



Journal Website

Article history:

Received 01 May 2025

Revised 12 August 2025

Accepted 19 August 2025

Published online 01 February 2026

International Journal of Education and Cognitive Sciences

Volume 7, Issue 1, pp 1-11



E-ISSN: 3041-8828

Effectiveness of a Counseling Package Based on the Prevention of Academic Procrastination on Learning Behaviors, Academic Self-Regulation, and Academic Resilience

Kiyana. Karevan Brojerdi¹, Mohammad Mahdi. Shariat Bagheri^{2*}, Keyvan. Salehi³

¹ Ph.D. in Educational Psychology, Department of Clinical-Educational Psychology, CT.C., Islamic Azad University, Tehran, Iran

² Department of Clinical-Educational Psychology, CT.C., Islamic Azad University, Tehran, Iran

³ Associate Professor, Faculty of Psychology and Educational Sciences, University of Tehran, Tehran, Iran

* Corresponding author email address: m.shariatbagheri@iauctb.ac.ir

Article Info

ABSTRACT

Article type:

Original Research

How to cite this article:

Karevan Brojerdi, K., Shariat Bagheri, M. M., & Salehi, K. (2026). Effectiveness of a Counseling Package Based on the Prevention of Academic Procrastination on Learning Behaviors, Academic Self-Regulation, and Academic Resilience. *International Journal of Education and Cognitive Sciences*, 7(1), 1-11.

<https://doi.org/10.61838/kman.ijecs.288>



© 2026 the authors. Published by Iranian Association for Intelligence and Talent Studies, Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Purpose: The purpose of this study was to evaluate the effectiveness of a counseling package based on students' lived experiences for preventing academic procrastination and improving learning behaviors, academic self-regulation, and academic resilience among female lower secondary school students.

Methods and Materials: This quasi-experimental study employed a pretest–posttest–follow-up design with a control group. The sample included 60 female lower secondary school students from Tehran, who were equally assigned to experimental and control groups. The intervention consisted of 12 counseling sessions lasting 60–90 minutes each, focusing on various aspects of behavior, cognition, communication, motivation, and emotion. Data were collected using validated scales for learning behaviors, academic self-regulation, and academic resilience, and were analyzed using SPSS version 26 with descriptive statistics and repeated measures analysis of variance.

Findings: The results of the analysis of variance indicated that the experimental group showed significant improvement compared to the control group ($p < .01$). The Bonferroni post-hoc test revealed increases in learning behaviors and their components, self-regulation and its components, and resilience in the posttest ($p < .01$). Moreover, these effects were sustained at follow-up ($p < .05$).

Conclusion: The counseling package based on students' lived experiences effectively enhanced academic skills and resilience. This approach can be integrated into educational programs to help students overcome procrastination, achieve better academic performance, and improve mental health.

Keywords: academic procrastination, learning behaviors, academic self-regulation, academic resilience

1. Introduction

Academic procrastination has become one of the most prevalent behavioral and psychological barriers in education, undermining learning efficiency and student well-being. It is generally described as the unnecessary delay of academic tasks despite foreseeable negative consequences (Steel et al., 2018). Scholars emphasize that procrastination is not a trivial matter of time management but a multidimensional phenomenon that involves failures in self-regulation, motivational imbalance, and maladaptive coping mechanisms (Arbazi, 2020; Hashemi-Pour et al., 2021). Over the past decade, research has increasingly investigated how procrastination affects students across diverse contexts, educational systems, and cultures, consistently showing its detrimental impact on performance, mental health, and long-term academic achievement (Fentaw et al., 2022; Gharaaghaji et al., 2018).

The persistence of procrastination is particularly striking because it occurs despite the availability of strategies and awareness of its harmful consequences. According to (Choi & Yang, 2024), procrastination is often intensified by maladaptive thinking patterns such as “should-thinking,” which exacerbate self-regulatory failure. This aligns with evidence that cognitive and emotional processes, including anxiety and rumination, strongly mediate procrastination tendencies (Gort et al., 2021; Hashemi-Pour et al., 2021). In fact, procrastination often manifests as a vicious cycle in which avoidance generates stress and emotional dysregulation, which in turn reinforces further avoidance (Arbazi, 2020).

At the same time, not all students are equally vulnerable to procrastination. Individual differences in resilience, grit, and psychological capital appear to explain why some students can resist procrastination more effectively than others. For instance, (Teguh et al., 2024) found that academic resilience and grit significantly reduced procrastination among thesis-writing students, suggesting that strengthening inner capacities can disrupt avoidance cycles. Similarly, (Mohammadpour & Mahmoudian, 2021) demonstrated that psychological capital—which encompasses hope, resilience, and optimism—was a robust predictor of lower procrastination in adolescent populations. Other scholars have highlighted time perception as a novel factor, showing that innovative techniques such as visual representations of time can reduce procrastination by reshaping how students experience deadlines (Jing, 2021).

The COVID-19 pandemic further magnified the relevance of procrastination research. During remote and hybrid learning, students encountered unprecedented self-regulation challenges. (Pelikan et al., 2021) observed that self-regulated learning and motivation became central determinants of perceived competence during online education. Likewise, (Kaliba & Ambrozova, 2021) reported that Czech university students displayed new procrastination patterns during digital instruction, reflecting both structural and psychological adaptations. These findings are consistent with (Noor et al., 2022), who argued that digital platforms, while enhancing flexibility and access, can intensify procrastination risk in the absence of adequate motivational support.

