaptive coping resources and increase their sense of possibility regarding future academic success may represent an important component of preventive educational practice.

One of the most influential positive psychological constructs relevant to educational functioning is hope. Snyder's hope theory conceptualizes hope as a cognitive-motivational system involving two interdependent components: pathways thinking and agency thinking. Pathways thinking refers to an individual's perceived capacity to generate workable routes toward desired goals, whereas agency thinking refers to the motivational energy required to initiate and sustain movement along those routes (Snyder, 2002). Hope therefore differs from passive optimism or a generalized expectation that favorable events will occur. A hopeful individual identifies meaningful goals, generates possible strategies for reaching those goals, and perceives himself or herself as capable of acting persistently in the pursuit of them. In educational settings, this framework is particularly relevant because academic success frequently requires students to define goals, select appropriate strategies, respond flexibly to obstacles, and maintain effort when progress is slow.

Hope theory also provides a practical foundation for intervention. Hope-oriented therapeutic and educational approaches aim to help individuals clarify important goals, divide larger goals into manageable steps, generate multiple routes toward desired outcomes, identify potential obstacles, strengthen agency, and revise pathways when initial strategies fail. Snyder and Taylor argued that hope may function as a common therapeutic factor across intervention approaches because movement toward valued goals is central to adaptive psychological change (Snyder & Taylor, 2000). Applied techniques in hope therapy similarly

emphasize goal clarification, pathway generation, agency enhancement, and the restructuring of discouraging self-statements that interfere with sustained effort (Sutton & Smith, 2021). Experimental applications of hope-based interventions have further demonstrated that structured hope therapy can influence psychological outcomes related to hopelessness and perceived personal control (Winarsunu et al., 2023). These principles suggest that hope training may be particularly appropriate for students who tend to delay academic activities because it provides a framework for transforming vague or overwhelming educational demands into specific goals and achievable action sequences.

Academic hope is the application of these general hope processes to educational goals and challenges. A student with greater academic hope is more likely to believe that desired educational outcomes can be achieved, to generate alternative strategies when difficulties arise, and to sustain effort despite temporary setbacks. Recent evidence has linked academic hope with favorable educational outcomes. Among secondary school students, academic hope has been examined in relation to academic vitality and academic achievement, supporting the relevance of hopeful thinking for successful educational functioning (Abri et al., 2025). Similarly, research on school-based hope training has indicated that interventions targeting hopeful cognition can improve academic motivation, academic hardiness, and academic hope among students (Raeisi, 2025). Future-oriented training has also been used with male secondary school students to strengthen academic hope, psychological well-being, goal orientation, and time perspective, highlighting the close relationship between perceptions of the future and present academic functioning (Norouzi, 2024).

The importance of hope extends beyond direct academic performance. Contemporary research suggests that hope contributes to psychological adaptation, adaptive coping, and well-being in educational contexts. Shan and Xu found that hope, academic thriving, and adaptive coping were meaningfully involved in university students' peace of mind, demonstrating that hope may operate within a broader system of psychological resources that supports adjustment under academic demands (Shan & Xu, 2025). Likewise, longitudinal research examining the transition to college has demonstrated reciprocal relationships between hope, psychosocial resources, and emotional well-being, suggesting that hope both influences and is influenced by the broader process of adaptation to educational transitions (Wong & Cheung, 2024). Hope theory has also been applied

to educational professionals, with Snyder's framework proposed as a useful conceptual resource for understanding how goal pathways and agency may help teachers cope with secondary stress, compassion fatigue, and burnout associated with difficult student experiences (Slater, 2024). Collectively, these findings support the view that hope is not an isolated trait but a modifiable psychological process with implications for academic resilience, coping, emotional adjustment, and persistence.

Although strengthening hope may increase motivation and goal-directed behavior, students also need psychological resources that help them respond adaptively when they fail to meet their goals. Academic procrastination is often accompanied by self-criticism, shame, frustration, worry, and negative self-evaluation. Students who repeatedly delay academic tasks may react to their own behavior with harsh self-judgment, which can intensify emotional distress and make subsequent engagement even more difficult. In this context, self-compassion has emerged as an important construct for understanding adaptive self-regulation. Self-compassion involves responding to personal difficulty, inadequacy, or failure with kindness and understanding rather than harsh criticism, recognizing that imperfection and struggle are part of common human experience, and maintaining balanced mindful awareness of painful thoughts and feelings without becoming excessively identified with them (Neff, 2023). Thus, self-compassion does not imply passivity, indulgence, or a lack of standards; instead, it provides an emotionally supportive basis from which individuals can acknowledge mistakes and pursue corrective action.

The modern self-compassion framework generally includes three interacting dimensions: self-kindness rather than self-judgment, common humanity rather than isolation, and mindfulness rather than overidentification. These components help individuals remain emotionally engaged with difficult experiences without being overwhelmed by them. Clear distinctions have also been made between genuine self-compassion and misconceptions such as self-pity, self-indulgence, or avoidance of responsibility (Harrison, 2022). This distinction is especially important in educational settings because students may assume that being compassionate toward themselves after failure means lowering standards. In contrast, self-compassion can facilitate more adaptive motivation by reducing the threat associated with mistakes and allowing students to evaluate shortcomings without excessive defensiveness or shame.

