The Effectiveness of Cognitive-Behavioral Therapy on Academic Procrastination and Academic Anxiety in Adolescents of Divorced Families

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ABSTRACT

The present study aimed to investigate the effectiveness of cognitive-behavioral therapy (CBT) in reducing academic procrastination and academic anxiety among adolescents from divorced families. This research employed a quasi-experimental design with a pretest-posttest control group. The statistical population included adolescents from divorced families who visited a counseling and psychological services clinic in Tehran in 2023. Using a convenience sampling method, 30 participants were selected and randomly assigned to experimental and control groups. The experimental group received eight 90-minute sessions of cognitive-behavioral training, while the control group continued with routine activities. Data were collected using the Academic Procrastination Scale (Solomon & Rothblum, 1984) and the Sarason Test Anxiety Questionnaire (1957). Data analysis was performed using descriptive statistics, the Kolmogorov–Smirnov test for normality, and univariate ANCOVA to compare posttest scores across groups while controlling for pretest scores. The results revealed significant differences between the experimental and control groups in posttest scores. After controlling for pretest scores, the ANCOVA showed that cognitive-behavioral therapy significantly reduced academic procrastination ($F(1,27) = 16.63$, $p = .005$, $\eta^2 = .41$) and academic anxiety ($F(1,27) = 14.32$, $p = .005$, $\eta^2 = .34$) in the experimental group. These findings suggest a meaningful impact of the intervention on the targeted psychological outcomes. Cognitive-behavioral therapy is an effective intervention for reducing academic procrastination and academic anxiety in adolescents from divorced families. By improving self-regulation and coping skills, CBT helps adolescents manage emotional distress and enhances academic functioning. These findings support the implementation of CBT in school and clinical settings for at-risk youth populations.

Keywords: Cognitive-Behavioral Therapy, Academic Procrastination, Academic Anxiety, Adolescents of Divorced Families.

Introduction

Human beings face numerous ups and downs throughout life, encountering new events on a daily basis. Some of these issues and occurrences are trivial and insignificant, posing no problem to the individual, and naturally, do not necessitate any adaptation. Among the various stages of life, adolescence is considered one of the most important and valuable periods. This transitional phase between childhood and adulthood marks the beginning of significant physical, psychological, and social transformations that influence future adult functioning and generate unique needs specific to this age group (1).

Parental divorce has numerous negative consequences for children, as it leads to considerable developmental distress across their lifespan. These consequences are clearly manifested in children's emotional, psychological, educational, social, and interpersonal responses. Divorce not only disrupts the psychological balance of both parents but also destabilizes the mental equilibrium of the children (2).

Procrastination is described as a lack of self-regulation and the tendency to delay actions necessary to achieve a goal. A prominent manifestation of procrastination occurs in educational settings, where it is referred to as academic procrastination. This type of procrastination reflects an irrational tendency to postpone the initiation or completion of academic tasks, even when the learner intends to complete the work within a set timeframe but lacks sufficient motivation (3). Dion (as cited in Kim & Su, 2013) suggests that there are two types of academic procrastination: active and passive. Active academic procrastination is essentially constructive and serves as a deliberate strategy, whereas passive procrastination reflects a negative behavioral pattern that induces fear, hesitation, and indecisiveness, hindering the individual's ability to function. Academic procrastination is a common phenomenon among students, typically expressed as failing to complete assignments or neglecting to study for exams (4).

Anxiety has many adverse effects on academic achievement, mental health, and students' performance. It can obstruct academic progress in several ways. Since learning is a process that depends on cognitive mediators, anxiety may indirectly affect cognitive processing at various stages (5).

Academic anxiety is a major form of anxiety experienced during schooling that impairs students' psychological well-being and affects their efficiency, personality, potential, and social identity. Academic anxiety refers to a common form of social phobia wherein students inhibit their own performance and become unable to cope with evaluation-related circumstances, such as examinations. Academic anxiety comprises a combination of phenomenological, physiological, and behavioral responses related to concern over the negative social consequences of failure in exams or similar evaluative situations (3). The findings of Neil et al. (2009) indicate that academic anxiety disrupts academic performance, hampers learning, and weakens study skills. Fear of receiving low grades, parental disapproval, ridicule by peers, and anxiety about being unable to pursue further education all contribute to heightened performance-related anxiety (6).

The cognitive-behavioral approach challenges irrational beliefs and negative assumptions that contribute to unpleasant emotional states. Cognitive-behavioral therapy (CBT) helps clients to identify and understand the thoughts and feelings that influence their behaviors. Characteristics of CBT, such as its structured, experiential, and group-based nature, as well as its active, goal-directed, and problem-focused approach, along with an emphasis on feedback and the teaching of coping skills, make it highly suitable for therapeutic intervention (7). Core CBT techniques include goal-setting, cognitive-behavioral assessments, self-

monitoring, Socratic dialogue, cognitive restructuring, problem-solving, behavioral exercises, relapse prevention, and real-life experiential learning (8).