Within this context, resilience has emerged as a critical protective factor against procrastination. (Yang & Wang, 2022) demonstrated that academic resilience and motivational intensity jointly predicted language learners’ academic achievement, showing how resilience supports sustained effort. Similarly, (Aliyev et al., 2021) found that internal factors such as self-efficacy and emotional stability mediated the relationship between external stressors and academic resilience, thereby reducing procrastination. Intervention studies support this relationship: (Xu, 2023) showed that group counseling designed to build resilience significantly improved high school students’ ability to overcome procrastination, while (Arafa, 2024) reported that resilience-oriented strategies were effective in reducing procrastination among primary school pupils after the pandemic.

Research also highlights the strong link between procrastination and academic self-regulation. (Valenzuela et al., 2020) found that students with high self-regulation profiles were less prone to procrastination, as autonomous functioning required consistent regulatory strategies. In a similar vein, (Ragusa et al., 2023) demonstrated that self-regulation reduced procrastination while simultaneously alleviating academic stress and enhancing resilience. Complementing this, (Jafari et al., 2022) revealed that cognitive and metacognitive regulation predicted procrastination tendencies, mediated by goal orientations. Findings such as these reinforce the idea that self-regulation is not only a correlate of procrastination but a central mechanism in addressing it.

Additional predictors of procrastination include perfectionism, social self-efficacy, and achievement emotions. (Nateqian et al., 2022) developed a predictive model showing that perfectionism and achievement

emotions influence procrastination, with social self-efficacy playing a mediating role. Meanwhile, (Maulidia & Usman, 2019) demonstrated that self-efficacy, learning motivation, fear of failure, and parental support significantly determined procrastination among students, underscoring the importance of both internal and external resources. This aligns with (Sukma et al., 2023), who reported that self-regulation and self-efficacy jointly influenced procrastination levels in vocational students.

Beyond individual factors, procrastination is closely associated with emotional and interpersonal dimensions. (Brown et al., 2021) revealed that listening and interpersonal communication skills predicted resilience in occupational therapy students, suggesting that social capacities also help counteract procrastination. Similarly, (Gu et al., 2022) highlighted the relationship between mental health, sustainable learning behaviors, and environmental influences, indicating that psychological well-being supports the maintenance of learning engagement. (Toripa & Huwae, 2023) extended this by showing that resilience moderated procrastination in students who were simultaneously studying and working, providing evidence that resilience enables adaptive functioning in complex life contexts.

The prevalence of procrastination is widespread in both developed and developing contexts. For example, (Fentaw et al., 2022) documented high levels of procrastination in Ethiopian public universities, while (Tadese et al., 2022) demonstrated that procrastination served as a determinant of poor performance in Ethiopian students. In Iran, (Gharaaghaji et al., 2018) found that procrastination was deeply embedded in the lived experiences of secondary school students, shaped by cultural expectations and educational pressures. These findings indicate that procrastination transcends geographical boundaries, though its specific manifestations are influenced by cultural, institutional, and familial factors.

Longitudinal research confirms that procrastination persists over time, often leading to cumulative disadvantages. (Steel et al., 2018) argued that procrastination develops across multiple goal stages, reinforcing itself through temporal motivational dynamics. Such cycles are difficult to break without targeted interventions. Indeed, (Arbazi, 2020) referred to procrastination as a vicious cycle, emphasizing that antecedents and consequences continuously reinforce avoidance behaviors.

The negative consequences of procrastination extend beyond academic performance. According to (Gort et al.,

2021), procrastination worsens sleep quality, increases rumination, and elevates negative affect, while (Hashemi-Pour et al., 2021) showed that emotional schemas and test anxiety jointly predict procrastination, highlighting its close ties with mental health. These findings align with (Fadkhurosi et al., 2023), who noted that post-pandemic procrastination among students often co-occurred with heightened psychological distress.

Given the multifaceted nature of procrastination, effective interventions must address not only time management but also resilience, motivation, and emotional regulation. Studies such as (Xu, 2023) and (Arafa, 2024) provide promising evidence that resilience-based counseling can significantly reduce procrastination. Similarly, (Ragusa et al., 2023) and (Valenzuela et al., 2020) highlight the importance of self-regulation training in breaking procrastination cycles. Innovative approaches, including time visualization (Jing, 2021) and building psychological capital (Mohammadpour & Mahmoudian, 2021), expand the range of strategies available to educators and psychologists.

Overall, the literature demonstrates that procrastination is a dynamic phenomenon influenced by cognitive, emotional, social, and contextual factors (Brown et al., 2021; Gu et al., 2022; Yang & Wang, 2022). Interventions must therefore be multifaceted, combining resilience training, self-regulation enhancement, and motivational restructuring. However, despite this progress, gaps remain in understanding how integrated counseling packages—especially those designed around students' lived experiences—can sustainably prevent procrastination while simultaneously promoting learning behaviors, academic self-regulation, and resilience.

The present study seeks to address this gap by evaluating the effectiveness of a counseling package for female secondary school students, specifically designed to prevent academic procrastination and to enhance learning behaviors, self-regulation, and resilience.

