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Effects of a Brief Online Psychoeducation Program on Academic Motivation and Procrastination*

Kısa Süreli Çevrimiçi Psiko-Eğitim Programının Akademik Motivasyon ve Akademik Erteleme Üzerindeki Etkisi

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Abstract: Academic motivation and academic procrastination are two important factors associated with students' academic functioning and performance in higher education. This study examined the effectiveness of a brief online psycho-educational intervention grounded in the cognitive-behavioral approach, designed to improve academic motivation and reduce academic procrastination among undergraduate students. A quasi-experimental design with pre-test, post-test, and one-month follow-up assessments was employed, including an experimental group and a control group, with a total of twenty undergraduate participants. The intervention group attended a five-week online program, whereas the control group received no intervention. Data were analyzed using the Mann–Whitney U test, Friedman test, and Wilcoxon Signed-Rank test. A significant change across pre-test, post-test, and follow-up measurements was found for academic motivation in the experimental group ($\chi^2 = 12.20$, $p < .01$), whereas no significant change was observed in the control group ($\chi^2 = 2.51$, $p > .05$). Similarly, academic procrastination showed a significant change over time in the experimental group ($\chi^2 = 15.85$, $p < .001$), while no significant change was found in the control group ($\chi^2 = 4.67$, $p > .05$). The effect sizes calculated for the pre-test to post-test change between the experimental and control groups were 1.47 for academic motivation and 1.67 for academic procrastination, indicating large intervention effects. These improvements were maintained at the one-month follow-up assessment. Overall, the findings provide preliminary evidence that a brief online psycho-educational intervention based on cognitive-behavioral principles may represent a feasible and promising approach to enhancing academic motivation and reducing academic procrastination among undergraduate students.

Keywords: Academic motivation; academic procrastination; brief online psycho-education; undergraduate students

Öz: Akademik motivasyon ve akademik erteleme, yükseköğretimde öğrencilerin akademik işlevselliği ve performansıyla ilişkili iki önemli faktördür. Bu çalışma, lisans öğrencilerinin akademik motivasyonlarını artırmak ve akademik erteleme davranışlarını azaltmak amacıyla bilişsel davranışçı yaklaşım temelinde geliştirilen kısa süreli çevrim içi bir psikoeğitim programının etkililiğini incelemiştir. Çalışmada, deney ve kontrol gruplarını içeren, ön test, son test ve bir aylık izlem değerlendirmelerinden oluşan yarı deneysel bir desen kullanılmıştır. Araştırmaya toplam yirmi lisans öğrencisi katılmıştır. Deney grubundaki katılımcılar beş hafta süren çevrim içi programa katılırken, kontrol grubuna herhangi bir müdahale uygulanmamıştır. Veriler Mann–Whitney U testi, Friedman testi ve Wilcoxon İşaretli Sıralar Testi kullanılarak analiz edilmiştir. Deney grubunda akademik motivasyonun ön test, son test ve izlem ölçümleri arasında anlamlı bir değişim gözlenirken ($\chi^2 = 12.20$, $p < .01$), kontrol grubunda anlamlı bir değişim saptanmamıştır ($\chi^2 = 2.51$, $p > .05$). Deney ve kontrol gruplarının ön test–son test değişimine ilişkin hesaplanan etki büyüklükleri akademik motivasyon için 1.47, akademik erteleme için ise 1.67 olup, müdahalenin büyük etki büyüklüğüne sahip olduğunu göstermektedir. Elde edilen bu gelişmeler bir ay sonra gerçekleştirilen izlem değerlendirmesinde de korunmuştur. Genel olarak bulgular, bilişsel davranışçı ilkelere dayalı kısa süreli çevrim içi bir psikoeğitim programının, lisans öğrencilerinde akademik motivasyonu artırma ve akademik ertelemeyi azaltmada uygulanabilir ve umut vadeden bir yaklaşım olabileceğine ilişkin ön kanıtlar sunmaktadır.

Anahtar Kelimeler: Akademik motivasyon, akademik erteleme, kısa süreli çevrimiçi psiko-eğitim, lisans öğrencileri

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Introduction

Education plays a foundational role in both individual development and societal progress. Academic procrastination and academic motivation are important factors associated with students' academic functioning and well-being (García-Ros et al., 2023; Kotera et al., 2023). These constructs, while conceptually distinct, often interact in ways that directly impact students' academic trajectories (Liu et al., 2024).