Mindful Self-Compassion (MSC) provides a structured intervention for cultivating these capacities. The MSC program developed by Germer and Neff integrates mindfulness practices with explicit self-compassion exercises designed to help individuals develop greater self-kindness, awareness of common humanity, and balanced attention to difficult experiences (Germer & Neff, 2019). Through repeated practice, participants learn to recognize moments of distress, respond to themselves supportively, and replace punitive self-criticism with a more constructive motivational stance. These skills may be particularly relevant to academic procrastination because procrastination is frequently maintained not only by poor planning but also by avoidance of uncomfortable emotions associated with difficult, boring, threatening, or evaluative academic tasks. A student who can tolerate these emotions with greater mindful awareness and self-compassion may be less likely to escape from them through delay.

Self-compassion has also been associated with successful adjustment in educational contexts. Pravani and Maroné described self-compassion as a mechanism that can facilitate first-year students' adaptation to university environments, indicating that compassionate self-responding may help students manage the psychological demands of transition and unfamiliar academic challenges (Pravani & Maroné, 2023). Self-compassion may also operate alongside hope rather than independently of it. Research among college students has directly examined self-compassion and hope, suggesting that these constructs may represent complementary positive psychological resources with relevance to students' emotional and academic adjustment (Shireen & Luke, 2023). Whereas hope emphasizes movement toward desired goals through agency and pathways, self-compassion concerns how individuals relate to themselves when movement toward those goals becomes difficult. Their combination may therefore address both motivational and emotional dimensions of adaptive academic functioning.

Mindfulness, hope, and psychosocial resources may also function through interconnected pathways. Lo et al. demonstrated sequential associations among perceived social support, mindfulness, perceived hope, and mental health literacy in university students, indicating that mindfulness and hope can occupy related positions within broader models of psychological adaptation (Lo et al., 2023). Although university students differ developmentally from eighth-grade adolescents, such findings support the theoretical possibility that mindful awareness can strengthen

the psychological conditions under which hopeful and adaptive responses become more available. Mindfulness may reduce automatic reactions to stress, whereas self-compassion can transform the emotional meaning of perceived failure; hope can then provide goal direction, pathways, and motivational energy. Accordingly, integrating these approaches may yield stronger effects than using either intervention independently.

The potential complementary effects of hope training and mindful self-compassion are especially relevant to academic procrastination. From a hope-theory perspective, procrastination may occur when students perceive insufficient pathways toward completing a task or lack agency to pursue those pathways. Hope training can address these deficiencies by clarifying goals, generating alternative routes, strengthening perceived capability, and encouraging persistence. However, motivational strategies alone may be less effective when students respond to difficulty with harsh self-criticism or emotional avoidance. Mindful self-compassion can address this second pathway by reducing maladaptive self-judgment, increasing tolerance of difficult emotions, and enabling students to confront academic challenges without becoming overwhelmed by fear of failure or feelings of inadequacy. Thus, hope training may answer the questions of where the student wants to go and how to get there, while mindful self-compassion may influence how the student treats himself when progress is imperfect.

The same complementarity can be expected for academic hope. Hope-oriented interventions directly teach the cognitive and motivational processes underlying academic goal pursuit, whereas self-compassion may create an emotional climate in which those processes can be sustained. Students inevitably encounter unsuccessful examinations, difficult assignments, comparison with peers, criticism, and occasions when their initial strategies fail. When such experiences are interpreted as evidence of personal inadequacy, students may disengage from educational goals. Self-compassion can help students interpret setbacks as manageable and human experiences rather than as definitive judgments of self-worth. This may preserve the motivational energy needed for renewed goal pursuit and facilitate the generation of new pathways, thereby indirectly supporting academic hope.

This issue may be especially important in early adolescence, when academic demands become more complex while emotional and self-regulatory capacities are still developing. Eighth-grade students face increasing expectations for autonomous learning, examination

preparation, assignment management, and long-term educational decision-making. At the same time, they may be particularly sensitive to failure, social evaluation, and fluctuations in perceived competence. Interventions that cultivate both goal-directed hope and compassionate emotional self-regulation may therefore provide developmentally relevant psychological resources before procrastination becomes an entrenched academic behavior. Although previous research has separately supported hope-based approaches, self-compassion, mindfulness, and future-oriented interventions, comparatively fewer studies have directly evaluated hope training, mindful self-compassion training, and their combined implementation within the same controlled design, particularly among male students in the early years of secondary education.

The theoretical and empirical literature therefore provides a strong basis for evaluating these interventions comparatively. Hope theory offers a structured account of goal-directed cognition and motivation (Snyder, 2002), while contemporary self-compassion theory explains how individuals can respond adaptively to personal difficulty and perceived failure (Neff, 2023). Educational studies indicate that hope is associated with achievement, thriving, coping, adjustment, and emotional well-being (Abri et al., 2025; Shan & Xu, 2025; Wong & Cheung, 2024), while intervention research supports the modifiability of hope and related academic outcomes (Norouzi, 2024; Raeisi, 2025). At the same time, research on mindful self-compassion suggests that compassionate self-regulation may facilitate adjustment and resilience in academic environments (Germer & Neff, 2019; Pravani & Maroné, 2023). Examining the independent and combined effects of these approaches can therefore clarify whether targeting both motivational goal pursuit and compassionate emotion regulation provides additional benefit for students experiencing elevated academic procrastination and low academic hope.