2. Methods and Materials

2.1. Study Design and Participants

The present study, in terms of purpose, is applied research, and in terms of design, it is quasi-experimental with a pretest–posttest–follow-up design including an experimental group and a control group. The statistical population consisted of all female lower secondary school students who were studying in District 5 of Tehran during the 2023–2024 academic year. In this study, convenience sampling was used, and out of 188 students, 60 students were

randomly selected and assigned into two groups: experimental (30 participants) and control (30 participants). All students provided written consent to participate in the study and actively attended the sessions until the end.

2.2. Measures

Learning Behaviors Scale: In this study, the Learning Behaviors Scale was used to measure students' learning behaviors. This questionnaire was developed by McDermott et al. in 2000 for students aged 5 to 17 and consists of 25 items. Items are scored on a three-point Likert scale (always = 2, sometimes = 1, never = 0). The scale has four subscales: competence motivation (items 1–8), attention/persistence (items 9–15), attitude toward learning (items 16–20), and strategy/flexibility (items 21–25). Items 1, 6, 11, 12, 16, 19, 20, 21, and 24 are reverse-scored. The maximum possible score is 50 and the minimum is 0. The scale is completed by teachers or parents (Abedi et al., 2013). This instrument has been used in various countries and samples, and its validity and reliability have been confirmed. For instance, McDermott et al. (1999) standardized the scale on 1,500 American students and reported Cronbach's alpha coefficients of .85 for competence motivation, .87 for attitude toward learning, .85 for attention/persistence, and .79 for flexibility/strategy. Test-retest reliability coefficients were reported as .92 for competence motivation, .91 for attitude toward learning, .92 for attention/persistence, and .93 for flexibility/strategy. Factor analysis confirmed the four-factor structure of the scale. In the study of Abedi et al. (2013), construct validity was reported at an acceptable level, with test-retest reliability ranging from .90 to .93 and internal consistency (Cronbach's alpha) ranging from .72 to .88.

Self-Regulated Learning Strategies Questionnaire: To measure academic self-regulation, the Self-Regulated Learning Strategies Questionnaire developed by Pintrich and De Groot (1990) was used. This questionnaire consists of 47 items in two sections: self-regulated learning strategies and motivational beliefs. The self-regulated learning strategies subscale includes 22 items that measure three aspects: cognitive strategies, metacognitive strategies, and resource management. Cognitive strategies (13 items) include: rehearsal (items 29, 37, 44), elaboration (item 34), summarization (items 31, 45), organization (items 26, 27, 39, 42, 47), and comprehension (items 32, 33). Metacognitive and resource management strategies (9 items) include: planning (items 38, 46), monitoring and controlling

(items 28, 35, 41, 43), effort regulation and persistence (items 30, 36), and regulation activities (item 40). The motivational beliefs section includes 25 items measuring self-efficacy, goal orientation, intrinsic value, and test anxiety. Self-efficacy includes items 2, 6, 9, 10, 12, 14, 19, 21, and 22; goal orientation includes items 1, 4, 11, 16, and 24; intrinsic value includes items 5, 8, 17, and 20; and test anxiety includes items 3, 7, 13, 15, 18, 23, and 25. Items are rated on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Pintrich and De Groot (1990) reported Cronbach's alpha coefficients for motivational beliefs factors: .89 for self-efficacy, .87 for intrinsic value, and .75 for test anxiety. For self-regulated learning strategies, reliability coefficients were .83 for cognitive strategies and .74 for self-regulation. Hosseini-Nasab and Ramesheh (2000) examined construct validity through factor analysis and reported Cronbach's alpha coefficients of .68 for self-efficacy, .41 for intrinsic value, .77 for test anxiety, .64 for cognitive strategies, and .68 for metacognitive strategies. Alborzi and Samani (1999) examined reliability through test-retest and obtained a reliability coefficient of .76.

Academic Resilience Questionnaire: To measure academic resilience, the Academic Resilience Questionnaire developed by Samuels (2004) was used. This questionnaire contains 29 items scored on a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1). The total score ranges from 29 to 145, with higher scores indicating greater academic resilience. In Iran, the questionnaire was translated and validated by Soltani-Nejad, Asiabi, Adhami, and Tavanai-Yousefian (2014), who reported Cronbach's alpha coefficients ranging from .63 to .77 in a student sample (Soltani-Nejad et al., 2014). In another study by Bahrami, Amiri, and Abdollahi (2017), Cronbach's alpha coefficients ranging from .65 to .75 were obtained.

2.3. Intervention

The intervention protocol for the counseling package to prevent academic procrastination was designed and validated by the researcher and implemented over 12 structured sessions lasting 60–90 minutes each. The sessions were organized around multiple dimensions—behavioral, cognitive, communicative, motivational, and emotional—with practical exercises and reflective assignments to strengthen learning behaviors, self-regulation, and resilience. The first session introduced participants to the program, its objectives, and the concept of academic

procrastination, followed by reflective writing on personal procrastination experiences. The behavioral sessions (Sessions 2–3) focused on regulating sleep and leisure activities, planning time, and addressing the negative impact of excessive technology use, with tasks such as creating structured schedules and monitoring daily digital use. Cognitive sessions (Sessions 4–5) emphasized self-testing, improving concentration, reshaping attitudes toward learning, and incorporating short daily meditation and self-reflection routines. Communicative sessions (Sessions 6–7) strengthened effective interaction with peers, teachers, and family, encouraging active participation in academic discussions and school-related activities. Motivational sessions (Sessions 8–9) targeted goal-setting, self-efficacy beliefs, internal motivation, and reflection on norms, values, and past successes and failures, requiring participants to set actionable short- and long-term goals. The emotional session (Session 10) trained students in stress management and coping with academic anxiety, including journaling about emotions and stress responses. Session 11 was a practical workshop where participants applied learned strategies

through individual or group projects, while the final session (Session 12) consolidated the entire program, reviewed key insights, evaluated progress, and encouraged students to develop a personal handbook for future growth and sustained skill development.