Academic motivation, characterized by drive, persistence, and interest, is a key factor in guiding individuals toward their educational goals and is considered a cornerstone of academic success (Ryan & Deci, 2000). Rooted in Self-Determination Theory, academic motivation encompasses both intrinsic and extrinsic forces that energize and sustain students' pursuit of knowledge and skill mastery (Deci & Ryan, 1995; Ryan & Deci, 2000). Highly motivated students tend to dedicate more time to their studies, complete assignments regularly, and achieve higher grades. In contrast, low academic motivation can lead to disengagement from coursework, academic failure, and diminished self-efficacy (Liu et al., 2024; Sunu & Baidoo-Anu, 2023). Academic motivation not only impacts short-term academic success but also plays a crucial role in lifelong learning, career satisfaction, and personal development (Liem & Martin, 2012).

In contrast, academic procrastination -the voluntary delay of intended academic tasks despite foreseeable negative consequences- represents a maladaptive self-regulation failure (Solomon & Rothblum, 1984). Rooted in temporal discounting theory, procrastination is often driven by short-term mood repair and task aversion rather than laziness or poor time management alone (Reed & Luiselli, 2011). The behavior has been associated with increased stress, lower academic performance, reduced self-efficacy, and mental health problems including anxiety and depression (van Eerde, 2003; Unda-López et al., 2022). Chronic procrastination can create a feedback loop of guilt, avoidance, and further procrastination,

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thereby undermining students' long-term development (Rozental et al., 2018).

Academic procrastination and academic motivation are not merely opposites; rather, their relationship is deeply intertwined. Empirical studies have demonstrated that low motivation is a significant predictor of procrastination, as it reduces task initiation and increases feelings of guilt and anxiety related to academic responsibilities (e.g., Steel & Klingsieck, 2016). Moreover, motivational factors such as a lack of intrinsic interest or unclear goals are embedded within the phenomenon of procrastination (van Eerde, 2003). Persistent academic procrastination has been associated with a wide range of negative outcomes, including lower academic achievement, increased psychological distress, reduced well-being, and impaired self-regulation (Unda-López et al., 2022). Similarly, low academic motivation may decrease students' engagement with learning processes and weaken their academic persistence over time (Liu et al., 20224). Therefore, targeting both academic procrastination and academic motivation may contribute not only to students' academic performance but also to their psychological adjustment and long-term educational functioning. From this perspective, interventions designed to reduce procrastination should address not only task management skills but also motivational processes. In this perspective, cognitive-behavioral therapy (CBT)-based interventions may emerge as a promising approach.

CBT interventions include an educational component that empowers individuals to manage their difficulties independently. This approach views individuals not as passive victims of their problems, but as active agents capable of initiating change (Türkçapar, 2017). CBT models targeting procrastination focus on restructuring distorted beliefs (e.g., perfectionism, fear of failure), increasing behavioral activation, and promoting goal setting and time management strategies (Rozental & Carlbring, 2014). Furthermore, psycho-educational group programs that incorporate CBT components have been shown to effectively support adaptive academic behaviors, enhance self-regulated learning, and reduce avoidance patterns (Kaynak & Terzi, 2019; Türkçapar, 2017). Thus, CBT-based programs can assist students in regulating their emotions, setting goals, increasing motivation, and initiating tasks by targeting dysfunctional thoughts and fostering adaptive coping strategies (Kaynak & Terzi, 2019).

Academic procrastination and academic motivation are closely intertwined. Empirical studies indicate that low motivation contributes to procrastination by reducing task initiation and increasing avoidance behaviors (Steel & Klingsieck, 2016). Additionally, motivational problems such as low intrinsic interest and unclear goals are embedded within the procrastination process itself (van Eerde, 2003). Because procrastination involves both cognitive and motivational components, interventions targeting only time management skills may remain insufficient. In this context, cognitive-behavioral therapy (CBT)-based interventions may provide a comprehensive framework by addressing dysfunctional beliefs, promoting behavioral activation, and supporting adaptive coping and self-regulation skills (Rozental & Carlbring, 2014; Türkçapar, 2017).