Accordingly, the aim of the present study was to investigate and compare the effects of hope training, mindful self-compassion training, and their combined intervention on academic procrastination and academic hope among eighth-grade male students.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a quasi-experimental pretest–posttest design with three experimental groups and one

control group. The statistical population consisted of eighth-grade male students enrolled in schools in Tehran, Iran, during the 2025 academic year. Eligibility criteria included being a male student in the eighth grade, obtaining an above-average score on academic procrastination, and obtaining a below-average score on academic hope at the initial screening. Students were excluded if they were unwilling to continue participating in the study or if they were absent from more than two intervention sessions. Cluster random sampling was used to select the participants. First, Moallem Boys' School was randomly selected from among boys' schools located in western Tehran. Subsequently, three classes were randomly selected from the five eighth-grade classes at the school. From the students enrolled in these three classes, 70 students were randomly selected and screened using the academic procrastination and academic hope measures. Students whose academic procrastination scores were above the mean and whose academic hope scores were below the mean were considered eligible for participation. Based on these criteria, 48 students were selected and allocated to four groups of 12 participants each: a control group, a hope-training group, a mindful self-compassion training group, and a combined hope and mindful self-compassion training group. The hope-training group participated in eight intervention sessions, the mindful self-compassion group participated in eight sessions, and the combined intervention group received both protocols in a total of 16 sessions. With the cooperation of the school administration, all participants initially attended an introductory meeting in a designated school hall, during which the objectives and procedures of the study were explained. Participants were informed about the voluntary nature of participation, the confidentiality and anonymity of their responses, the attendance requirements, and the withdrawal criteria. The pretest measures of academic procrastination and academic hope were then administered simultaneously to all 48 participants. The experimental groups subsequently received their assigned interventions over approximately three months, whereas the control group received no intervention during this period. After completion of the intervention programs, all participants were again assembled in the same setting, and the academic procrastination and academic hope measures were simultaneously administered as the posttest.

2.2. Instruments

The Procrastination Assessment Scale–Students (PASS) developed by Solomon and Rothblum (1984) was used to assess academic procrastination. The version used in the present study consisted of 27 items and assessed three dimensions of academic procrastination: procrastination in preparing for examinations, comprising eight items; procrastination in completing academic assignments, comprising 11 items; and procrastination in activities associated with end-of-term academic requirements, comprising eight items. Items are rated on a five-point Likert-type scale ranging from 1 (never) to 5 (always), with intermediate response categories representing rarely, sometimes, and most of the time. Items 2, 4, 6, 11, 13, 15, 16, 21, 23, and 25 are reverse-scored. Total scores can range from 27 to 135, with higher scores indicating greater academic procrastination. A score of 81 represents the theoretical midpoint of the scale; scores above 81 indicate relatively high academic procrastination, whereas scores below 81 indicate relatively low academic procrastination. The scale was first used in Iran by Chari and Dehghani in 2008. Evidence for its psychometric adequacy has been reported in Iranian samples. Fouladchang and Alimadad (2009) reported a Cronbach's alpha coefficient of .79 and found significant correlations between individual items and the total scale score at the .01 significance level, supporting the internal consistency and validity of the instrument. Namian and Hossein Chari (2011) reported a Cronbach's alpha coefficient of .73, whereas Dowlati (2012) reported a coefficient of .91. Furthermore, Jokar and Delavarpour (2007) evaluated the construct validity of the instrument using factor analysis and reported satisfactory validity. The 27-item version of the scale was used in the present study.

The Domain-Specific Hope Scale (DSHS) developed by Sympon (1999) was used to assess hope, with particular emphasis on the academic hope subscale. The instrument was developed on the basis of Snyder's conceptualization of hope and his earlier 12-item hope measure and was designed to assess hope across several specific life domains, including social relationships, education, romantic relationships, family life, employment, and leisure activities. Within each domain, respondents rate items on an eight-point Likert-type scale ranging from 1 (definitely false) to 8 (definitely true), with intermediate response options reflecting increasing degrees of perceived truthfulness. Each domain contains eight items, and domain-specific scores are calculated by summing the corresponding eight items, producing scores

ranging from 8 to 64. The academic hope domain assesses students' hopeful cognitions concerning educational and school-related goals. For this domain, scores ranging from 8 to 16 indicate low academic hope, scores from 16 to 36 indicate moderate academic hope, and scores above 36 indicate high academic hope. For the overall measure, higher scores indicate greater domain-specific hope. The DSHS has demonstrated satisfactory psychometric properties, including an overall Cronbach's alpha coefficient of .93 and alpha coefficients ranging from .86 to .93 for its principal subscales. Principal component factor analysis has also supported the proposed six-domain structure of the measure (Ahmadi Tahour Soltani et al., 2010). In the present study, the academic hope subscale was used as the principal outcome measure of educational hope.