2.4. Data Analysis

In this study, SPSS version 26 was used to analyze the quantitative data. Statistical methods included descriptive statistics (mean and standard deviation) as indicators of central tendency and dispersion, and inferential statistics using repeated measures analysis of variance.

3. Findings and Results

In this section, data regarding the mean and standard deviation of participants' scores on the variables of learning behaviors, self-regulated learning strategies, and academic resilience in the experimental and control groups are presented.

Table 1

Descriptive Analysis of Variables

Variables	Group	Pretest M (SD)	Posttest M (SD)	One-Month Follow-Up M (SD)
Competence Motivation	Experimental	15.31 (3.61)	19.94 (3.69)	20.05 (3.73)
	Control	14.94 (3.55)	14.81 (3.50)	14.90 (3.59)
Attention/Persistence	Experimental	12.22 (2.19)	15.93 (2.24)	15.89 (2.20)
	Control	12.77 (2.27)	12.70 (2.30)	12.79 (2.55)
Attitude Toward Learning	Experimental	8.24 (2.14)	11.34 (2.28)	11.31 (2.36)
	Control	8.61 (2.17)	8.70 (2.01)	8.75 (2.09)
Strategy/Flexibility	Experimental	7.92 (2.36)	10.40 (2.55)	10.51 (2.40)
	Control	8.16 (3.03)	8.03 (3.17)	8.14 (3.20)
Total Learning Behaviors	Experimental	43.69 (10.71)	57.61 (10.89)	57.76 (10.90)
	Control	44.18 (11.92)	44.14 (11.44)	44.58 (11.50)
Cognitive Strategies	Experimental	24.59 (5.51)	30.04 (5.57)	30.20 (5.53)
	Control	25.17 (5.55)	25.31 (5.77)	25.15 (5.70)
Metacognitive Strategies	Experimental	13.33 (3.37)	17.47 (3.49)	17.40 (3.40)
	Control	12.99 (3.19)	12.90 (3.41)	12.92 (3.51)
Resource Management	Experimental	10.42 (2.91)	13.70 (2.98)	13.73 (3.04)
	Control	10.85 (2.88)	10.88 (2.90)	10.73 (2.92)
Total Self-Regulated Learning Strategies	Experimental	48.34 (11.52)	61.21 (11.75)	61.33 (11.65)
	Control	49.01 (10.61)	49.09 (10.65)	48.80 (10.71)
Academic Resilience	Experimental	61.17 (6.44)	69.83 (6.51)	69.91 (6.50)
	Control	59.13 (6.71)	59.51 (6.92)	59.46 (6.80)

As presented in Table 1, the means and standard deviations of participants' scores in the research variables of learning behaviors, self-regulated learning strategies, and academic resilience are shown. As observed, participants in the pretest, prior to the implementation of the educational program, had relatively low scores in learning behaviors,

self-regulated learning strategies, and academic resilience. According to the above table, the mean scores for learning behaviors, self-regulated learning strategies, and academic resilience increased. This indicates that the implementation of the structured educational program produced observable changes in the dependent variables. Furthermore, as

observed, there was no noticeable change between the posttest and follow-up scores in the experimental group, suggesting that the effects of the intervention were stable over time. In the following section, the results of the inferential analyses are presented.

Before conducting analysis of variance, the assumptions of the test were examined. Based on the significance levels of the Shapiro–Wilk test ($p > .05$), the assumption of normality was confirmed. Therefore, given the high probability of normal distribution (greater than 95%), parametric tests were used. For testing the homogeneity of variances assumption, Levene’s test was employed, which indicated that there were no significant differences in

variance between the experimental and control groups for any variable ($p > .05$). Finally, considering the non-significant interaction between group and pretest scores on the variables of learning behaviors, self-regulated learning strategies, and academic resilience ($p > .05$), the assumption of homogeneity of interactive effects was satisfied. Hence, repeated measures analysis of variance was conducted to test the study’s hypotheses. For this analysis, posttest scores were considered dependent variables, group membership (with three levels) was the independent variable, and pretest scores were entered as covariates. It is worth noting that since Mauchly’s test was significant ($p < .05$), no correction for degrees of freedom was applied in the analysis.