Within this framework, online and brief psycho-educational interventions have gained increasing popularity in recent years due to their accessibility, cost-effectiveness, and alignment with the fast-paced, technology-oriented lifestyles of today's university students (Novella, Ng, & Samuolis, 2022). Systematic reviews define programs lasting ten sessions or fewer as "brief interventions"(Zhao et al., 2015). Shorter programs -such as those consisting of five sessions- are particularly suitable for educational settings, as they allow participants to acquire knowledge and develop skills without requiring long-term commitment. Such brief formats also promote more focused and intensive learning, which can lead to more effective outcomes (Donker et al., 2009). Although longer interventions are generally assumed to yield stronger effects, some meta-analyses indicate that well-structured and theory-driven brief interventions, particularly those based on cognitive-behavioral therapy, can also lead to significant improvements in self-regulation and psychological functioning (van Eerde, 2003; van Eerde & Klingsieck, 2018).

While experimental interventions play a crucial role in addressing academic difficulties, the majority of existing programs tend to focus solely on procrastination, often overlooking the underlying motivational mechanisms that sustain academic behaviors (Berber Çelik & Odacı, 2018; Ergulecet al., 2023; Gagnon et al., 2019; Koppenborget al., 2024; Toker & Avcı, 2015; Uzun Ozer et al., 2013; Yıldız & İskender, 2021). As a result, despite the growing interest in academic interventions, a noticeable gap remains in the literature regarding programs that simultaneously target both procrastination and academic motivation within a coherent theoretical framework. To fill this gap, the present study adopts a research design involving a small, focused sample to evaluate the preliminary effectiveness of a cognitive-behavioral therapy -based online psycho-educational program aimed at enhancing academic motivation and reducing academic procrastination. Enhancing academic motivation while reducing academic procrastination may contribute to students' academic engagement, academic persistence, self-regulated learning, and overall psychological well-being. In addition, reducing procrastination-related avoidance behaviors may help students manage academic responsibilities more effectively and experience lower levels of academic stress. From an institutional perspective, interventions targeting these variables may support student adjustment, academic performance, and retention in higher education settings. Therefore, the findings of the present study are expected to contribute to the development of accessible and theory-driven psycho-educational interventions for university students.

Within this framework, the present study aims to evaluate the effectiveness of a brief, five-session online psycho-educational intervention grounded in cognitive-behavioral principles on academic procrastination and academic motivation. Based on this aim, the study tests the following hypotheses:

H1: Compared to the control group, the experimental group will demonstrate a greater increase in academic motivation and a greater decrease in academic procrastination from pre-test to post-test.

H2: The increase in academic motivation and the decrease in academic procrastination observed in the experimental group at post-test will be maintained at follow-up, whereas the control group will not demonstrate comparable improvements across the same measurement period.

Method

Study Design

This study employed a quasi-experimental design including experimental and control groups with pre-test, post-test, and follow-up measurements. This methodological approach was selected to identify potential causal relationships between the

dependent and independent variables (Büyüköztürk, 2007). The independent variable is the brief online psycho-educational program designed with a cognitive-behavioral framework, while the dependent variables are academic procrastination and academic motivation. While the experimental group received the intervention, no treatment was provided to the control group.

Participants

According to Creswell (2017), quasi-experimental designs are frequently used in educational research to establish experimental and control groups. Participants in this study were undergraduate students at Akdeniz University. The inclusion criterion was voluntary consent, while the exclusion criteria were being a non-undergraduate student or currently receiving psychological support. Participants who met these criteria were allocated to the experimental or control group according to their availability to attend the scheduled intervention sessions. Those whose schedules were compatible with the planned days and times of the psycho-educational program were assigned to the experimental group, whereas those who were unable to attend the scheduled sessions were assigned to the control group. The study included a total of 20 participants (10 girls and 10 boys), with 10 participants assigned to the experimental group and 10 to the control group. Each group consisted of 5 girls and 5 boys. Given the intensive intervention and follow-up process, a relatively small sample was considered appropriate (Leon et al., 2011; Thabane et al., 2010). The mean age of participants in the experimental group was $M = 21.70$ ($SD = 2.26$), while the mean age in the control group was $M = 20.50$ ($SD = 2.26$). Students in both the experimental and control groups were enrolled in a wide range of departments. All class levels, including preparatory year students, were represented in both groups.