2.3. Interventions

The hope-training intervention consisted of eight sessions based on Snyder's hope theory and the hope-training framework derived from Snyder and Taylor (2000). The intervention focused on the core components of hope theory, particularly goal-directed thinking, pathways thinking, and agency thinking. During the first session, group members became acquainted with one another, the objectives and procedures of the intervention were explained, and an introductory discussion of the concept of hope was provided. Students were asked to reflect on what they wished to achieve in life and to prepare a prioritized list of personally meaningful goals. The second session addressed the components and importance of hope, the relationship between hope and positive emotional functioning, characteristics of hopeful individuals, and attention to encouraging life events; homework involved identifying previous failures and analyzing reasons for not achieving desired goals. The third session focused on the concept and causes of hopelessness and strategies for overcoming it, and students reviewed both short-term and long-term goals and recorded decisions related to those goals. The fourth session addressed effective goal setting and the identification of alternative pathways for goal attainment, with students being instructed to formulate meaningful, measurable, and achievable goals. The fifth session emphasized positive thinking, barriers to goal attainment, the role of negative self-talk as an obstacle to goal-directed behavior, and strategies for replacing maladaptive internal dialogue with more constructive cognitions. Students monitored their internal dialogue concerning personal goals and practiced

replacing negative thoughts with positive and goal-facilitating thoughts. The sixth session focused on physical and psychological energy as resources supporting agency and persistence, including attention to nutrition, physical activity, psychological readiness, and the identification of personal weaknesses that might contribute to hopelessness or abandonment of goals. The seventh session emphasized the role of social relationships in maintaining hope, strategies for developing and sustaining supportive relationships, and evaluation of students' interpersonal networks; participants also developed goal diagrams and identified abilities required to attain specific goals. The eighth session consisted of a review and integration of the material covered throughout the program, reinforcement of goal-setting, agency, and pathways thinking, and encouragement to apply these components to personally meaningful academic and life goals.

The mindful self-compassion intervention consisted of eight sessions based on the Mindful Self-Compassion (MSC) program developed by Neff and Germer (2019). The intervention was designed to enhance the three principal components of self-compassion: self-kindness, common humanity, and mindfulness. The initial session introduced the concept of mindful self-compassion, established group expectations, and familiarized participants with the distinction between self-compassion and self-criticism. Students were introduced to basic mindfulness and self-compassion practices and learned to recognize difficult emotions without excessive judgment or avoidance. Subsequent sessions focused on developing mindfulness skills, cultivating a supportive and compassionate internal response to personal difficulties, and understanding that failure, inadequacy, and distress are common aspects of human experience rather than experiences unique to the individual. Participants practiced responding to self-critical thoughts with self-kindness, identifying habitual patterns of self-judgment, and using compassionate self-talk during academic or interpersonal stress. The protocol also incorporated exercises aimed at managing difficult emotions, reducing overidentification with negative thoughts, and developing a balanced awareness of distressing experiences. Later sessions emphasized the application of self-compassion to motivation, academic challenges, perceived failure, and interpersonal relationships, with particular attention to replacing punitive self-motivation with supportive and constructive forms of self-encouragement. Participants were also encouraged to practice mindfulness and self-compassion exercises between

sessions as homework assignments. The final session integrated the skills acquired throughout the program, reviewed strategies for maintaining mindful self-compassion in everyday life, and encouraged participants to continue applying these skills when facing academic difficulties and stressful experiences.

The combined hope and mindful self-compassion intervention integrated the complete hope-training and Mindful Self-Compassion protocols. Participants in this group completed a total of 16 sessions, comprising the eight-session hope-training program based on Snyder's hope theory and the eight-session Mindful Self-Compassion program based on the protocol developed by Neff and Germer (2019). The hope component emphasized identifying meaningful and attainable goals, developing multiple pathways toward goal attainment, strengthening agency and motivation, modifying negative self-talk, mobilizing psychological and physical resources, and using supportive interpersonal relationships to maintain goal-directed behavior. The mindful self-compassion component emphasized mindfulness, self-kindness, recognition of common humanity, adaptive responses to difficult emotions, reduction of self-criticism and overidentification, and the development of compassionate forms of self-motivation. The combined intervention was intended to simultaneously strengthen students' goal-directed motivational resources and their capacity to respond adaptively and compassionately to academic difficulties, setbacks, and perceived failures. The control group did not receive hope training, mindful self-compassion training, or their combination during the intervention period.

2.4. Data analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarize the study variables, and inferential analyses were conducted to examine the effects of the interventions on posttest academic procrastination and academic hope scores while controlling for corresponding pretest scores. Analysis of covariance (ANCOVA) was used as the primary statistical procedure for comparing the experimental groups with the control group. Before conducting the covariance analyses, the assumptions required for parametric analysis were evaluated. The Shapiro–Wilk test was used to assess the normality of the distribution of the study variables. The assumptions of homogeneity of variances and homogeneity of regression slopes were also considered before interpreting

the ANCOVA results. Pretest scores were entered as covariates to statistically control for baseline differences among the four groups, whereas posttest scores were treated as the dependent variables and group membership was entered as the independent variable. Statistical significance was evaluated using the conventional alpha level of .05.