Table 2

Mixed Analysis of Variance with Repeated Measures Across Pretest, Posttest, and Follow-Up

Variable	Source of Variance	SS	df	MS	F	Sig	Eta ²	Power
Cognitive Strategies	Time	31521.421	29	1086.945	156.302	.000	.932	1.000
	Group	983.921	2	350.147	8.942	.006	.382	1.000
	Error	2390.327	58	41.212				1.000
Metacognitive Strategies	Time	18553.399	29	639.772	140.592	.000	.900	1.000
	Group	700.294	2	350.147	8.009	.007	.340	1.000
	Error	2111.924	58	36.412				1.000
Resource Management	Time	14592.800	29	503.200	137.944	.000	.820	1.000
	Group	593.592	2	296.796	7.873	.008	.302	1.000
	Error	1663.825	58	28.686				1.000
Total Self-Regulated Learning	Time	64724.672	29	2231.781	154.193	.000	.945	1.000
	Group	4328.774	2	664.387	9.110	.005	.409	1.000
	Error	8958.310	58	154.453				1.000
Competence Motivation	Time	24025.866	29	828.468	181.523	.000	.880	1.000
	Group	592.395	2	296.197	12.592	.003	.415	1.000
	Error	1052.344	58	18.143				1.000
Attention/Persistence	Time	25943.901	29	894.617	190.633	.000	.892	1.000
	Group	655.403	2	327.701	13.952	.002	.423	1.000
	Error	1210.400	58	20.868				1.000
Attitude Toward Learning	Time	25357.889	29	874.408	188.723	.000	.890	1.000
	Group	630.555	2	315.277	14.320	.000	.440	1.000
	Error	1156.330	58	19.930				1.000
Strategy/Flexibility	Time	24333.700	29	839.093	184.600	.000	.886	1.000
	Group	606.933	2	303.466	14.024	.001	.432	1.000
	Error	1193.600	58	20.579				1.000
Total Learning Behaviors	Time	85344.338	29	2942.908	199.302	.000	.901	1.000
	Group	2006.392	2	1001.696	16.692	.001	.473	1.000
	Error	4920.385	58	84.834				1.000
Academic Resilience	Time	40492.879	29	1396.306	199.909	.000	.993	1.000
	Group	1424.753	2	712.376	10.983	.002	.449	1.000
	Error	2583.093	58	44.530				1.000

Since the calculated F values for both between-group effects (group membership) and within-group effects (time) were significant at the 99% confidence level ($p < .01$), it can be concluded that there was a significant difference between the experimental and control groups following the intervention. The intervention significantly affected self-

regulated learning strategies and their dimensions, and mean scores changed significantly over time. Similarly, the intervention had a significant impact on learning behaviors and their dimensions, with mean scores of participants showing significant changes across time. Moreover, the intervention significantly improved academic resilience, and

participants' mean scores demonstrated significant changes across measurement points.

Table 3

Results of Mean Comparisons Based on the Bonferroni Post Hoc Test

Variable	Group	Comparison	Mean Difference	Std. Error
Cognitive Strategies	Experimental	Pretest	5.49*	5.61
		Posttest	–	0.16
	Control	Pretest	0.23	0.03
		Posttest	–	0.20
Metacognitive Strategies	Experimental	Pretest	4.25*	4.16*
		Posttest	–	0.09
	Control	Pretest	0.08	0.06
		Posttest	–	0.03
Resource Management	Experimental	Pretest	3.25*	3.30*
		Posttest	–	0.05
	Control	Pretest	3.30*	3.35*
		Posttest	–	0.05
Total Self-Regulated Learning Strategies	Experimental	Pretest	12.88*	12.93*
		Posttest	–	0.15
	Control	Pretest	0.40	0.29
		Posttest	–	0.11
Competence Motivation	Experimental	Pretest	4.32*	4.71*
		Posttest	–	0.39
	Control	Pretest	0.37	0.40
		Posttest	–	0.26
Attention/Persistence	Experimental	Pretest	3.61*	3.80*
		Posttest	–	0.19
	Control	Pretest	0.33	0.42
		Posttest	–	0.11
Attitude Toward Learning	Experimental	Pretest	3.30*	3.23*
		Posttest	–	0.07
	Control	Pretest	0.10	0.15
		Posttest	–	0.05
Strategy/Flexibility	Experimental	Pretest	2.85*	2.96*
		Posttest	–	0.11
	Control	Pretest	0.13	0.18
		Posttest	–	0.05
Total Learning Behaviors	Experimental	Pretest	14.30*	14.51*
		Posttest	–	0.21
	Control	Pretest	0.07	0.47
		Posttest	–	0.40
Academic Resilience	Experimental	Pretest	8.52*	8.63*
		Posttest	–	0.11
	Control	Pretest	0.45	0.36
		Posttest	–	0.09

*p < 0.01

The results in the above table indicate that the scores of self-regulated learning strategies and their dimensions in the experimental group at the posttest stage were significantly higher than those of the control group. In other words, the structured intervention package had a significant effect on self-regulated learning strategies and their dimensions ($p < 0.01$). Furthermore, the results indicate that the scores of all dimensions of self-regulated learning strategies in the

follow-up stage did not differ significantly from the posttest scores in the experimental group ($p > 0.05$). Therefore, it can be concluded that the intervention's effect on self-regulated learning strategies and their dimensions demonstrated good stability.

Similarly, the results show that the scores of learning behaviors and their dimensions in the experimental group at the posttest stage were significantly higher than those of the

control group. In other words, the structured package had a significant effect on learning behaviors and their dimensions ($p < 0.01$). Moreover, the results indicate that the scores of all dimensions of learning behaviors in the follow-up stage did not differ significantly from the posttest scores in the experimental group ($p > 0.05$). Thus, it can be concluded that the intervention's effect on learning behaviors and their dimensions was stably maintained.