Data Collection Tools

Academic motivation scale. Originally developed by Vallerand et al. (1992) and adapted into Turkish by Karagüven (2012), this scale assesses academic motivation. It consists of 28 items rated on a 7-point Likert scale (1 = not at all, 7 = exactly) (e.g., "I derive pleasure and satisfaction when I learn something new"). The reliability coefficient ($\alpha = 0.83$) and construct validity (CFI =.94, NFI =.91, IFI =.94, SRMR =.065, RMSEA =.073) of the Turkish form are at the acceptable level.

Academic procrastination scale. Developed by Çakıcı (2003), this scale measures academic procrastination through 19 items (e.g., "I struggle to meet deadlines for homework/projects") on a single dimension. Responses are recorded on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Higher scores on the scale indicate a greater tendency for academic procrastination. The Cronbach's Alpha coefficient for the Turkish adaptation was calculated as 0.92, indicating high reliability. The construct validity of the scale was examined through factor analysis, and the findings revealed that the scale had an acceptable factor structure.

Procedure

Ethical approval for program implementation was received from the Akdeniz University Ethics Approval Board (Report Number: 2021G055). The program announcement was made by sharing the program poster, prepared by the researchers, with Akdeniz University students online. Before the intervention program began, all participants in the experimental and control groups completed pre-test measurements using designated scales, and personal information was collected via a form. Voluntary participation was indicated by the completion of these forms and scales online. After the intervention program was implemented, post-test evaluations were administered to both groups using the relevant scales. Finally, one month after the completion of the intervention, follow-up assessments were conducted in both groups to evaluate the sustainable effects of the online psycho-education.

Individual interviews were carried out with selected participants from the experimental group to evaluate their willingness to participate in the online psycho-educational program. During these interviews, general information such as the program's purpose, the number of sessions, and the duration of each session was provided. Additionally, topics such as whether participants could maintain regular attendance in the sessions and whether their individual goals aligned with the program's objectives were discussed. Before the sessions began, an orientation meeting was held with all participants in the experimental group. Details regarding this meeting are presented in Table 1.

The Process of the Brief Online Psycho-Educational Program

The brief online psycho-educational program based on the cognitive-behavioral approach was developed to examine its effects on undergraduate students' academic procrastination and academic motivation levels. The program was delivered by the first researcher to the experimental group in weekly sessions lasting approximately 90 minutes over five weeks. While the program aimed to increase undergraduate students' academic motivation and reduce their academic procrastination, adherence to the theoretical principles of the cognitive-behavioral approach was emphasized. Each session followed a structured sequence based on the cognitive-behavioral approach. Cognitive-behavioral techniques such as examining the relationships among thoughts, emotions, and behaviors, identifying automatic thoughts, cognitive restructuring, and behavioral activation were utilized throughout the sessions. The sessions were conducted under the supervision of the second researcher, who was trained in cognitive-behavioral therapy. Before and after each session, the researchers held planning and evaluation meetings.

The sessions were conducted in an online environment facilitated by the Microsoft Teams platform. This platform allowed materials used in the sessions to be shared with members by the group leader and completed assignments to be submitted to the group leader by members. Additionally, the Jamboard web-based tool was utilized during the sessions to enable members to work collaboratively and synchronously. The sessions were structured according to the cognitive-behavioral approach as follows: summarizing the previous session, reviewing homework, explaining the agenda, engaging in a warm-up activity, addressing the agenda items, assigning homework, receiving feedback about the session from members, summarizing the session, and concluding the session (Türkçapar, 2017). The content of the program sessions is presented in Table 1.