3. Findings and Results

The study included 48 eighth-grade male students who were equally allocated to four groups: the control group, hope-training group, mindful self-compassion training group, and combined hope and mindful self-compassion

training group, with 12 participants in each group. All participants were enrolled in the eighth grade and attended the selected boys' school in western Tehran. The mean age of the participants was 13.62 years ($SD = 0.49$), with an age range of 13 to 14 years. The mean ages of the control, hope-training, mindful self-compassion, and combined intervention groups were 13.58 ($SD = 0.51$), 13.67 ($SD = 0.49$), 13.58 ($SD = 0.51$), and 13.67 ($SD = 0.49$) years, respectively. No statistically significant difference was observed among the four groups in terms of age ($p > .05$), indicating that the groups were comparable with respect to this demographic characteristic at baseline.

Table 1

Descriptive Statistics for Academic Procrastination and Academic Hope by Group and Measurement Occasion

Variable	Group	Pretest, $M \pm SD$	Posttest, $M \pm SD$
Academic procrastination	Control	96.42 ± 7.31	95.58 ± 7.08
Academic procrastination	Hope training	95.83 ± 6.94	78.67 ± 6.21
Academic procrastination	Mindful self-compassion	96.17 ± 7.12	80.25 ± 6.48
Academic procrastination	Combined intervention	96.50 ± 6.76	69.83 ± 5.91
Academic hope	Control	27.58 ± 4.12	28.17 ± 4.26
Academic hope	Hope training	27.83 ± 4.05	42.75 ± 5.11
Academic hope	Mindful self-compassion	28.08 ± 4.23	40.67 ± 4.86
Academic hope	Combined intervention	27.67 ± 3.91	49.58 ± 4.72

As shown in Table 1, the four groups had relatively similar mean scores for both academic procrastination and academic hope at the pretest stage. At posttest, however, substantial differences emerged between the intervention and control groups. The mean academic procrastination score remained relatively unchanged in the control group, decreasing only from 96.42 to 95.58. In contrast, academic procrastination decreased from 95.83 to 78.67 in the hope-training group, from 96.17 to 80.25 in the mindful self-compassion group, and from 96.50 to 69.83 in the combined intervention group. A reverse pattern was observed for academic hope. The control group's mean academic hope score increased only slightly from 27.58 to 28.17, whereas the mean increased from 27.83 to 42.75 in the hope-training group, from 28.08 to 40.67 in the mindful self-compassion group, and from 27.67 to 49.58 in the combined intervention group. These descriptive findings indicate that all three interventions were associated with improvements in the study outcomes, with the greatest changes observed in the

group receiving the combined hope and mindful self-compassion intervention.

Prior to conducting the inferential analyses, the statistical assumptions underlying analysis of covariance were examined. The Shapiro-Wilk test indicated that the distributions of academic procrastination and academic hope scores did not significantly deviate from normality in any of the four groups at either the pretest or posttest stage ($p > .05$). Levene's test was also nonsignificant for academic procrastination, $F(3, 44) = 0.84$, $p = .478$, and academic hope, $F(3, 44) = 0.71$, $p = .552$, supporting the assumption of homogeneity of error variances. In addition, the interaction between group membership and the corresponding pretest scores was nonsignificant for academic procrastination, $F(3, 40) = 1.06$, $p = .377$, and academic hope, $F(3, 40) = 0.92$, $p = .440$, confirming the assumption of homogeneity of regression slopes. Accordingly, the necessary assumptions for conducting covariance analyses were satisfied.

Table 2*Analysis of Covariance for the Effects of Intervention Group on Posttest Academic Procrastination and Academic Hope*

Dependent variable	Source	SS	df	MS	F	p	Partial η^2
Academic procrastination	Pretest	892.36	1	892.36	28.74	< .001	.400
Academic procrastination	Group	4521.78	3	1507.26	48.55	< .001	.772
Academic procrastination	Error	1335.42	43	31.06			
Academic hope	Pretest	417.83	1	417.83	21.68	< .001	.335
Academic hope	Group	3276.94	3	1092.31	56.68	< .001	.798
Academic hope	Error	828.65	43	19.27			

The results of the analysis of covariance presented in Table 2 demonstrated a statistically significant effect of intervention group on posttest academic procrastination after controlling for baseline academic procrastination, $F(3, 43) = 48.55$, $p < .001$, partial $\eta^2 = .772$. Thus, approximately 77.2% of the adjusted variance in posttest academic procrastination was associated with group membership. The effect of the academic procrastination pretest score was also statistically significant, $F(1, 43) = 28.74$, $p < .001$, partial $\eta^2 = .400$. Similarly, a significant group effect was observed for

academic hope after adjustment for pretest academic hope scores, $F(3, 43) = 56.68$, $p < .001$, partial $\eta^2 = .798$, indicating that approximately 79.8% of the adjusted variance in academic hope was associated with the intervention condition. The pretest academic hope score also had a significant covariate effect, $F(1, 43) = 21.68$, $p < .001$, partial $\eta^2 = .335$. These findings demonstrate that the intervention conditions were significantly associated with both reduced academic procrastination and increased academic hope.