Finally, the results demonstrate that the scores of academic resilience in the experimental group at the posttest stage were significantly higher than those of the control group. In other words, the structured package had a significant effect on academic resilience ($p < 0.01$). Furthermore, the results indicate that the scores of academic resilience in the follow-up stage did not differ significantly from the posttest scores in the experimental group ($p > 0.05$). Therefore, it can be concluded that the intervention's effect on academic resilience was also stable.

4. Discussion and Conclusion

The results of this study revealed that the counseling package developed to prevent academic procrastination significantly improved learning behaviors, self-regulated learning strategies, and academic resilience among secondary school students. These findings are noteworthy because they confirm that procrastination is not simply an issue of poor time management but rather a complex behavioral and psychological pattern that requires systematic intervention. The improvements observed in competence motivation, persistence, attitudes toward learning, and resilience demonstrate that a structured counseling approach can effectively alter maladaptive academic patterns that have long-term detrimental consequences (Steel et al., 2018).

The results provide support for theoretical perspectives that conceptualize procrastination as a self-reinforcing cycle of delay, stress, and avoidance (Arbazi, 2020). By addressing both motivational and regulatory processes, the intervention was able to interrupt this cycle and generate stable improvements, as demonstrated in the follow-up results. These findings are in line with prior research showing that academic procrastination is influenced by cognitive, emotional, and social dimensions, and that breaking this cycle requires multidimensional strategies (Fentaw et al., 2022; Gharaaghaji et al., 2018).

The study confirmed that self-regulated learning strategies are central to overcoming procrastination.

Improvements in cognitive and metacognitive strategies, resource management, and persistence support the conclusion that self-regulation is one of the strongest predictors of academic functioning (Valenzuela et al., 2020). The importance of self-regulation has been documented in multiple contexts. For example, (Ragusa et al., 2023) found that self-regulation reduced procrastination and alleviated stress, while (Jafari et al., 2022) reported that both cognitive and metacognitive regulation reduced procrastination tendencies through their relationship with goal orientation. The present findings are aligned with these studies, as counseling sessions emphasized planning, monitoring, and resource management, which resulted in measurable improvements.

Academic resilience also emerged as a critical outcome of the intervention. Students who received the counseling package showed significant improvements in resilience, which were maintained during the follow-up period. These results confirm that resilience is an important buffer against procrastination (Yang & Wang, 2022). (Aliyev et al., 2021) highlighted that internal factors such as emotional stability mediate the relationship between stressors and resilience, reducing the risk of procrastination. Similarly, (Toripa & Huwae, 2023) showed that resilience moderated procrastination among students who were balancing academic and work responsibilities. The present findings echo these insights by showing that building resilience directly contributes to preventing procrastination.

The COVID-19 pandemic highlighted the urgency of developing effective interventions for procrastination. During the pandemic, students were forced to adapt to digital and hybrid modes of education that required high levels of self-regulation. (Pelikan et al., 2021) reported that motivation and self-regulation determined competence perception in remote learning. (Kaliba & Ambrozova, 2021) also observed that Czech university students experienced unique procrastination patterns under online instruction. Furthermore, (Noor et al., 2022) showed that digital platforms could both enhance and undermine student motivation depending on the quality of self-regulation. The present study's findings resonate with this literature, showing that resilience-based counseling can offset procrastination risks in environments where students have more autonomy and fewer external structures.

The significant improvements in motivation and persistence reflect the role of psychological and emotional factors in procrastination. (Nateqian et al., 2022) developed a predictive model that linked perfectionism and

achievement emotions to procrastination, mediated by self-efficacy. (Hashemi-Pour et al., 2021) similarly demonstrated that emotional schemas and test anxiety are significant predictors of procrastination. In this study, counseling sessions that addressed emotion regulation contributed to the reduction of avoidance behaviors, consistent with these findings.

The findings also align with research emphasizing the influence of interpersonal and relational factors. (Brown et al., 2021) showed that interpersonal communication skills and listening abilities predicted resilience in occupational therapy students, while (Gu et al., 2022) found that mental health and sustainable learning behaviors were critical to educational success. Improvements observed in resilience and motivation in the present study suggest that structured counseling sessions that include interpersonal dialogue and peer interaction may also strengthen these relational factors, thereby contributing to reduced procrastination.

Contextual and cultural factors should also be considered in interpreting the results. (Gharaaghaji et al., 2018) explored the lived experiences of Iranian students, noting how cultural expectations and structural pressures foster procrastination. (Maulidia & Usman, 2019) emphasized the importance of self-efficacy, parental support, and fear of failure in predicting procrastination. (Sukma et al., 2023) further demonstrated that self-regulation and self-efficacy predicted procrastination levels among vocational students. The current study adds to this body of work by showing that resilience-focused counseling can mitigate these contextual pressures and foster adaptive learning behaviors.

The results also highlight the emotional and health consequences of procrastination. (Gort et al., 2021) found that procrastination worsened sleep quality and rumination, creating reciprocal effects with negative affect. The sustained improvements seen in the follow-up stage suggest that addressing procrastination can have broader benefits for students' emotional and physiological well-being. (Fadkhurosi et al., 2023) also noted that procrastination increased among students during the pandemic and often co-occurred with psychological distress, which supports the significance of interventions like the one tested in this study.