Table 1. Information of the intervention program

Intervention session	Subject	Process	Purpose	Homework
Orientation meeting	Preparing for the process	The general overview of the process was presented, and details about the session content were provided. Group rules were discussed, and participants' questions about the program were answered.	To help participants form a clear understanding of the intervention program and its progression. To allocate more time for other agenda items in the first session by addressing program details and group rules beforehand.	None.
Session 1: Meeting, goal setting, and introduction to cognitive behavioral therapy	Group introduction and theoretical foundation	The group leader introduced themselves. A warm-up activity was conducted to help group members get to know each other. Expectations regarding the process were addressed, and individual goals were set. The concepts of academic motivation and procrastination were introduced. A brief overview of cognitive behavioral therapy was provided, with a focus on the relationship between situation, thoughts, emotions, and behaviors. An animation video illustrating these concepts was shown.	To motivate members by helping them establish individual goals. To lay the foundation for upcoming sessions through an introduction to cognitive behavioral therapy.	Participants were given the situation-thought-emotion-behavior form and asked to observe themselves in an academic situation and complete the form accordingly.
Session 2: Addressing cognitive distortions and cognitive reframing	Understanding cognitive distortions	Cognitive distortions were explained, and examples were provided. Related videos (movie clips, music, etc.) were used to illustrate these concepts. Participants expressed their own cognitive distortions related to academic life. The impact of these distortions on their emotions and behaviors was emphasized, and connections between academic motivation and procrastination were explored.	To help participants recognize and reframe their cognitive distortions.	Participants were asked to complete the cognitive distortions form in the context of academic motivation and procrastination.
Session 3: SMART goals	Creating actionable and effective goals	SMART goals (Specific, Measurable, Achievable, Relevant, Time-bound) were explained in detail. Goals set in the first session were revisited and transformed into SMART goals. The importance of SMART goals and their impact on academic motivation and procrastination was emphasized.	To assist participants in formulating effective goals.	Participants were provided with a "STOP" worksheet to document moments of difficulty in achieving their SMART goals.
Session 4: Factors affecting the learning process	Exploring influences on academic motivation and procrastination	Factors affecting learning processes were discussed. Participants shared their personal experiences, focusing on both positive and negative influences.	To enhance participants' insights into factors impacting their learning processes and enable them to take actionable steps.	Participants were asked to complete the "Key to Academic Life: Learning" form, observing themselves.
Session 5: General evaluation and closure	Evaluation and program closure	The entire process was summarized. Participants evaluated the process, their progress, the group leader, and their achievements related to individual goals. The program was concluded.	To enable participants to recognize their progress and leave the program with positive feelings and thoughts.	Participants were encouraged to continue applying what they learned in the group sessions.

Data Analysis

Initially, the normality of the research data was examined. The kurtosis coefficients ranged between -1.099 and.025, while the skewness coefficients ranged between -.229 and.778. Skewness and kurtosis coefficients within the range of -2 and +2 are considered acceptable (George & Mallery, 2010). After evaluating skewness and kurtosis, the Shapiro-Wilk test was applied, as this test is suitable for small sample sizes ($N = 20$) (Mishra et al., 2019). Due to the p-values of the academic procrastination and academic motivation scales being less than 0.05, it was observed that the data did not follow a normal distribution (Mishra et al., 2019). Based on these results, non-parametric tests were considered necessary for data analysis. Moreover, for experimental studies with smaller sample sizes ($N< 30$), non-parametric tests are considered appropriate (Field, 2018). Data analyses were conducted using version 26 of the Statistical Package for Social Sciences (SPSS).

The Mann-Whitney U Test was employed to determine whether there were differences in academic procrastination and academic motivation scores between the experimental and control groups participating in the online psycho-educational program (Büyüköztürk, 2007). Additionally, the Friedman Test was used to examine significant differences among repeated measurements (i.e., pre-test, post-test, and follow-up test) within the control and experimental groups (Pallant, 2020). Following significant Friedman test results, post-hoc pairwise comparisons were conducted using the Wilcoxon Signed-Rank Test to identify the specific measurement occasions contributing to the observed differences. Because three pairwise comparisons (pre-test vs. post-test, pre-test vs. follow-up, and post-test vs. follow-up) were performed, a Bonferroni correction was applied to control for Type I error, and statistical significance was evaluated at $p<.017$ (Büyüköztürk, 2007).

Results

Mann-Whitney U Test for unrelated measures was used to test whether the scores related to the dependent variables differed according to the experimental and control groups. The results of the analysis are presented in Table 2.

Based on these findings, it can be said that the brief online psycho-educational program is effective in maintaining academic procrastination and academic motivation. The effect size value calculated pre-test and post-test of the experimental and control groups was 1.47 for academic motivation and 1.67 for academic procrastination. According to Cohen (1992), a value above.80 indicates that the effect size is strong.