Accordingly, based on the above, the present study seeks to answer the following research question: Does cognitive-behavioral therapy affect academic procrastination and academic anxiety in adolescents from divorced families?

Methods and Materials

Study Design and Participants

The research employed a quasi-experimental method with a pretest-posttest control group design. The statistical population consisted of adolescents from divorced families who referred to the Counseling and Psychological Services Clinic in Tehran in 2023. Using a convenience sampling method, 30 individuals were selected and assigned to two groups: experimental and control. Participants completed the Academic Procrastination Questionnaire and the Academic Anxiety Questionnaire. Subsequently, the experimental group underwent eight 90-minute sessions of cognitive-behavioral training, while the control group continued with their usual activities. After the completion of the intervention program, a posttest was administered to both groups.

Data Collection

Academic Procrastination Scale – Solomon and Rothblum (1984): This scale was developed by Solomon and Rothblum (1984) and named the Academic Procrastination Scale. It was first used in Iran by Dehghan (2008). The scale consists of 27 items and assesses three components: the first component, preparation for exams (8 items); the second component, preparation for assignments (11 items); and the third component, preparation for term papers (8 items). In the third component, questions related to term papers were interpreted for Iranian students as referring to research assignments and classroom projects, and this was explained to the respondents. Responses are scored on a Likert scale, where participants indicate their level of agreement with each item by selecting one of four options: "Rarely" (score = 1), "Sometimes" (score = 2), "Often" (score = 3), and "Always" (score = 4). Additionally, items 2, 4, 6, 11, 15, 16, 21, 23, and 25 are reverse-scored. In Dehghan's study (2008, as cited in Alimadad, 2009), the reliability of the test using Cronbach's alpha was reported to be 0.79. Previous studies have also confirmed the construct validity of the scale. This instrument shows significant correlations with the Beck Depression Inventory, Ellis's Irrational Beliefs Scale, Rosenberg's Self-Esteem Scale, and the Daily Avoidance Scale (9).

Sarason Test Anxiety Questionnaire (1957): The Test Anxiety Questionnaire was developed by Sarason in 1957 and contains 37 items to be answered with "yes" or "no" within 10 to 15 minutes. In the scoring procedure, a "no" response to items 3, 15, 26, 27, 29, and 33 is given a score of 1. Additionally, a "yes" response to all other items is also scored as 1. The total score represents the individual's test anxiety level, with higher scores indicating greater test anxiety. The minimum possible score is 0, and the maximum is 37. The developers confirmed the content and construct validity, and a reliability coefficient of 0.87 was obtained. The validity and reliability of the questionnaire have been assessed in multiple studies, reporting a Cronbach's alpha of 0.88, internal consistency of 0.95, and criterion validity of 0.72, indicating an overall acceptable psychometric quality (10).

Intervention

The intervention protocol consisted of eight structured 90-minute sessions of cognitive-behavioral therapy (CBT) delivered weekly to adolescents from divorced families. The sessions were designed based on standard CBT principles and tailored to address academic procrastination and academic anxiety. Session 1 focused on establishing rapport, setting goals, and introducing the CBT model. Session 2 addressed identification of negative automatic thoughts and cognitive distortions related to academic tasks. Session 3 emphasized behavioral activation and goal-setting strategies. Session 4 introduced time management and organizational skills to counteract procrastination. Session 5 focused on relaxation techniques and physiological strategies to manage anxiety. Session 6 provided training in cognitive restructuring and replacing maladaptive beliefs with adaptive thoughts. Session 7 involved problem-solving skills and coping strategies for academic stress. Session 8 included review of skills learned, relapse prevention planning, and encouragement of self-monitoring for continued application. Each session involved psychoeducation, interactive exercises, homework assignments, and group discussions to reinforce learning and skill acquisition.

Data analysis

In this study, data analysis was conducted using both descriptive and inferential statistical methods. Descriptive statistics, including mean and standard deviation, were used to summarize the participants' scores on academic procrastination and academic anxiety in both the pretest and posttest phases across experimental and control groups. For inferential analysis, the Kolmogorov–Smirnov test was first employed to assess the normality of the data distribution. Given the assumption of normality was met ($p > .05$), parametric tests were applied. Specifically, univariate analysis of covariance (ANCOVA) was used to compare posttest scores between groups while controlling for pretest scores. The effect sizes were evaluated using partial eta squared to determine the magnitude of the intervention's impact. All analyses were conducted at a significance level of $p < .05$ using SPSS software.

Findings and Results

As shown in Table 1, the mean scores of academic procrastination and academic anxiety variables in the experimental group during the pretest and posttest phases are presented. The results indicate that both academic procrastination and academic anxiety decreased.

Table 1. Descriptive Statistics of Variables in the Pretest and Posttest for Experimental and Control Groups

Variable	Test Phase	Experimental Group	SD	Control Group	SD
Academic Procrastination	Pretest	69.53	8.45	68.58	8.78
	Posttest	53.12	6.45	66.32	8.41
Academic Anxiety	Pretest	63.75	7.54	62.82	7.56
	Posttest	50.35	5.89	61.14	7.37

The results of the Kolmogorov–Smirnov test showed that the data distribution in both the experimental and control groups, in both pretest and posttest conditions, was normal ($P > .05$). Therefore, parametric tests were appropriate for testing the research hypotheses.