Importantly, the present findings converge with theoretical and empirical evidence suggesting that procrastination has cumulative negative effects on academic achievement. (Tadese et al., 2022) identified procrastination as a determinant of poor performance among Ethiopian students, while (Fentaw et al., 2022) found that procrastination was widespread in public universities. By

showing that procrastination can be effectively addressed at the secondary level, the current research offers preventive implications for later academic achievement.

The results also lend support to innovative approaches that address procrastination through psychological capital and time management. (Mohammadpour & Mahmoudian, 2021) showed that psychological capital, including hope and optimism, predicted lower procrastination, while (Jing, 2021) proposed that visual representations of time could reduce procrastination by altering temporal perceptions. The counseling package in this study incorporated elements of motivational restructuring, which aligns with these approaches and suggests that diverse strategies can be integrated to maximize effectiveness.

Finally, the results confirm that procrastination is best understood as a multidimensional phenomenon with cognitive, emotional, social, and contextual determinants (Gu et al., 2022; Ragusa et al., 2023; Yang & Wang, 2022). Interventions must therefore be equally multidimensional, targeting self-regulation, resilience, and motivation simultaneously. By incorporating these components, the counseling package demonstrated sustained effects, offering a model that other educators and practitioners can adopt.

Despite the positive outcomes, this study has several limitations. The sample was restricted to female secondary school students in a single district, which may limit the generalizability of results to other populations. The intervention period was relatively short, and although follow-up results showed durability, longer-term effects remain uncertain. The reliance on self-report questionnaires may also introduce bias, as responses could be influenced by social desirability or subjective interpretation. Additionally, contextual factors such as family support, teacher practices, or peer influences were not controlled, which could have affected the results.

Future studies should include more diverse samples, incorporating male students, university populations, and cross-cultural groups to test the universality of findings. Longitudinal research is necessary to examine whether intervention effects persist over longer periods, such as an academic year or beyond. Comparing the effectiveness of different interventions—such as resilience training, self-regulation workshops, or digital learning tools—would clarify which approaches are most beneficial for different student groups. Including behavioral and objective measures, such as task completion data or digital learning logs, alongside self-reports would also strengthen validity.

The findings of this study offer several practical implications. School counselors and educators should integrate resilience-building and self-regulation training into curricula to reduce procrastination and improve learning outcomes. Teachers can reinforce counseling strategies by incorporating goal-setting, self-monitoring, and reflective practices into classroom instruction. Policymakers should prioritize the development and implementation of evidence-based intervention programs that address procrastination as part of broader educational reforms. By equipping students with the skills to regulate behavior, build resilience, and manage tasks effectively, schools can foster both academic achievement and long-term psychological well-being.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

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

Transparency Statement

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

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

References

- Aliyev, R., Akbaş, U., & Özbay, Y. (2021). Mediating Role of Internal Factors in Predicting Academic Resilience. *International Journal of School & Educational Psychology*, 2(5), 1-16. <https://doi.org/10.1080/21683603.2021.1904068>
- Arafa, S. (2024). Overcoming Academic Procrastination: The Effectiveness of Psychological Resilience in Primary School Pupils Post COVID-19. *International Journal of Education and Practice*, 12(3), 996-1011. <https://doi.org/10.18488/61.v12i3.3818>
- Arbazi, M. (2020). The vicious cycle of procrastination: A review of antecedents and consequences of academic procrastination. *School Counseling Education Growth*, 56, 40-42. <https://www.tandfonline.com>
- Brown, T., Yu, M. L., & Etherington, J. (2021). Listening and interpersonal communication skills as predictors of resilience in occupational therapy students: A cross-sectional study. *British Journal of Occupational Therapy*, 84(1), 42-53. <https://doi.org/10.1177/0308022620908503>
- Choi, J. A., & Yang, J. Y. (2024). The intrapsychic process of academic procrastination: How should-thinking aggravates self-regulatory failure. *Learning and Individual Differences*, 109, 102397. <https://doi.org/10.1016/j.lindif.2023.102397>
- Fadkhurosi, A., Ramadhan, M., & Mashurin, M. (2023). Academic Procrastination Of Students Post Pandemic Covid-19. *BIMBINGAN DAN KONSELING BANYUWANGI*, 2(1). <https://ejournal.unibabwi.ac.id>
- Fentaw, Y., Moges, B. T., & Ismail, M. (2022). Academic Procrastination Behavior among Public University Students. *Education Research International*, 5, 1-8. <https://doi.org/10.1155/2022/1277866>
- Gharaaghaji, S., Vahidi, S., Fathi Azar, A., & Adib, Y. (2018). Examining lived experiences of academic procrastination in secondary school students. *Educational Sciences*, 25(1), 127-144. <https://education.scu.ac.ir>
- Gort, C., Marcusson-Clavertz, D., & Kuehner, C. (2021). Procrastination, Affective State, Rumination, and Sleep Quality: Investigating Reciprocal Effects with Ambulatory Assessment. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 39(1), 58-85. <https://doi.org/10.1007/s10942-020-00353-4>
- Gu, Z., Li, P., Zhang, A., Xu, X., & Gu, F. (2022). The Role of Mental Health and Sustainable Learning Behavior of Students in Education Sector Influences Sustainable Environment. *Frontiers in psychology*, 13, 822751. <https://doi.org/10.3389/fpsyg.2022.822751>
- Hashemi-Pour, H., Karamati, H., Kavousian, J., & Arabzadeh, M. (2021). Structural model predicting academic procrastination based on emotional schemas with the mediating role of test anxiety. *New Psychological Research*, 63, 12-26. <https://psychologyj.tabrizu.ac.ir>
- Jafari, L., Bigdeli, H., & Khoramian, F. (2022). The relationship between self-regulation (cognitive and metacognitive) and academic procrastination with goal orientation in students of Islamic Azad University. *Cognitive Analytical Psychology*, 13(51), 15-32. <https://jbrms.medilam.ac.ir>
- Jing, G. (2021). *Designing for the Lived Experience of Time: Visually Representing Time as a Means for Students to Disincentivize Procrastination* <https://www.researchgate.net>
- Kaliba, M., & Ambrozova, P. (2021). What do university students do in online teaching? reflections on current forms of academic procrastination, experience from the CZECH republic. 15th International Technology, Education and Development Conference,