Table 2. Mann-Whitney U test results for academic motivation and academic procrastination scores of experimental and control groups

The dependent variable	Measurement	Group	n	Mean rank	Sum of rank	U
Academic motivation	Pre-test	Experimental	10	9.70	97.00	42.00
		Control	10	11.30	113.00	
	Post-test	Experimental	10	14.30	143.00	12.00**
		Control	10	6.70	67.00	
	Follow-up test	Experimental	10	13.50	135.00	20.00*
		Control	10	7.50	75.00	
Academic procrastination	Pre-test	Experimental	10	9.90	99.00	44.00
		Control	10	11.10	111.00	
	Post-test	Experimental	10	6.00	60.00	5.00**
		Control	10	15.00	150.00	
	Follow-up test	Experimental	10	5.80	58.00	3.00***
		Control	10	15.20	152.00	

****p*<.001, ***p*<.01, **p*<.05*

Table 3. Friedman test results for academic motivation and academic procrastination scores of experimental and control groups

The dependent variable	Group	Measurement	n	SD	Mean rank	χ^2	df	*p*
Academic motivation	Experimental	Pre-test	10	24.50	1.1	12.2	2	.002**
		Post-test	10	13.67	2.4	0		
		Follow-up test	10	22.13	2.5			
	Control	Pre-test	10	8.61	2.35	2.51	2	.285
		Post-test	10	13.50	1.65			
		Follow-up test	10	12.49	2.00			
Academic procrastination	Experimental	Pre-test	10	15.31	3	15.8	2	.000***
		Post-test	10	10.04	1.65	5		
		Follow-up test	10	6.92	1.35			
	Control	Pre-test	10	14.74	1.50	4.67	2	.097
		Post-test	10	15.08	2.45			
		Follow-up test	10	15.86	2.05			

****p*<.001, **p*<.01*

Table 4. Wilcoxon signed rank test results for academic motivation and academic procrastination scores of the experimental group

The dependent variable	Measurement	Group	n	Mean rank	Sum of rank	z
Academic motivation	Pre-test	Negative rank	10	5.50	55.00	2.81*
	Post-test	Positive rank	0	.00	.00	
		Equal	0			
	Pre-test	Negative rank	9	6.00	54.00	2.71*
	Follow-up test	Positive rank	1	1.00	1.00	
		Equal	0			
	Post-test	Negative rank	6	4.25	25.50	.20
	Follow-up test	Positive rank	4	7.38	29.50	
		Equal	0			
Academic procrastination	Pre-test	Negative rank	0	.00	.00	2.81*
	Post-test	Positive rank	10	5.50	55.00	
		Equal	0			
	Pre-test	Negative rank	0	.00	.00	2.81*
	Follow-up test	Positive rank	10	5.50	55.00	
		Equal	0			
	Post-test	Negative rank	3	6.17	18.50	.48
	Follow-up test	Positive rank	6	4.42	26.50	
		Equal	1			

**p*<.05*

The calculated effect size values were obtained from the pretest-posttest control group design suggested by Morris (2008). The corresponding value is obtained as a combination of the standard deviation and mean values. According to Morris (2008), this value estimates the effect size more precisely.

Friedman Test was employed to examine whether there was a significant difference between the repeated measures of the experimental and control groups. The results of the analysis are reported in Table 3.

There was a significant difference between the academic motivation pre-test, post-test, and follow-up test measurements of the experimental group ($X2$= 12.20, p<.01), whereas there was no significant difference in the control group ($X2$ = 2.51, p>.05) was found. Similarly, while there was a significant difference between the academic procrastination pre-test, post-test, and follow-up test measurements of the

experimental group ($X2$= 15.85, p<.001), there was no significant difference in the control group ($X2$= 4.67, p>.05).

The Wilcoxon Signed Rank Test was employed to determine which measurement caused a significant difference between repeated measures. Multiple pairwise comparisons were conducted between pre-test, post-test, and follow-up measurements. The results of the analysis are presented in Table 4.

As it is seen on Table 4, there is a significant difference between the academic motivation (z = 2.81, p<.05) and academic procrastination (z = 2.81, p<.05) pre-test and academic motivation post-test scores of the experimental group students. This observed difference is in favor of negative ranks that is the posttest score. Likewise, academic motivation (z = 2.71, p<.05) and academic procrastination (z = 2.81, p<.05) follow-up test scores are significantly higher than pre-test scores. The analysis results indicate that there is no significant difference between the academic motivation (z =.20, p>.05) and academic procrastination (z =.48, p>.05) post-test and follow-up test scores of the experimental group.