Table 3*Bonferroni Post Hoc Pairwise Comparisons of Adjusted Posttest Scores*

Variable	Group comparison	Mean difference	SE	p
Academic procrastination	Control vs. Hope training	16.54	2.31	< .001
Academic procrastination	Control vs. Mindful self-compassion	14.91	2.28	< .001
Academic procrastination	Control vs. Combined intervention	25.37	2.25	< .001
Academic procrastination	Hope training vs. Mindful self-compassion	-1.63	2.22	.999
Academic procrastination	Hope training vs. Combined intervention	8.83	2.19	.001
Academic procrastination	Mindful self-compassion vs. Combined intervention	10.46	2.20	< .001
Academic hope	Control vs. Hope training	-14.28	1.82	< .001
Academic hope	Control vs. Mindful self-compassion	-12.17	1.79	< .001
Academic hope	Control vs. Combined intervention	-21.05	1.76	< .001
Academic hope	Hope training vs. Mindful self-compassion	2.11	1.74	.999
Academic hope	Hope training vs. Combined intervention	-6.77	1.71	.002
Academic hope	Mindful self-compassion vs. Combined intervention	-8.88	1.72	< .001

Bonferroni-adjusted post hoc comparisons indicated that all three intervention groups had significantly lower adjusted academic procrastination scores than the control group (all $p < .001$). The combined intervention group also demonstrated significantly lower academic procrastination than both the hope-training group ($p = .001$) and the mindful self-compassion group ($p < .001$). However, the difference between the hope-training and mindful self-compassion groups was not statistically significant ($p > .05$). A similar pattern was observed for academic hope. All three intervention groups showed significantly higher adjusted academic hope scores than the control group (all $p < .001$). In addition, the combined intervention group had

significantly higher academic hope scores than the hope-training group ($p = .002$) and the mindful self-compassion group ($p < .001$), whereas the difference between the hope-training and mindful self-compassion groups was not statistically significant ($p > .05$). Overall, both hope training and mindful self-compassion training were independently effective in reducing academic procrastination and increasing academic hope, while the combined intervention produced significantly greater improvements than either intervention administered separately.

4. Discussion

The present study investigated the effects of hope training, mindful self-compassion training, and their combined intervention on academic procrastination and academic hope among eighth-grade male students. The findings showed that all three interventions were effective in reducing academic procrastination and increasing academic hope compared with the control condition. In addition, the combined intervention produced greater improvements in both academic procrastination and academic hope than either hope training or mindful self-compassion training alone, whereas the difference between the two single-component interventions was not statistically significant. These findings suggest that both hope-oriented cognitive-motivational training and mindful self-compassion-based emotional self-regulation can independently improve important aspects of students' academic functioning, while integrating the two approaches may provide a broader and more powerful intervention by simultaneously targeting goal-directed motivation and students' responses to academic stress, failure, and self-criticism.

The significant reduction in academic procrastination following hope training is consistent with Snyder's conceptualization of hope as a goal-directed cognitive system consisting of pathways thinking and agency thinking (Snyder, 2002). From this theoretical perspective, students are more likely to initiate and sustain academic behavior when they can identify meaningful goals, perceive multiple routes for achieving those goals, and believe that they possess sufficient motivational energy to continue pursuing them. Academic procrastination often occurs when tasks are perceived as difficult, ambiguous, aversive, or overwhelming. Under such conditions, students may postpone action because they do not have a sufficiently clear pathway for completing the task or because they doubt their ability to sustain effort. Hope training directly addresses these difficulties by helping students clarify objectives, break complex goals into manageable steps, anticipate barriers, generate alternative strategies, and strengthen agency. Therefore, the reduction in procrastination observed in the hope-training group can be interpreted as the behavioral consequence of greater structure, perceived control, and confidence in goal pursuit.

This interpretation is supported by previous work showing that hope can be developed through structured interventions and that such interventions may influence motivational and self-regulatory outcomes. Snyder and

Taylor emphasized that hope may operate as a common factor across therapeutic approaches because adaptive change frequently depends on the ability to formulate goals and sustain movement toward them (Snyder & Taylor, 2000). Practical hope-therapy techniques similarly focus on goal clarification, identifying pathways, strengthening agency, and modifying discouraging internal dialogue (Sutton & Smith, 2021). Empirical intervention findings have also shown that hope therapy can improve hopelessness and perceived personal control, demonstrating that hope-related cognitive processes are modifiable rather than fixed characteristics (Winarsunu et al., 2023). In educational settings, Raeisi reported that hope training was effective in improving academic motivation, academic hardiness, and academic hope among students (Raeisi, 2025). These findings support the present results by suggesting that hope training can influence students' persistence and academic engagement, both of which are conceptually opposed to procrastinatory behavior.

The observed reduction in academic procrastination is also compatible with research emphasizing the importance of self-regulation in the development of procrastination. Ziegler and Opdenakker found that academic procrastination among secondary education students was associated with metacognitive self-regulation, self-efficacy, and effort regulation (Ziegler & Opdenakker, 2018). Hope training may improve these processes indirectly by encouraging students to engage in deliberate planning, anticipate obstacles, evaluate alternative routes, and persist when initial approaches are unsuccessful. These skills can reduce the tendency to avoid or postpone difficult academic activities. Rather than treating an assignment or examination as an undifferentiated source of pressure, students trained in hopeful thinking may begin to perceive it as a sequence of achievable subgoals. This change in cognitive organization can reduce task aversiveness and improve the likelihood of timely initiation and sustained academic effort.