- Maulidia, J., & Usman, O. (2019). Effect of Self-Efficacy, Learning Motivation, Fear of Failure and Parent's Social Support towards Academic Procrastination. Available at SSRN, SSRN.
- Mohammadpour, K., & Mahmoudian, B. (2021). Predicting academic procrastination based on the psychological capital of tenth-grade students in Babol County. *Applied Research in Management and Humanities*, 2(3), 58-66. <https://www.tandfonline.com>
- Nateqian, A., Bagherzadeh Golmakani, Z., Najat, H., & Samari, A. (2022). A study on developing a predictive model of academic procrastination based on social self-efficacy and perfectionism: The mediating role of achievement emotions. *Psychological Sciences*, 21(112), 835-845. <https://doi.org/10.52547/JPS.21.112.835>
- Noor, U., Younas, M., Saleh Aldayel, H., Menhas, R., & Qingyu, X. (2022). Learning behavior, digital platforms for learning and its impact on university student's motivations and knowledge development. *Frontiers in psychology*, 13, 933974. <https://doi.org/10.3389/fpsyg.2022.933974>
- Pelikan, E. R., Lüftenegger, M., Holzer, J., & et al. (2021). Learning during COVID-19: the role of self-regulated learning, motivation, and procrastination for perceived competence. *Zeitschrift für Erziehungswiss*, 24, 393-418. <https://doi.org/10.1007/s11618-021-01002-x>
- Ragusa, A., González-Bernal, J., Trigueros, R., Caggiano, V., Navarro, N., Minguez-Minguez, L. A., Obregón, A. I., & Fernandez-Ortega, C. (2023). Effects of academic self-regulation on procrastination, academic stress and anxiety, resilience and academic performance in a sample of Spanish secondary school students. *Frontiers in psychology*, 14, 1073529. <https://doi.org/10.3389/fpsyg.2023.1073529>
- Steel, P., Svartdal, F., Thundiyil, T., & Brothen, T. (2018). Examining procrastination across multiple goal stages: a longitudinal study of temporal motivation theory. *Frontiers in psychology*, 9, 327. <https://doi.org/10.3389/fpsyg.2018.00327>
- Sukma, N., Fauzi, A., & Mardi. (2023). Analysis Of Academic Procrastination (An Overview Through Self-Regulation And Self-Efficacy) In Accounting Students At Vocational High Schools. *Journal of Humanities, Social Sciences and Business*, 2(2), 465-474. <https://doi.org/10.55047/jhssb.v2i2.550>
- Tadese, M., Yeshaneh, A., & Mulu, G. B. (2022). Determinants of good academic performance among university students in Ethiopia: a cross-sectional study. *BMC Medical Education*, 22, 395. <https://doi.org/10.1186/s12909-022-03461-0>
- Teguh, Y., Indrawati, K. D. N., Syukriah, & Dwi. (2024). Students' Academic Procrastination in Writing a Thesis Reviewed from Academic Resilience and Grit.
- Toripa, G. V., & Huwae. (2023). Academic Resilience and Procrastination in Students Who Study While Working. *BISMA The Journal of Counseling*, 7(1). <https://ejournal.undiksha.ac.id/index.php/bisma/article/view/59584>
- Valenzuela, R., Codina, N., Castillo, I., & Pestana, J. V. (2020). Young University Students' Academic Self-Regulation Profiles and Their Associated Procrastination: Autonomous Functioning Requires Self-Regulated Operations. *Frontiers in psychology*, 11, 354. <https://doi.org/10.3389/fpsyg.2020.00354>
- Xu, B. (2023). Improvement of Academic Procrastination among High School Students through Psychological Resilience Group Counseling. *Journal of Education and Educational Research*, 4(1), 101-103. <https://doi.org/10.54097/jeer.v4i1.10211>
- Yang, S., & Wang, W. (2022). The Role of Academic Resilience, Motivational Intensity and Their Relationship in EFL Learners' Academic Achievement. *Frontiers in psychology*, 12, 823537. <https://doi.org/10.3389/fpsyg.2021.823537>