Overall, the findings supported H1, indicating that the experimental group demonstrated increased academic motivation and decreased academic procrastination from pre-test to post-test compared to the control group. In addition, H2 was supported, as these changes were maintained during the one-month follow-up period.

Discussion

The present study examined the effectiveness of a brief online psycho-educational program designed to enhance academic motivation and reduce academic procrastination among university students. The findings indicated improvements in academic motivation and reductions in academic procrastination in the experimental group, and these changes were maintained during the one-month follow-up period. These findings suggest that interventions integrating cognitive-behavioral and motivational components may be beneficial in addressing academic procrastination and motivational difficulties among university students.

Experimental studies in the literature have similarly reported significant increases in academic motivation scores among participants following group interventions (Aghamohammadian Shaarbaf et al., 2015; Lv, 2023; Nawa & Yamagishi, 2021). For example, Nawa and Yamagishi (2021) asked university students to write online gratitude journals for two weeks. At the end of the study, they observed increased academic motivation in the experimental group, while no changes were found in the control group. Similarly, group intervention programs have been shown to effectively reduce academic procrastination scores in experimental group participants (Berber Çelik & Odacı, 2018; Ergulecet al., 2023; Gagnon et al., 2019; Koppenborg et al., 2024; Toker & Avcı, 2015; Uzun Ozer et al., 2013; Yildiz & Iskender, 2021). For instance, Yildiz and Iskender (2021) implemented an eight-session psycho-educational program with 24 students. Their findings indicated that the program effectively reduced intolerance of uncertainty and academic procrastination, with these effects persisting even after the program concluded. Similarly, the group intervention program developed and implemented in this study had a positive impact on the academic procrastination and academic motivation tendencies of participants in the experimental group.

The findings may be interpreted in light of the program content and cognitive-behavioral framework. The management of participants' expectations and the facilitation of introductions by the leader in the first session might contribute to the creation of a therapeutic atmosphere (Hauber & Boon, 2022). In the second session, cognitive distortions—one of the core components of cognitive-behavioral therapy—were addressed, and participants were guided to recognize and restructure these maladaptive thought patterns. Through this intervention, cognitive tendencies such as perfectionism and all-or-nothing thinking, which are commonly associated with academic procrastination and academic motivation, were also explored. For example, a participant who identifies their all-or-nothing thinking may also recognize their perfectionism and work towards changing these thought patterns, potentially reducing procrastination behaviors. Similar findings are reported in the literature. Uzun Ozer et al. (2013) developed a group therapy program based on rational-emotive behavior therapy to help participants recognize irrational thoughts and cognitive distortions contributing to procrastination tendencies. Their analysis revealed that students' academic procrastination scores significantly decreased, and these effects persisted over time. Thus, incorporating cognitive distortions into the program may have contributed to its effectiveness in addressing academic procrastination and academic motivation. The third session focused on SMART goals, assisting participants in revisiting the goals they set in the first session and converting them into specific and personalized objectives. One characteristic of SMART goals is their concreteness and relevance to the individual, in contrast to abstract and general goals. In cognitive-behavioral approaches, setting clear and specific goals is also critical for success. Defining the problem and establishing goals are foundational for the effectiveness of such interventions (Türkçapar, 2017). Therefore, addressing SMART goals may have contributed to the program's effectiveness. In the fourth session, factors influencing learning were discussed, and participants were encouraged to seek accurate and comprehensive information rather than relying on incomplete or incorrect knowledge. This process may have contributed to fostering academic motivation by enhancing individuals' sense of competence and perceived control in the face of academic tasks. In the fifth session, evaluation and closure activities were conducted. Such activities in final sessions are known to support participants in leaving the group with positive emotions (Wilson et al., 2007). In summary, the content of the intervention program may explain its observed impact on academic procrastination and academic motivation.