Table 2. Univariate ANCOVA Results for Differences Between Groups in Academic Procrastination

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance	Eta Squared
Academic Procrastination	Pretest	724.73	1	724.73	7.41	.006	.35
	Group	768.38	1	768.38	16.63	.005	.41
	Error	2568.57	27	95.13			
	Total	3057.41	29				

The ANCOVA results in Table 2 indicate that, after controlling for pretest scores, the group effect on posttest scores of academic procrastination was statistically significant. Specifically, after cognitive-behavioral therapy, academic procrastination scores in the intervention group significantly decreased compared to the control group. Therefore, cognitive-behavioral therapy had an effect on reducing academic procrastination in adolescents from divorced families.

Table 3. Univariate ANCOVA Results for Differences Between Groups in Academic Anxiety

Variable	Source of Variation	Sum of Squares	df	Mean Square	F	Significance	Eta Squared
Academic Anxiety	Pretest	658.38	1	658.38	6.86	.008	.23
	Group	812.45	1	812.45	14.32	.005	.34
	Error	2151.23	27	79.67			
	Total	3128.86	29				

The ANCOVA results in Table 3 demonstrate that, after controlling for pretest scores, the group effect on posttest scores of academic anxiety was statistically significant. That is, following cognitive-behavioral therapy, academic anxiety scores in the intervention group significantly decreased compared to the control group. Therefore, cognitive-behavioral therapy had an effect on reducing academic anxiety in adolescents from divorced families.

Discussion and Conclusion

The findings indicated that the mean scores of academic procrastination among adolescents in the experimental group were significantly different in the posttest compared to the pretest. As a result, cognitive-behavioral therapy (CBT) has an effect on academic procrastination in adolescents from divorced families. This finding is consistent with the results of prior studies (6, 9).

The cognitive-behavioral approach is based on a coherent cognitive model and emphasizes collaboration between the client and the therapist. This type of therapy is typically short-term and time-limited, with the aim of helping the client develop independent self-help skills and overcome fears. The cognitive-behavioral approach relies on a process of questioning and guided discovery rather than persuasion. CBT education is considered one of the most important factors in adolescent development, as it can enhance their cognitive growth, social skills, and communication abilities. Group games, through peer interaction, provide opportunities to strengthen communication and social competence, foster trust and self-leadership, and ultimately enhance children's social skills.

Procrastination persists despite awareness of its negative consequences and often leads to poor performance. Such behavior is prevalent at various educational levels and is widely observed in academic contexts, where it is believed to adversely affect students' academic achievement.

Moreover, the findings showed that the mean scores of academic anxiety among adolescents in the experimental group were significantly different in the posttest compared to the pretest. Thus, cognitive-behavioral therapy is effective in reducing academic anxiety in adolescents from divorced families. This finding aligns with the results of prior studies (1, 8, 9, 11).

Cognitive-behavioral therapists emphasize the role of belief systems and thinking patterns in shaping behavior and emotions. By identifying distorted beliefs and maladaptive thinking and applying specific cognitive techniques—which also include emotional and behavioral strategies—individuals can gain insight into previously unconscious thoughts, erroneous beliefs, and cognitive schemas. They can then learn ways to change their beliefs and develop a deeper understanding of themselves. Based on this, it can be inferred that children acquire the necessary skills to cope with anxiety and psychological stress and are able to use these skills effectively when needed, which leads to reduced anxiety.

Academic anxiety is a broad term that refers to a form of anxiety with a specific social fear component that causes individuals to doubt their own abilities. As a result, their ability to cope with evaluative situations, such as exams, is diminished. These situations place individuals in performance-based settings that demand problem-solving and decision-making. Therefore, it can be stated that individuals with academic anxiety may possess the required knowledge but are unable to demonstrate it in exam conditions due to the intensity of their anxiety.

This study had several limitations that should be considered when interpreting the findings. First, the sample size was relatively small (n = 30), which may limit the generalizability of the results to broader populations. Second, participants were selected through convenience sampling from a single counseling clinic in Tehran, potentially introducing selection bias. Third, the study relied solely on self-report questionnaires, which may be influenced by social desirability or response bias. Additionally, the short duration of the follow-up period did not allow for assessing the long-term sustainability of the intervention effects.

Future research should include larger and more diverse samples drawn from multiple settings to enhance external validity. Incorporating longitudinal designs with extended follow-up assessments would provide valuable insight into the long-term effectiveness and maintenance of cognitive-behavioral therapy outcomes. It is also recommended to use multi-informant assessment methods, such as teacher or parent reports, alongside self-reports to obtain a more comprehensive evaluation of changes in academic behaviors and emotional functioning. Furthermore, integrating digital CBT platforms or school-based interventions may increase accessibility and scalability for adolescents experiencing academic difficulties due to family disruptions.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

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

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