The findings also showed that mindful self-compassion training significantly reduced academic procrastination. This result can be explained through the emotional and self-evaluative dimensions of procrastination. Students do not always delay academic tasks because they lack planning skills; they may also procrastinate because academic demands evoke anxiety, fear of failure, self-doubt, frustration, or anticipated self-criticism. In such circumstances, procrastination may function as a short-term strategy for avoiding uncomfortable internal experiences. Self-compassion may weaken this avoidance cycle by

changing how students respond to perceived inadequacy or difficulty. According to Neff, self-compassion involves self-kindness, recognition of common humanity, and mindful awareness rather than harsh self-judgment, isolation, or overidentification with distress (Neff, 2023). By helping students experience mistakes and difficulties without excessive self-condemnation, self-compassion can reduce the emotional threat associated with academic tasks and thereby facilitate more adaptive engagement.

The Mindful Self-Compassion framework developed by Germer and Neff provides a structured way of cultivating these responses through mindfulness, compassionate self-talk, and a more balanced awareness of difficult experiences (Germer & Neff, 2019). Students who learn to notice academic stress without immediately reacting with avoidance may become better able to begin and continue tasks despite discomfort. Furthermore, replacing punitive self-criticism with a supportive motivational style may reduce the emotional burden associated with imperfect performance. Harrison has emphasized that self-compassion should not be confused with self-indulgence or lack of responsibility; rather, it can provide a constructive basis for responding to mistakes and difficulties (Harrison, 2022). This distinction is particularly relevant to academic procrastination because compassionate self-regulation can help students remain accountable while reducing the shame and anxiety that may otherwise contribute to delay.

The effectiveness of mindful self-compassion in the present study is also aligned with evidence showing that self-compassion facilitates adjustment in educational environments. Pravani and Maroné described self-compassion as an important mechanism supporting students' adaptation to university settings, particularly when they encounter new academic and emotional demands (Pravani & Maroné, 2023). Although their work focused on university students, the underlying mechanism is relevant to adolescents as well. Eighth-grade students face increasing expectations for independent learning, academic planning, and performance, and may be particularly sensitive to mistakes and comparison with peers. Self-compassion can help such students maintain engagement even when they experience temporary failure, thereby reducing the likelihood that avoidance becomes a habitual strategy.

The results further showed that hope training significantly increased academic hope. This finding is directly compatible with hope theory because the intervention specifically targeted the cognitive and motivational components underlying hopeful functioning. Academic hope depends on

students' perceived ability to formulate educational goals, identify workable pathways, and sustain agency in the face of barriers. The intervention sessions emphasized these exact processes by helping students identify meaningful goals, generate alternative routes, recognize obstacles, improve positive self-talk, and mobilize personal and interpersonal resources. Consequently, increased academic hope following the intervention can be understood as an expected outcome of repeated practice in hopeful cognition and goal-directed behavior.

This result is supported by previous educational research. Raeisi found that hope training enhanced academic hope as well as academic motivation and hardiness among students (Raeisi, 2025). Norouzi similarly reported beneficial effects of future perspective training on academic hope, psychological well-being, goal orientation, and time perspective among male secondary school students (Norouzi, 2024). These studies suggest that students' academic hope is responsive to interventions that strengthen future orientation, goal clarity, and perceived control. Furthermore, Abri and colleagues reported meaningful relationships between academic hope, academic vitality, and academic achievement among secondary school students (Abri et al., 2025), indicating that academic hope is not merely an abstract positive belief but is linked to students' broader academic functioning. The present findings extend this literature by demonstrating that structured hope training can produce measurable changes in academic hope among eighth-grade boys with relatively low baseline hope.

Mindful self-compassion training also significantly increased academic hope, despite not being designed primarily as a hope-based intervention. This finding may reflect the close relationship between compassionate emotional regulation and students' ability to maintain positive expectations about their academic future. When students interpret academic setbacks through severe self-criticism, they may conclude that difficulties are evidence of permanent personal inadequacy. Such interpretations can reduce motivation and weaken perceived possibilities for future success. In contrast, self-compassion encourages students to view failure as a manageable and common human experience rather than as a global judgment of self-worth. This more balanced perspective may make it easier to preserve motivation, consider alternative strategies, and remain engaged with educational goals.

Previous findings concerning self-compassion and hope are consistent with this interpretation. Shireen and Luke examined self-compassion and hope among college

students, indicating that these two positive psychological resources are meaningfully related (Shireen & Luke, 2023). Lo and colleagues also identified sequential relationships among perceived social support, mindfulness, perceived hope, and mental health literacy, suggesting that mindfulness-related processes may contribute to psychological conditions that support hope (Lo et al., 2023). Although these studies involved different populations, they support the possibility that greater mindful awareness and compassionate self-regulation can strengthen hopeful thinking indirectly. Students who are less overwhelmed by negative self-evaluation may have greater cognitive flexibility to identify possible pathways and greater emotional energy to continue pursuing their goals.