The relatively small size of the experimental group (10 participants) may have contributed to the success of the program. Research indicates that smaller groups tend to be more efficient and achieve higher developmental levels (Wheelan, 2009). Conducting group interventions in smaller groups allows participants to share personal experiences more freely and engage in deeper interactions, potentially increasing the effectiveness of the intervention (Seidman et al., 2022). Additionally, the small group size enables the leader to provide individualized feedback to each participant, further supporting the development of psychological awareness among members (Bohecker & Horn, 2016). While non-parametric analyses may raise concerns about generalizability, from an implementation perspective, the small group size appears to have supported the effectiveness of the intervention.

The healing nature of the group may also have contributed to the effectiveness of the program. Participants reported feeling a sense of relief upon realizing that they were not alone in facing challenges related to academic procrastination and academic motivation. This experience aligns with the

therapeutic factor of universality commonly observed in group settings. Therapeutic factors are curative elements that support personal growth and meaningful change among group members (Schneider Corey, Corey, & Corey, 2018). Additionally, the brief design of the intervention program developed and implemented in this study may have further enhanced its effectiveness. This is supported by existing literature, which shows that even very short interventions—such as those comprising three to four sessions (Casellas et al., 2021; Yamaguchi et al., 2006) or even a single session (Dunsky et al., 2023; Hayward et al., 2022)—can lead to meaningful positive changes in participants. Moreover, a meta-analysis has demonstrated that brief psycho-educational programs can improve participants' knowledge levels and help them develop more positive attitudes (Donker et al., 2009).

Limitations and Implications

This study has a number of limitations that should be acknowledged, and the findings should be considered with caution. The sample sizes are relatively small, and the study does not include a placebo group. Although the small sample size used in this study may have enabled more in-depth group interaction and participation, the limited number of participants restricts the generalizability of the findings and should therefore be considered a significant limitation of the study. The intervention program can be implemented in larger and more diverse samples to better understand its effects on academic procrastination and academic motivation. Additionally, due to the small number of participants, non-parametric tests were used, which might reduce the statistical power and reliability of the analyses.

Furthermore, as data were collected solely through self-report measures, response biases may have influenced the results, potentially compromising internal validity. Another limitation is that the intervention was designed based on the cognitive-behavioral approach; therefore, different theoretical frameworks or intervention strategies might yield varying outcomes. Future research may explore alternative approaches and utilize diverse measurement methods.

Experimental studies in the literature are typically designed with a high number of sessions, while studies with fewer sessions or single-session interventions are quite limited. In future studies, the number of sessions included in this research could be further reduced, contributing significantly to addressing the existing gap in the literature. Although the importance of academic motivation in academic contexts is well-known, experimental studies on this variable are almost nonexistent. In this regard, researchers could conduct various intervention studies to examine the effects of academic motivation. The literature also shows that face-to-face experimental studies are more prevalent than online ones. Experimental studies like this one can be conducted online or through hybrid formats, comparing the outcomes of face-to-face and online groups. Future intervention programs could also be developed using alternative theoretical approaches, such as Acceptance and Commitment Therapy (ACT), mindfulness-based interventions, self-regulated learning strategies, or motivational interviewing, to compare their effectiveness in improving academic motivation and reducing academic procrastination.

Considering all these factors, school/educational psychologists could draw significant conclusions from this study and implement brief, evidence-based interventions into their practices to address issues such as academic procrastination and academic motivation and. These interventions may provide accessible and efficient solutions for students, particularly in educational contexts where time and resources are constrained.

Conclusions

In conclusion, the findings provide preliminary evidence that the brief online psycho-educational program may enhance undergraduate students' academic motivation and reduce their academic procrastination. These improvements were maintained at the one-month follow-up assessment, suggesting that the program's effects may persist in the short term.

Author Contributions

The first author conducted the experimental intervention and was responsible for the manuscript writing process. The second author supervised the experimental intervention and contributed to the review and revision of the manuscript.

Ethical Declaration

This study was conducted with the approval of the Scientific Research and Publication Ethics Committee of Social and Human Sciences at Akdeniz University (Protocol No. 2021G055), granted at the meeting dated February 10, 2021 (Decision No. 03/62).

Conflict of Interest

The authors declare that they have no conflict of interest with any institution or person within the scope of the study.

Declaration of Generative AI Use

In this study, an artificial intelligence–assisted translation tool, DeepL Translate, was used solely to support English language editing and grammatical corrections. All translations were subsequently reviewed and revised by the authors.

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