The finding that the combined intervention was more effective than either hope training or mindful self-compassion training alone is one of the most important results of the present study. A plausible explanation is that the two interventions target distinct but complementary mechanisms. Hope training primarily addresses goal-directed cognition and motivation by strengthening agency and pathways, whereas mindful self-compassion primarily addresses emotional regulation and the individual's relationship with failure, distress, and self-evaluation. Academic procrastination can arise through both mechanisms. A student may delay because he cannot identify an effective route toward completing a task, or because the task evokes unpleasant emotions that he attempts to avoid. Combining hope training with mindful self-compassion therefore addresses both the strategic-motivational and emotional-acceptance dimensions of procrastination.

A similar complementary mechanism may explain the stronger effect of the combined intervention on academic hope. Hopeful goal pursuit requires more than the ability to identify pathways; it also requires persistence when those pathways are blocked. Self-compassion may protect this persistence by reducing the likelihood that temporary failure is interpreted as evidence of personal inadequacy. In this sense, hope provides direction and motivational energy, while self-compassion provides emotional resilience when progress becomes difficult. Such an interpretation is compatible with recent evidence showing that hope functions within broader systems of coping and psychological resources. Shan and Xu found that hope, academic thriving, and adaptive coping were interconnected in supporting students' peace of mind (Shan & Xu, 2025). Wong and Cheung likewise demonstrated reciprocal

relationships among hope, psychosocial resources, and emotional well-being during students' transition to college (Wong & Cheung, 2024). These findings suggest that hope is strengthened when it operates alongside other adaptive psychological resources rather than in isolation.

The stronger performance of the combined intervention may also be understood through the role of psychological flexibility. Hope training encourages students to generate alternative strategies when one route toward a goal is blocked, whereas mindful self-compassion helps them remain emotionally balanced when such blockage occurs. Together, these processes may make students more flexible in responding to academic challenges. Rather than abandoning a goal, becoming self-critical, or postponing action, students may be more likely to acknowledge the difficulty, regulate the associated emotions, and select an alternative pathway. This combined process is particularly relevant during adolescence, when students are still developing stable patterns of self-regulation and may benefit from interventions that integrate cognition, motivation, and emotion.

5. Conclusion

The present findings are also consistent with broader educational perspectives emphasizing the importance of psychological support for maintaining student engagement. Nada and colleagues highlighted the importance of responsive and supportive educational practices in preventing disengagement and early school leaving (Nada et al., 2020). Although the present study did not examine dropout directly, reducing procrastination and increasing academic hope may contribute to stronger engagement and persistence over time. In addition, Slater's application of Snyder's hope theory to educational settings illustrates the broader relevance of pathways and agency processes for coping with stress and maintaining adaptive functioning (Slater, 2024). The present results suggest that these mechanisms may also be usefully cultivated directly among students.

Several limitations should be considered when interpreting the findings. First, the sample was relatively small and consisted only of eighth-grade male students from one school in western Tehran, which limits the generalizability of the findings to female students, other age groups, other educational levels, and students from different cultural or socioeconomic backgrounds. Second, the study used a quasi-experimental design, and although participants

were assigned to intervention conditions after screening, the design does not provide the same degree of control over confounding variables as a fully randomized controlled trial. Third, the outcomes were assessed primarily through self-report questionnaires, which may be influenced by social desirability, response bias, and participants' subjective interpretation of items. Fourth, the study assessed outcomes immediately after the intervention and did not include a follow-up measurement; therefore, the durability of the observed effects cannot be determined. Finally, the combined intervention involved more total sessions than the single-component interventions, making it difficult to determine whether its stronger effects were attributable entirely to the integration of hope and self-compassion content or partly to greater intervention exposure.

Future research should replicate the study with larger and more diverse samples, including female students, students from different grades, and participants from different geographic and socioeconomic contexts. Randomized controlled trials would strengthen causal inference and allow greater control over potential confounding factors. Future studies should also include follow-up assessments several months after the intervention to determine whether improvements in academic procrastination and academic hope are maintained over time. It would also be useful to compare interventions with equal numbers of sessions and equivalent contact time so that the specific additive or synergistic effect of combining hope training and mindful self-compassion can be distinguished from the effect of greater treatment dosage. Researchers could additionally examine mediating variables such as self-efficacy, emotion regulation, academic motivation, perfectionism, fear of failure, psychological flexibility, and effort regulation to clarify the mechanisms through which these interventions influence academic behavior.

In practice, school counselors, educational psychologists, and teachers can consider incorporating structured hope-building and mindful self-compassion activities into school-based psychological and educational programs, particularly for students who demonstrate persistent procrastination, low academic motivation, or reduced confidence in their educational future. Hope-oriented activities may focus on helping students formulate realistic goals, divide large academic tasks into manageable steps, identify multiple strategies for reaching goals, and strengthen persistence when obstacles arise. Mindful self-compassion activities may help students recognize academic stress, respond to failure without excessive self-criticism, and develop a more

supportive internal dialogue. Schools may obtain greater benefit by integrating these approaches rather than implementing them separately, while ensuring that programs are developmentally appropriate, delivered by trained personnel, and adapted to the specific academic and emotional needs of students.

Authors' Contributions

Authors equally contributed to this article.

Declaration

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

Transparency Statement

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Declaration 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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